

IMPACT OF COMPANY LOCATION ON FINANCING EFFICIENCY

—
A Dissertation
Submitted to
the Temple University Graduate Board

—
In Partial Fulfillment
of the Requirements for the Degree
DOCTOR OF SCIENCE

—
by
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December 2022

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ABSTRACT

In this study, I aim to understand how company location impacts financing efficiency. I hypothesize that due to information asymmetry, companies located in central areas face less severe information asymmetry and less difficulties in acquiring loans or equity funds than those located in remote areas, resulting in higher financial efficiency. Such phenomena may lead to under-investment/over-investment. Using a sample of Chinese firms, my analysis lends support to the abovementioned hypothesis. In addition, I analyze the roles of social mobility, population mobility, and fast traffic penetration in moderating the relationship between company location and financing efficiency.

Keywords:

Company location; financing efficiency; social mobility, population mobility; information asymmetry

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CHAPTER 1

INTRODUCTION

This study mainly focuses on investigating how company location impacts financing efficiency. The maturity and development of network information technology have profoundly impacted the pattern of regional connections, and the telecommunication technology has expanded the range of fund flow, thus weakening the information segmentation caused by geographical segmentation. Especially, the development of 5G technology has improved the data capacity in information flow, which is bound to change all aspects of social and economic activities. However, it is the popularization and maturity of information technology that triggers information explosion. Today, investment decision makers have to face an unprecedented amount of information. Behind “cheap” information, the cost of information fraud has increased. Meanwhile, geographical distance may also increase the cost for verifying the authenticity of information. As a result, geographical segmentation may cause information asymmetry in the information age (John, Knyazeva, and Knyazeva, 2011).

Besides, Chinese traditional culture is rooted in blood and geographical relationship. In contemporary China, blood and geographical relationship still has considerable influence, in spite of a slight decline. Empirically, this influence may be reflected in the non-public internal information provided by stakeholders, or in that the authenticity of information is verified by virtue of local social resources. Therefore, in this era when informatization is speeding up and the world is getting increasingly smaller, geographical distance may still lead to information asymmetry, and companies

located in remote areas may have higher financing efficiency.

On this basis, the question to be discussed in this dissertation is whether the location of a company still influences its financing efficiency in today's China. According to the theory and experience, we believe that this influence still exists in China. Specifically, companies located in remote areas may face more serious information asymmetry and greater difficulties in acquiring loans or equity funds than those located in central areas, thus resulting in lower financial efficiency. This may lead to under-investment/over-investment.

What we find that is, for firms located in central locations, their financing efficiency is significantly higher compared with their peers in the non central locations. When financing efficiency is measure in the convertible bond market, in particular, the issuance of convertible bond, and the amount of convertible bond issued, this effect is statistically significant under all model specifications.

When we measure the financing efficiency using the convertible bond yield, or the issuance of equity financing, the results are weaker. Hence, the impact of location upon firms' financing efficiency seems to be concentrated in the convertible bond market, in stead of the equity market.

The last part of our empirical exercise focuses on the interaction effect of social mobility and population mobility. We hypothesize that the social mobility and population mobility both tend to weaken the impact of location on financing efficiency. Such weaker impact is confirmed in the regression framework with interaction terms.

In sum, our study emphasizes the importance of location among Chinese publicly traded firms. Such an impact is important to rationalize the observed development pattern among the Chinese firms. For example, there is a significant concentration of successful firms in the biggest cities.

We show that it is not just the location or city infrastructure or labor that impacts such a phenomenon. In fact, location advantage is obvious in the financial market as well. Firms in central locations tend to enjoy a higher financing efficiency, shown as an easier path towards convertible bond issuance, and raising more money while issuing convertible bond.

CHAPTER 2

LITERATURE REVIEW

2.1 Impact of Geographical Location On Information Cost

In recent years, western scholars have begun to study the influence of geographical factors on the investment decisions (stock selection, M&A, corporate governance, etc.) of various players in the capital market (e.g., fund managers, securities analysts, senior executives of listed companies, etc.), and have made a number of important achievements in corporate finance.

For example, Coval and Moskowitz (1999) found that fund managers and securities analysts have information advantages on the stocks in their respective work places, and prefer to hold the stocks in their respective work places and the stocks of listed companies located in big cities; Kang and Kim (2008) found that acquirers prefer to seek target enterprises locally and obtain higher profits from local M&As; the stocks of companies located in remote areas attract less attention from analysts (Loughran and Schultz, 2005), and due to the geographical limitations, companies located in remote areas get less venture capital funds (Huang et al., 2014).

Political geography factors affect the stock yield (Kim et al., 2012), and location was significantly negatively correlated with the level of corporate cash holdings (Clark et al., 2009, Boubaker et al., 2014). The study of Cai and Jiang (2013) confirmed that companies in different locations have different dividend policies.

Lerner (1995) found that the supervision cost of enterprises rises with the increase of distance, and the geographical location is also an important factor affecting the

decision-making of venture capital committees.

Despite the continuous scientific and technological progress in recent years, geographical factors have always had a noticeable impact on the information cost of analysts and investors. Based on the distance from companies to the nearest cities, this dissertation divides the geographical location of companies into two types, i.e., central location and remote location, and discuss the influence of company location (central location vs. remote location) on over-investment and under-investment.

2.2 Definition of Social Mobility And Related Studies

Social mobility is the change of an individual's or a group's social status, that is, the movement of an individual or a group from one status to another (Xu and Liu, 2011). Social mobility reflects the equality of opportunities in a society, affects the fairness and efficiency of a society, and plays an important role in the sustainable development of a country's economy (Liu and Zhou, 2014; Shao et al., 2017). For a long time, social mobility has been an important field of research in contemporary sociology. Scholars' studies on social mobility mainly focus on the exploration of mobility theories, and analysis of objective mobility phenomenon.

The concept of social mobility was first put forward by P.A Sorokin, who stated that social mobility is the exchange of population between different strata, that is, the movement of individuals from one stratum to another. Lipset and Reichard (1959) held similar views, and on this basis, put forward that the analysis of social mobility should focus on the movement of individuals in the social system from their original status to higher or lower status.

Wang (2010) explained from the perspective of social relations that social mobility refers to the change of social members' position in the social network, and its essence is the change of individuals' social relations. Peter Saunders (1990) divided social mobility into up-ward mobility, downward mobility, intra-generational mobility and inter-generational mobility.

2.3 Definition of Population Mobility And Related Studies

Residential mobility generally refers to the frequency at which people change their residence (Oishi, Schug, Yuki and Axt, 2015; Zhao et al., 2021; Shi et al.,2021). At the society level, residential mobility is the ratio of residents moving in a society, city or community in a certain period (Zhan et al.,2014); at the individual level, residential mobility refers to the number of an individual's moves in a certain period (Dai and Li, 2018).

People with different residential mobility will set up different social networks: an individual with high residential mobility may prefer a large but loose network with a large number of friends, while an individual with low residential mobility may prefer a small but close network with a small number of friends (Oishi and Kesebir, 2012; Chen,2022).

Individuals with high residential mobility keep losing friends. Hence, they need a large but loose social network which can provide enough friends to meet their needs for social support. People who move frequently rely more on the help of strangers in the new environment and prefer to make friends with average helpers (who help not only people within their social network, but also those outside their social network), while

people who never move home prefer to make friends with loyal helpers (who help people within their social network first) (Lun, Oishi, and Tenney, 2012). This means that people in regions with low population mobility attach great importance to intra-group cooperation, while those in regions with high population mobility attach great importance to the cooperation with strangers.

This study attempts to investigate whether residential mobility may affect the relationship between company location and investment behaviors.

CHAPTER 3

HYPOTHESIS DEVELOPMENT

3.1 Impact of Company Location On Financing Efficiency

With a vast territory, China is faced with unbalanced regional development and significant regional differences. Enterprises in different geographical locations differ greatly in economic development, local government regulation, development of product and factor markets, etc. The geographical location of enterprises reflects the possibility and convenience for investors to get access to information and perform supervision to a certain extent.

Geographical proximity is conducive to reducing the information asymmetry between investing and financing parties and alleviating the financing constraints on enterprises. Enterprises in or close to central cities can raise funds by various means, such as bond issuance, private placement and trust plans.

However, for enterprises in remote areas or far away from central cities, transaction costs and operational risks increase the external financing costs, thus intensifying financing constraints (Huang et al.,2016; Hu et al.,2020;Guo et al.,2021). For example, Degryse and Ongena (2005) found that the loan rate rises with the increase of distance between the company and the bank, and distance between the company and the bank's competitors.

The decrease of inter-bank competition caused by distance greatly increases the financing costs of enterprises. Although the space-time interval of human society has been narrowed in the information age, the information asymmetry among market

players caused by geographical factors cannot be completely eliminated, which makes it impossible for enterprises to get rid of the financing constraints caused by information asymmetry.

In light of these considerations, I propose the following main hypothesis:

Main Hypothesis (H1): Due to information asymmetry, companies located in central areas face less severe information asymmetry and less difficulties in acquiring loans or equity funds than those located in remote areas, resulting in higher financial efficiency.

The difference of financing efficiency between companies located in central areas and those located in remote areas is caused by information asymmetry. In different areas, the severity of information asymmetry is affected by objective factors of regional development. Therefore, this study estimates that the relationship between geographical location and financing efficiency may be regulated by local information or traffic convenience. Specifically, we propose two moderating variables, i.e., the social mobility, and the population mobility.

3.2 Moderating Effect of Social Mobility

Social mobility refers to the degree of difficulty in change of an individual's or a group's social status. High social mobility may weaken the information asymmetry caused by geographical segmentation. It is because in regions with high social mobility, people have extensive opportunities to move to higher strata by relying on their own knowledge or capability.

Therefore, in regions with high social mobility, talents and resources are allocated

and utilized in a more reasonable and efficient way, and the geographical and blood barriers of mobility are broken down.

In addition, we find that in regions with higher social mobility, there are smaller differences of financing efficiency between companies in central location and those in remote location; and in regions with lower social mobility, there are greater differences of financing efficiency between companies in central location and those in remote location.

Auxiliary Hypothesis I (H2): In regions with higher social mobility, the difference between financing efficiency is attenuated between companies in remote locations versus those in central locations.

3.3 Moderating Effect of Population Mobility

Population mobility is a variety of short-term, repeated or periodic movements of population between regions. In regions with low population mobility, people attach great importance to intra-group cooperation; in regions with high population mobility, people attach great importance to the cooperation with strangers.

One obstacle to the cooperation with strangers is a lack of access to strangers' information. Therefore, in regions where people attach great importance to the cooperation with strangers, people hope to expand their social networks to obtain more information.

We believe that in regions with high population mobility, the more social capital people have to acquire information, the more resources investors may have to solve the problem of information asymmetry. On this basis, we believe that population mobility

may also influence the difference of financing efficiency between companies in central and remote locations.

Auxiliary Hypothesis II (H3): In regions with higher population mobility, the difference between financing efficiency is attenuated between companies in remote locations versus those in central locations.

3.4 Measure of Financing Efficiency, Social Mobility, And Population Mobility.

(1) Measure of financing efficiency

In this study, we focus on three measures of financing efficiency. The first measure is the total amount of convertible bonds issued by the firm. This measure refers to the total amount of special corporate bonds issued by the company in the current year that can be converted into ordinary shares at a specific time and under certain conditions.

We feature the total amount of convertible bonds as the measure of financing efficiency for the following reasons. As a new type of financing tool with both equity, debt and conversion options, convertible corporate bonds (hereinafter referred to as "convertible bonds") have the advantages of many ordinary debt and equity financing methods that cannot be compared and have been favored by many Chinese enterprises in recent years.

On the one hand, the issuance of convertible bonds is to give creditors to convert options, which can reduce the shareholders' behavior of plundering the interests of creditors to a certain extent, thereby reducing the cost of debt representation (Jensen, 1976).

On the other hand, when the operation is volatile, due to information asymmetry,

the perception of the company's risk level will be different between the company's internal and external investors, and the issuance of convertible bonds will greatly reduce this valuation cost (Essig, 1991). Finally, issuing convertible bonds has clear tax advantages. Since interest is paid before tax and dividends are paid after tax, shareholders and bondholders form an incentive to cooperate in order to reduce the company's tax burden, so for companies with higher effective tax rates, issuing convertible bond financing is better than equity financing.

Note that in China, the issuance of convertible bond is very popular among publicly traded firms, and it continues to gain popularity over the years.

In Figure 1, we can see that the amount of convertible bonds issued by the company is increasing year by year, indicating that the issuance of convertible bonds is an important way for the company to raise funds. This also verifies from the data level that convertible bonds have many advantages that cannot be compared with ordinary debt and equity financing methods, and have been favored by many Chinese enterprises in recent years.

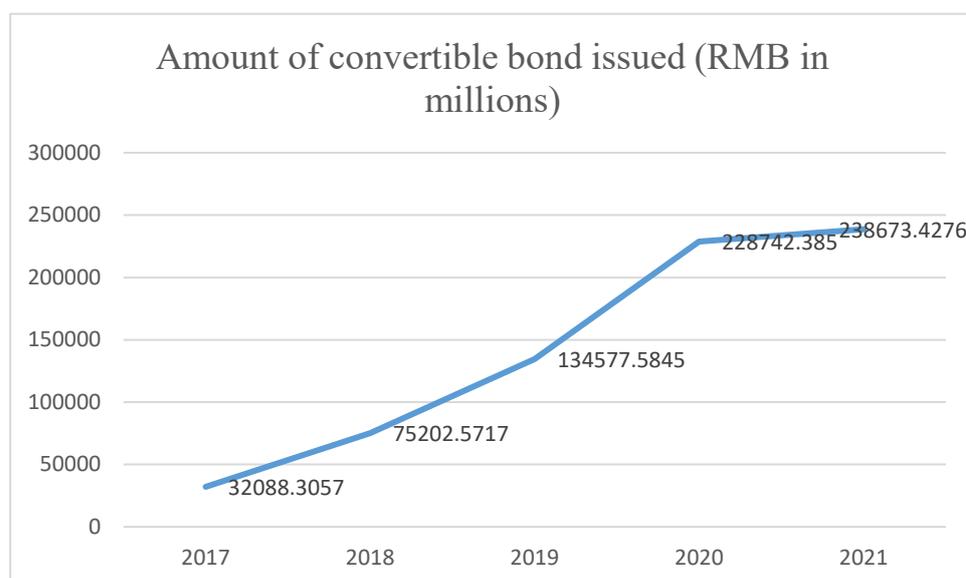


Figure 1. Amount of convertible bond issued, 2017 - 2021

The second measure of financing efficiency is the interest rate on the convertible bond that a company issues. We are interested in testing if information advantage allows firms in central locations to enjoy a lower interest rate when issuing convertible bonds.

In other words, do investors value the location of the firm, the less amount of information asymmetry, and does this show up as investors' willingness to accept a lower interest rate on the bonds that they are purchasing from the firm.

The third measure of financing efficiency is the amount of equity issued by the firm. As these are publicly traded firms to start with, we are looking at the follow-on offering activities by the firms.

Issuing equity is an important venue for firms to raise money. It has always been an important financing method. With the development of the financial market in China, issuing equity is becoming more important among Chinese firms.

As can be seen from the figure, the number of new shares issued by the company is increasing year by year, indicating that the issuance of additional new shares is an important way for the company to raise funds. This also verifies from the data level that many Chinese listed companies will choose to issue new shares in private placement for financing due to agency costs, simple restrictions on approval procedures, and reduced equity concentration.

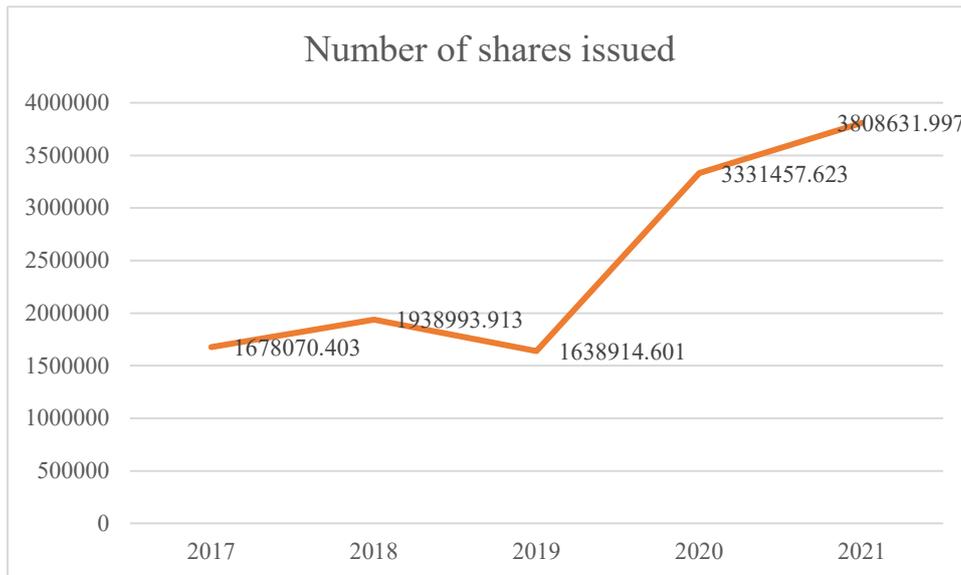


Figure 2. Number of shares issued in equity offerings.

We would like to emphasize that we are not making a statement as whether issuing bond or equity is more efficient for the firm. In other words, we are kind of taking the classic irrelevance capital structure model approach. To distinguish between if issuing debt is more efficient or issuing equity is more efficient for Chinese firms is beyond the scope of this study. We are simply trying to understand if firms with central locations issue more debt as well as more equity, hence, experiencing a higher financing efficiency.

(2) Measures of social mobility and population mobility

We calculated the social mobility and population mobility according to the data from CGSS (Chinese General Social Survey) database. Launched in 2003, CGSS is the earliest national representative continuous survey project run by academic institution. Similar to Alesina et al.'s study, CGSS defined social mobility by class identity measurement. In CGSS, individuals measured their social classes at present, ten years later, and at the age of 14 respectively, with the top class denoted as 10 and the bottom

class as 1. Specifically, if one's social class is expected to rise ten years later, his social mobility is expected to be high; if one's social class at present is higher than that at the age of 14, he has experienced upward social mobility.

Accordingly, the experienced social mobility and expected social mobility can be distinguished. Population mobility was measured in a similar manner. Respondents were asked to report the duration (total number of years) in which they lived in local places (district/county/county-level city) after the age of 14. A shorter duration represents a higher mobility.

Relying on the classified summation based on the current province of habitual residence, we took the experienced and expected mobility reported by individuals in a province as this province's social mobility index, and the reported average duration in which individuals lived in a province after the age of 14 as this province's population mobility index (the value of the average duration (number of years) was reversed for the convenience of analysis. Hence, the higher the population mobility index, the higher the population mobility).

CHAPTER 4

DATA, SUMMARY STATISTICS AND REGRESSION RESULTS

4.1 Data

(1) Sample

In this study, we mainly used the data of companies from 2017 to 2021, from which we excluded the data of local government-owned, foreign-funded and central government-owned enterprises since we believed that the location of a state-owned enterprise has limited influence on its financing. Besides, our samples were all companies listed after 2009. On the basis of the above conditions, we finally selected 2,363 sample companies.

(2) Location

In this study, we employed one measure of company location, i.e., central city (Center). Specifically, we used Wind's statistics to determine the location of company headquarters.

With regard to central cities, we mainly referred to the study of Loughran and Schultz (2005) who defined a company headquartered in one of the ten largest metropolitan areas as being in a central location according to the population size reported in the Census 2000. Similarly, we classified the four first-tier cities and the 15 new first-tier cities in China released by the New First-Tier City Research Institute of China Business Network in 2020 as central cities.

Accordingly, a sample company headquartered in one of these cities was classified as being in a "central location". These cities are Beijing, Shanghai, Guangzhou,

Shenzhen, Chengdu, Chongqing, Hangzhou, Wuhan, Xi'an, Tianjin, Suzhou, Nanjing, Zhengzhou, Changsha, Dongguan, Shenyang, Qingdao, Hefei and Foshan. “*Central Location*” equals 1 for companies headquartered in these cities, and 0 otherwise. In this study, 55% of our samples were classified as being in central location. See Table 1 for summary statistics of main variables.

(3) Control variables

We include control variables that may affect the total convertible bonds, interest rate on the bond, as well as the amount of equity issued by a company. The following control variables are included: total assets, total market value, asset-liability ratio, return on assets (ROA), return on equity (ROE), return on individual stock in the previous year and return of stock market in the previous year.

“**Total assets**”: all assets owned or controlled by a company, i.e., the total assets listed in the company’s balance sheet; “**Total market value**”: the book value of total assets + the market value of ordinary shares – the book value of ordinary shares. “**ROA**”: the ratio of EBITDA to total assets; “**ROE**”: the ratio of EBITDA to average net assets; “**Asset-liability ratio**”: the ratio of total liabilities to total assets; “**Return on individual stock in the previous year**”: the rise and fall of return on individual stock from the beginning to the end of the previous year; “**Return of stock market in the previous year**”: the rise and fall of return of the whole stock market from the beginning to the end of the previous year.

All these financial variables are obtained from Wind database.

4.2 Summary Statistics

Now we discuss the summary statistics of the sample firms. The sample is 2,363 firms between 2017 and 2020.

First, we present the summary statistics of firms that issued convertible bond during the sample period. Among the 11815 firm-year observations, 794 issued convertible bonds. The average amount of the convertible bond issuance is 891 million RMB, with a minimum of 31 million and a maximum of 7.3 billion. The standard deviation of the amount of issuance is 951 million, indicating substantial amount of variation among the issuances during the sample period.

Next, we look at the convertible bond yield, i.e., the interest rate carried on these convertible bond issuances. We see that the interest rate is as low as 0.01% and is as high as 10%. The average is 7%, with a standard deviation of 25%.

	Obs.	Mean	STD	Min	Max
Number of firms issued convertible bond	794				
Dollar amount of issuance (\$m RMB)	794	890.89	951.53	31.00	7300.00
Convertible bond yield	788	0.07	0.25	0.0001	0.10

Next, in Table 2, we examine the firms that issued equity during the sample period. We observe a total of 1061 equity issuance. Among these equity issuances, the firm on average issue 116.8 million shares. The minimum number of shares issued is 36 million, and the maximum number of shares issued is 636.7 million. The standard deviation is

35.6 million. On average, the equity issuance size is 176 million, with a standard deviation of 138 million. These deals range from 2 million to 95 billion.

Relative size is the ratio between the number of shares issued and the number of shares outstanding prior to the issuance. We see that the average relative size is 30%, with a standard deviation of 102%. The minimum relative size is a minuscule of 0.01%, while the largest relative size is 720%.

Hence, just like bond issuance, the equity issuances exhibit substantial amount of variation among the deals.

	Obs.	Mean	STD	Min	Max
Number of firms issued equity	1061				
Number of shares issued	1061	12	36	0	637
Dollar amount of issuance	1061	176	138	2	95550
Relative size	1061	0.300	1.020	0.001	7.204

Next, we move on to the data that is implemented in this study.

In Table 3, we depict the descriptive statistics on the data of all the years.

We start with our main variable of interest, i.e., measures of financing efficiency.

First, we look at the dummy variable indicating whether a firm issues convertible bond or not. This dummy takes an average value of 0.07, indicating that on average, 7% of the firm year observations see that the firm issues convertible bond.

Next, we look at the total amount of convertible bond issued. Here, we are pooling

firms that issue convertible bonds, as well as those that do not. On average, the convertible bond issuance takes a value of 60 million, with a standard deviation of 332 million.

Third, the focus is on the yield of the convertible bonds that investors are willing to pay in the market. The average yield stands at 7%, with a standard deviation of 39%.

Fourth, the amount of equity issuance averages at 52 million. The standard deviation of equity issuance is 85 million.

The summary statistics of the four major variables of interest shows that there is substantial amount of variation among the firm year observations in the sample. This facilitates us to delineate the impact of location upon the financing efficiency, measure by these variables.

“*Central Location*” is the dummy variable that equals 1 for firms located in the 19 first tier and new first-tier cities in China in 2020, and equals 0 if the firm is located in a remote area.

Next, we focus on the two interacting variables. The social mobility variable takes an average value of 1.44, with a standard deviation of 0.15. It varies from 0.75 to 1.72. The population mobility variable has an average value of 24.6. The standard deviation of this variable is 4.65, and it varies from 18.31 to 34.23.

The last set of variables are the control variables that we include in the multivariate regression. For the total assets of the firms, the average is 6.2 billion with a standard deviation of 43 billion. The smallest firm year in the sample has 522 million and the largest has 2 trillion of assets.

For the ROE, it has an average of 7.43%. The standard deviation is 107%, and the ROE varies from -114% to 176%. Another measure of profitability, the ROA, takes an average of 7.2%, with a standard deviation of 112.7%. The ROA ranges between -183.98% to 174.15%. Both measures of profitability exhibit similar magnitudes as well as variation among the firm year observations.

We also check the market value of the firm at the end of each calendar year, calculated as the stock price at the end of the year multiplied by the number of shares outstanding at the end of the year. The market value of the firms in our sample averages 8.23 billion, with a standard deviation of 27 billion. The market value of the firms varies from 412 million to 817 million in the sample.

The asset-liability ratio is defined as the debt divided by assets. This measures the leverage of the firm, and it ranges between 0 (no leverage) to 405% (high leverage, possibly in distress). The average leverage of the sample firms stands at 36.88% in the sample.

Lastly, we include the return of the individual stock as well as the market in the regression to control for market conditions. Among the sample firms, the average annual return on the stock is 9%, with a standard deviation of 63.13%. The lowest return is -82.15%, and the highest is 1600%.

Not surprisingly, the market return is much less extreme. The average stock market return over the sample years of 2017 to 2021, a course of 5 years, is 7.78%. The lowest return is -28.25% and the highest return is 33.02%.

Table 3: Summary Statistics, all years

	Obs.	Mean	Sd	Min	Max
Convertible bonds issuance (dummy)	11815	0.07	0.25	0	1
Total convertible bonds issued by the end of the period (million RMB)	11815	59.99	332.48	0	7300
Convertible bond yield	11815	0.07	0.391	0	0.1
Total equity issued by the end of the period (million RMB)	11815	52	85	0	95550
Central location (dummy)	11815	0.55	0.501	0	1
Social mobility	11815	1.44	0.15	0.75	1.72
Population mobility	11815	24.6	4.65	18.31	34.23
Total assets (million RMB)	11815	6221.04	43169.35	522	2060155
ROE (%)	11815	7.43	107.95	-114.1	176.97
Asset-liability ratio (%)	11815	36.88	20.17	0	405.41
ROA (%)	11815	7.2	112.7	-183.98	174.15
Ending market value (million)	11815	8227.63	27130.55	312	817901.6
Return on individual stock in the previous year (%)	11815	9.02	63.13	-82.15	1600.56
Return of stock market in the previous year (%)	11815	7.78	21.35	-28.25	33.02

In sum, the annual summary statistics reveal substantial fluctuations in the amount of convertible bonds issued, the amount of equity issued, as well as the market conditions. Careful inspections of all the dependent and independent variables remove any concerns of non-stationarity issues.

4.3 Univariate Evidence

In Table 4, we first carry out a t-test to compare the difference between companies registered in non-first-tier cities and those registered in first-tier cities in financing

efficiency.

Specifically, we, taking one-year financing efficiency of a company as an observation per firm, compared the difference between companies registered in non-first-tier cities and those registered in first-tier cities in terms of the convenience bond yield and total amount of convertible bonds issued by the end of the period.

Table 4 Independent Sample Test

Year		T-test for equality of mean values						
		T	Significance (two-tailed)	Mean difference	Standard deviation	Confidence interval of 95%		
						Lower limit	Upper limit	
2017 (RMB 1 million)	Total convertible bonds issued by the end of the period	Use equal variance	0.98	0.34	422.49	433.04	-473.32	1318.31
		Not use equal variance	0.97	0.34	422.49	435.93	-482.21	1327.19
	Yield	Use equal variance	-4.38	0.67	-0.02	0.05	-0.12	0.08
		Not use equal variance	-0.44	0.66	-0.02	0.05	-0.12	0.08
2018 (RMB 1 million)	Total convertible bonds issued by the end of the period	Use equal variance	0.10	0.92	27.01	260.38	-493.01	547.04
		Not use equal variance	0.11	0.92	27.01	254.37	-481.10	547.04
	Yield	Use equal variance	1.20	0.24	0.36	0.30	-0.24	0.96
		Not use equal variance	1.05	0.30	0.36	0.34	-0.34	1.06
2019	Total convertible	Use equal variance	1.23	0.22	203.13	203.13	-124.09	530.34

bonds issued by the end of the period (RMB 1 million)	Not use equal variance	1.18	0.24	203.13	172.62	-139.16	545.41
	Use equal variance	0.88	0.38	0.13	0.15	-0.16	0.43
Yield	Not use equal variance	0.78	0.44	0.13	0.17	-0.21	0.47
	Use equal variance	1.39	0.17	164.01	118.45	-69.26	397.28
2020 Total convertible bonds issued by the end of the period (RMB 1 million)	Not use equal variance	1.38	0.17	164.01	118.85	-70.26	398.29
	Use equal variance	-2.23	0.03	-0.10	0.04	-0.18	-0.01
Yield	Not use equal variance	-2.23	0.03	-0.10	0.04	-0.18	-0.01
	Use equal variance	1.17	0.25	132.06	113.31	-91.03	355.16
2021 Total convertible bonds issued by the end of the period (RMB 1 million)	Not use equal variance	1.17	0.25	132.06	112.55	-89.64	353.76
	Use equal variance	-2.58	0.01	-0.14	0.05	-0.24	-0.03
Yield	Not use equal variance	-2.57	0.01	-0.14	0.05	-0.24	-0.03

In the table, we see that there is difference between companies registered in non-first-tier cities and those registered in first-tier cities in the bond yield of convertible bonds. Meanwhile, we analyzed the companies that have ever issued convertible bonds. Yearly statistics show that the average interest rate of convertible bonds of companies registered in first-tier cities was 9.6% and 13.6% lower than that of companies

registered in non-first-tier cities in 2020 and 2021, respectively.

The difference in yields of convertible bonds was statistically significant in these two years. The results are consistent with the expectation that companies that are registered in first-tier cities and have issued convertible bonds may have a higher interest rate of convertible bonds.

In the same way, we analyzed the difference between companies registered in non-first-tier cities and those registered in first-tier cities in total convertible bonds issued by the end of the period.

We see that companies registered in first-tier cities issued more convertible bonds every year. From 2017 to 2021, the total amount of convertible bonds issued by companies registered in first-tier cities was RMB 422 million, RMB 27 million, RMB 203 million, RMB 164 million and RMB 132 million higher than that of convertible bonds issued by companies registered in non-first-tier cities. On the other hand, we note that there is little statistical significance among these differences, possibly due to the fact that this univariate approach fails to control for other important determinants of bond issuance.

Generally speaking, companies registered in first-tier cities issued more convertible bonds. Based on the statistical analysis on five-year samples, it is found that that the total amount of convertible bonds issued by companies in first-tier cities was significantly higher than that of convertible bonds issued by companies in non-first-tier cities. As we cautioned earlier, the yearly comparison is just a starting point, because it cannot account for other factors that systematically impact the firm's issuing activities

in the convertible bond market.

Lastly, we do not present the yearly comparison for equity issuances here to save some space. These results qualitatively resemble the pattern in Table 4 and are available upon request from the author.

4.4 Multivariate Regression Evidence

4.4.1 The Decision To Issue Convertible Bond

As companies in first-tier cities and non-first-tier cities are different in some characteristics and macro-economic environment, t-test alone cannot completely exclude the impact of these control variables. Therefore, we implement several sets of multivariate regression frameworks to examine the difference in financing efficiency among firms located in central areas as well as in remote areas.

In the first set of analysis, we feature the issuance of convertible bonds as a dummy variable in the multivariate regression. Specially, the dependent variable is whether or not convertible bonds are issued (0 = unissued convertible bonds, 1 = convertible bonds issued).

We implement 5 models. Model 1 is the most parsimonious, as it only includes the central location dummy as the independent variable and serves as a baseline model. Model 5 is the most complete, which includes all of the control variables as shown in Table 3. Model 2, 3, and 4 are in between. All model results are reported in Table 5.

Among the independent variables, the first is the central location dummy, which is our main variable of interest. Our main hypothesis conjectures that the coefficients before the central location dummy should be positive, leading to conclusion that firms

in central locations enjoy more efficient financing in the market, which is reflected in issuing convertible bond.

We see that the positive coefficient before the central location dummy remains significant when we include the full set of control variables, indicating that the explanatory power of the location of the firm stays the same when all firm and market characteristics are taken into consideration. This is an important point as we can see that the central location carries an important impact on the decision to issue convertible bond on top of other factors that influence such decision.

Some control variables have a significant effect on the bond issuance decision that the firm is making. For example, the total assets of the current period and the market value at the end of the period have a positive impact on the issuance of convertible bonds at the end of the period, that is, the higher the total assets and the market value at the end of the period, the more likely the convertible bonds are issued.

Current ROE has no significant effect. However, the current negative ROA predicts the possibility of issuing convertible bonds. In contrast, the impact of the current leverage ratio is also significant, that is, the higher the current asset-liability ratio, the more likely it is to issue convertible bonds.

In terms of the market conditions, both the individual stock return and the market return are positively correlated with the issuance of convertible bonds, which is consistent with the idea the investors tend to be more enthusiastic about firms that have performed well recently, or if the market has been doing well recently.

A quick summary so far: we find largely consistent evidence in the multivariate

regression framework with the view of this study that companies located in remote areas face more serious information asymmetries and have more difficulty obtaining loan or equity funds than companies in the central region, resulting in lower convertible bond issuance rates. That is, geographical proximity can improve the financing efficiency of the company.

Table 5: Impact of location on the issuance of convertible bond
 Dependent variable: If the company issued convertible bond then = 1, otherwise = 0

	model 1	model 2	model 3	model 4	model 5
	coeff	coeff	coeff	coeff	coeff
constant	0.75***	0.07***	0.08***	0.01	0.01
Central location (dummy)	0.02***	0.02***	0.02***	0.01***	0.01***
Total assets of the Current year (RMB 1 million)		0.01***	0.01***	0.01	0.01
Total market value At the end of the period (RMB 1 million)		0.01***	0.01***	0.01***	0.01***
ROE (%)			0.01	0.01	0.01
ROA (%)			-0.01***	0.01***	-0.01***
Asset-liability ratio (%)				0.01***	0.01***
Return on individual Stock in the previous year (%)					0.01*
Return of stock market in the Previous year (%)					0.01***
Adjusted R2	0.001	0.005	0.008	0.028	0.033

4.4.2. The Amount Of Convertible Bond Issued

Now we turn to the results when we use the amount of convertible bonds as the independent variable, keeping the control variables the same. Note that in this way, we

are restricting the sample to the 794 firms that issued convertible bond during the sample period.

We tabulate the results in Table 6. The dependent variable is the total amount of convertible bond issued, and we adopt the same models 1 to 5 as in the previous table. Such analysis facilitates the comparison between the measures of financing efficiency, i.e., whether we are focusing on the decision to issue bond, or we are focusing on the actual amount of bond raised by the firm.

The most important finding is that the central location dummy continues to exhibit a statistically significant positive impact in explaining the convertible bond issuances. In particular, among the 5 models, 4 of the coefficients are significantly positive, and the magnitude is largely consistent across the models.

Similar to what we observe in Table 5, larger firms tend to issue more convertible bond. Intuitively, this is consistent with the fact that bigger firms, measured by both the total assets and market value, tend to have better reputation as well as a bigger financing need. Hence, when these firms issue convertible bond, they tend to issue bigger amount.

Profitability measure, ROE, and ROA, have little impact on the bond issuance amount.

The leverage ratio is positively correlated with the convertible bond deal size, suggesting that firms that have debt outstanding probably have additional capacity to take on debt in the market.

Lastly, the individual stock return and market return do not seem to be correlated with the convertible bond issuance size.

Table 6: Impact of location on total convertible bonds issued

Dependent Variable: total convertible bonds issued by the end of the period (RMB 1 million)

	model 1	model 2	model 3	model 4	model 5
	coeff	Coeff	coeff	coeff	coeff
Constant	832.73 ***	591.04***	609.50***	403.09***	400.12***
Central location (dummy)	137.13**	70.67	77.56 ***	92.99**	92.77**
Total assets of the current year (RMB 1 million)		0.13 ***	0.13 ***	0.01***	0.01***
Total market value at the end of the period (RMB 1 million)		19.3	18.37	16.44	16.39
ROE (%)		0.11 ***	0.12 ***	0.01***	0.01***
ROA (%)		17.77	17.66	6.08	6.19
Asset-liability ratio (%)			0.154	-4.98	-6.39
Total market value as of the latest date (RMB 1 million)			0.03	-0.89	-1.12
Return on individual stock in the previous year (%)			-3.44	5.03	9.08
Return of stock market in the previous year (%)			-0.37	0.56	0.94
Adjusted R2	0.004	0.566	0.565	0.604	0.604
				3.94***	4.12***
				2.26	2.36
				0.01***	0.01***
				8.38	8.32
					-0.35
					-1
					-0.86
					-0.67

In sum, Tables 5 and 6 both echo the importance of location in firms' debt financing.

4.4.3 Convertible Bond Yield

The next variable of interest is the convertible bond yield that the firms are we want to look at the impact of central location on the interest rate of the convertible bond that firms issued. Table 7 presents the results. As in Tables 5 and 6, we implement 5 models.

In most cases, we see that the central location status does not exert any significant impact on the interest rate that firms receive when issuing convertible bonds. In other words, location matters when we are looking at the access of capital market and external financing. Conditioning on having the ability to issue convertible bond in the capital market, such location largely does not have any additional impact.

Table 7: Impact of location on yield of convertible bonds
Dependent Variable: yield of convertible bonds

	model 1	model 2	model 3	model 4	model 5
	coeff	coeff	coeff	coeff	coeff
constant	0.69***	0.71***	0.82***	1.05***	1.12***
	21.79	21.78	22.54	11.51	12.15
Central location (dummy)	-0.02	-0.01	-0.04	-0.03	-0.03
	-0.44	-0.02	-0.94	-0.8	-0.82
Total assets of the current year (RMB 1 million)		-0.01	-0.04	0.01	0.01
		-0.24	-1.04	0.23	0.24
Total market value at the end of the period (RMB 1 million)		-0.10***	-0.05	-0.11**	-0.13**
		-2.47	-1.32	-1.99	-2.31
ROE (%)			0.07	0.11	0.22*
			0.56	0.9	1.86
ROA (%)			-0.30***	-0.37***	-0.57***
			-2.61	-3.13	-4.6
Asset-liability ratio (%)				-0.12***	-0.14***
				-2.87	-3.27

Total market value as of the latest date (RMB 1 million)				0.07	0.06
				1.29	1.07
Return on individual stock in the previous year (%)					0.02***
					4.68
Return of stock market in the previous year (%)					-0.01
					-0.95
Adjusted R2	0.001	0.006	0.059	0.068	0.092

4.4.4 Equity Issuance

Now we turn to the results when we use the amount of equity issuance as the independent variable, keeping the control variables the same. Table 8 presents the 5 model regression results.

Similar to what we see with the bond yield, the issuance of equity is largely independent from the location of the firm. This suggests that the effect of firm location is largely concentrated when firms are making the decision to issue convertible bond and how much they are issuing in the convertible bond issuance.

Table 8: Impact of location on the New equity issuance

	Dependent variable: New equity issuance				
	model 1	model 2	model 3	model 4	model 5
	coeff	coeff	coeff	coeff	coeff
constant	995.95***	863.141***	949.450***	-9.150	-62.457
Central location (dummy)	193.33	62.028	-5.811	-28.322	-28.250
Total assets of the Current year (RMB 1 million)		-.001	0.00	-.003	-.003
Total market value At the end of the period		.014***	.015***	.027***	.028***

(RMB 1 million)					
ROE (%)		-50.075	-54.462	-62.229	
ROA (%)		50.106	67.507	89.678	
Asset-liability ratio (%)			20.514*	21.458*	
Return on individual					-2.114
Stock in the previous year (%)					
Return of stock market in the Previous year (%)					-1.590
Adjusted R2	0.001	0.005	0.008	0.028	0.033

4.5 Interaction Terms With Social Mobility And Population Mobility

Next, we are ready to examine the two auxiliary hypotheses that are laid out in Section 3. In particular, we ask the following question: What is the role of social mobility and population mobility in our framework? Does social mobility and population mobility help to alleviate the impact of location on financing efficiency?

In particular, we argue that the financing efficiency of companies in first-tier cities will be more regulated by social mobility, compared with that of companies in non-first-tier cities. The two may be less related when the social mobility is higher. Besides, the financing efficiency of companies in first-tier cities will be more regulated by population mobility, compared with that of companies in non-first-tier cities. The two may be less related when the population mobility is higher.

In the regression framework, we first repeat Model 1 in the previous table where only the central location dummy is included. This is to confirm the baseline model results to easy interpretation.

Next, in model 2, we only include the social mobility. We use the social mobility as a dummy variable. This social mobility dummy equals 1 if the social mobility of the firm location is above the sample mean. It equals 0 if the social mobility of the firm location is below the sample mean.

For the population mobility, we define the dummy variable similarly. If a firm's location is in an area that is characterized by higher than sample average population mobility, then this firm year observation takes the value of 1. Otherwise, it takes a value of 0.

In model 3, we include the interaction term between the central location dummy and the social mobility dummy or population mobility dummy. An interaction term allows the sensitivity to be different between firms in high and low mobility regions. In contrast, without the interaction term, we only allow the social mobility and population mobility to have a fixed impact on firms' financing efficiency.

From a modelling perspective, using the interaction term is more flexible and allows for a more in-depth analysis of the impact. From an empirical point of view, allowing for the interaction between the central location dummy and the interaction dummy could potentially lend more support to the two auxiliary hypotheses that we have laid out earlier.

4.5.1 Social Mobility

We first studied the regulating effect of social mobility. Model 1 is to confirm the results when only the central location dummy is included in the regression to explain the amount of convertible bond issued.

The social mobility itself usually carries a negative impact on the convertible bond issuance size, suggesting that holding everything else constant, such mobility measure is associated with a smaller amount of bond issuance.

However, it probably makes more sense to allow for the interaction between the central location dummy and the social mobility dummy. In other words, it is the combined effect from both the location and the social mobility that would show up in the firms' financing decisions as well as the financing efficiency.

In Table 9, we focus on the total amount of convertible bond issued. Models 3 to 5 yield similar results, suggesting that the set of control variables that we include do not exert material impact on the importance of the central location dummy as well as the social mobility dummy.

Combing the coefficient before the central location dummy, the social mobility dummy, and the interaction term of the two, we see that the net impact is $(368.65 - 307.89 + 178.44) = 239.2$.

What does this coefficient tell us? If a firm is in a central location but not in a high social mobility area, the total amount of convertible bond issued is 368.56 million more than those in a non central location.

However, if the firm is in a central location but as well as in a high social mobility area, such effect is reduced to 239.2 million. In other words, the effect of central location is mitigated if the social mobility is taken into account.

These results support the first auxiliary hypothesis which argues for a moderating role of social mobility in our framework of the relationship between the location of the

firm and its financing efficiency.

Once we take the social mobility into account, the size of the firm, measured as the total assets do not seem to matter in the regression. But if the firm size is measured as the market value of the firm, then it still has a positive impact on the amount issued in the convertible bond market.

The profitability measures, ROE and ROA, are both positively correlated with the issuance size of convertible bond. The leverage ratio remains statistically significant and positive, indicating that higher leverage is associated with more debt financing.

Lastly, the individual stock market return and the market return are largely disconnected from the bond issuance, as shown in Model 5.

We conclude that in areas with high rates of occupancy mobility, there is a great deal of emphasis on working with strangers. One obstacle to working with strangers is the inability to obtain information about strangers. Therefore, in areas where people attach great importance to working with strangers, people want to expand their social networks to get more information. In areas with high residential mobility, the more information the social capital population has access to, the more resources investors are likely to have to solve the problem of information asymmetry.

Table 9: Impact of location on total convertible bonds issued, controlling for social mobility
Dependent Variable: total convertible bonds issued by the end of the period (RMB 1 million)

	model 1	model 2	model 3	model 4	model 5
	coeff	coeff	coeff	Coeff	coeff
Constant	832.73***	1018.45***	1301.41***	592.12***	594.93***
Central location (dummy)	137.13**	126.56*	431.55*	360.90**	368.65***

Social mobility (dummy)	-117.22*	-662.35***	-298.11**	-307.89**	
Interaction between location and social mobility		365.39***	173.35**	178.44**	
Total assets of the current year (RMB 1 million)			-4.89	-6.44	
Total market value at the end of the period (RMB 1 million)			4.78	9.24	
ROE (%)			0.01***	0.01***	
ROA (%)			0.01***	0.01***	
Asset-liability ratio (%)			4.16**	4.37**	
Total market value as of the latest date (RMB 1 million)			0.01***	0.01***	
Return on individual stock in the previous year (%)				-0.39 -1.12	
Return of stock market in the previous year (%)				-0.87 -0.68	
Adjusted R2	0.004	0.005	0.009	0.607	0.608

4.5.2 Population Mobility

Next, we turn to the impact of population mobility. We follow the same framework as in Table 9. Table 10 presents the results.

We see that the results using population mobility seems to deviate from those using social mobility. In particular, with Models 3, 4, and 5, the central location dummy lost its statistical significance in the three models, rendering some concern of potential collinearity.

We check and indeed find that most firms in central locations have higher population mobility compared with those in remote areas, leading the two dummies to be highly correlated (0.97).

Therefore, we do not put too much emphasis on the results in Table 10. We view these results as indicative, suggesting that population mobility could play some role in the relationship between firm location and financing efficiency. However, the current measure of population mobility does not allow us to cleanly test this. We leave this for future research.

Table 10: Impact of location on total convertible bonds, interacting with population mobility
Dependent Variable: total convertible bonds issued by the end of the period (RMB 1 million)

	model 1	model 2	model 3	model 4	model 5
	coeff	coeff	coeff	coeff	coeff
Constant	832.73 ***	557.927	602.987	400.718	392.473
Central location (dummy)	137.13**	118.038*	32.361	27.545	27.659
Population mobility (dummy)		189.173***	90.916	105.305	108.911
Interaction between location and population mobility			66.943	-96.641*	-96.568*
			0.838	-1.9	-1.898
Total assets of the current year (RMB 1 million)				0.013***	0.013***
				16.304	16.245
Total market value at the end of the period (RMB 1 million)				0.006***	0.006***
				5.837	5.942
ROE (%)				-4.734	-6.133
				-0.84	-1.062
ROA (%)				4.445	8.417
				0.486	0.857

Asset-liability ratio (%)				3.924**	4.113**
				2.222	2.32
Total market value as of the latest date (RMB 1 million)				0.005***	0.005***
				8.439	8.366
Return on individual stock in the previous year (%)					-0.34
					-0.952
Return of stock market in the previous year (%)					-0.877
					-0.672
Adjusted R2	0.002	0.01	0.009	0.605	0.604

Note: *: $p < .1$, **: $p < .05$, ***: $p < .01$

4.6 Additional Analysis

The last part of our analysis investigates the impact of social mobility and population mobility if we take the equity issuance as the measure of financing efficiency.

As we have already seen in Section 4.4, equity issuance is largely detached from the location of the firm. We observe little statistical significance of the central location dummy when the dependent variable is the equity issuance amount.

Hence, here we only briefly discuss the results when the dependent variable is the equity issuance and we include the social mobility (Table 11) and population mobility (Table 12) in the multi variate regression framework.

Table 11: Impact of location on new equity issuance, controlling for Population mobility
Dependent Variable: New equity issuance

	model 1	model 2	model 3	model 4	model 5
	Coeff	coeff	coeff	Coeff	coeff
Constant	1104.481***	884.585***	739.427***	--313.195	-351.855
Central location (dummy)	-14.15	-59.256	265.417	90.781	86.170

Population mobility	487.603	802.830*	752.091*	727.120	
Interaction between location and Population mobility			-731.950	-718.089	
Total assets of the current year (RMB 1 million)			-.003	-.003	
Total market value at the end of the period (RMB 1 million)			.027*	.028*	
ROE (%)			-53.083	-59.915	
ROA (%)			65.597	84.899	
Asset-liability ratio (%)			21.506*	22.353*	
Return on individual stock in the previous year (%)				-	
				-1.829	
				-	
Return of stock market in the previous year (%)				-1.190	
				-	
Adjusted R2	0.000	0.003	0.005	0.607	0.608

Table 12: Impact of location on new equity issuance, controlling for social mobility
 Dependent Variable: new equity issuance (RMB 1 million)

	model 1	model 2	model 3	model 4	model 5
	coeff	coeff	coeff	Coeff	coeff
Constant	1104.481***	348.130	-548.661	-1274.266	-1265.590
Central location (dummy)	-14.151	11.073	1721.964	1435.142	1369.564
Social mobility		699.754	1529.055	1221.988	1158.890
Interaction between location and social mobility			-1608.659	-1565.252	-1504.004

CHAPTER 5

CONCLUSION

This study mainly focuses on investigating how company location impact financing efficiency. The maturity and development of network information technology has profoundly impacted the pattern of regional connections, and the telecommunication technology such as the 5G technology has improved the data capacity in information flow, which is bound to change all aspects of social and economic activities. However, it is the popularization and maturity of information technology that triggers information explosion. Today, investment decision makers have to face an unprecedented amount of information. Behind “cheap” information, the cost of information fraud has increased. Meanwhile, geographical distance may also increase the cost for verifying the authenticity of information. As a result, geographical segmentation may cause information asymmetry in the information age. Empirically, this influence may be reflected in the non-public internal information provided by stakeholders, or in that the authenticity of information is verified by virtue of local social resources. Therefore, in this era when informatization is speeding up and the world is getting increasingly smaller, geographical distance may still lead to information asymmetry, and companies located in remote areas may have higher financing efficiency.

On this basis, the question to be discussed in this dissertation is whether the location of a company still influences its financing efficiency in today’s China. According to the theory and experience, we believe that this influence still exists in

China. Specifically, companies located in remote areas may face more serious information asymmetry and greater difficulties in acquiring loans or equity funds than those located in central areas, thus resulting in lower financial efficiency. This may lead to under-investment/over-investment.

Besides, we also consider Social mobility and Population mobility which may influence our conclusion. At first, social mobility refers to the degree of difficulty in change of an individual's or a group's social status. High social mobility may weaken the information asymmetry caused by geographical segmentation. Therefore, we believe that in regions with higher social mobility, there are smaller differences of financing efficiency between companies in central location and those in remote location; and in regions with lower social mobility, there are greater differences of financing efficiency between companies in central location and those in remote location.

Second, population mobility is a variety of short-term, repeated or periodic movements of population between regions. In regions with low population mobility, people attach great importance to intra-group cooperation; in regions with high population mobility, people attach great importance to the cooperation with strangers. We believe that in regions with high population mobility, the more social capital people have to acquire information, the more resources investors may have to solve the problem of information asymmetry. On this basis, we believe that population mobility may also influence the difference of financing efficiency between companies in central and remote locations.

This study mainly explores the influence of company location on financing

efficiency in China. In this study, we collected and analyzed the data of listed companies in Chinese Mainland and found that the listed companies in central location show higher financing efficiency, which is regulated by local population mobility and social mobility. When the population mobility and social mobility rise, the influence of the geographical location of listed companies on financing efficiency will decrease.

This study has several significances. First of all, it explores whether geographical segmentation still causes serious information asymmetry in the post-truth era, thus affecting the financing efficiency of companies, and expands the previous exploration on geographical location, agency cost, information asymmetry and financing efficiency.

Second, this study provides new support for the influence of geographical factors on business efficiency under the culture of eastern collectivism. In social sciences, many researchers have compared the differences between Eastern and Western cultures. One of the differences widely accepted by researchers is that Easterners place a higher value on the relevance and consistency between things, which result in collectivism; Westerners places a higher value on the independence and difference between things, which result in individualism (Hildebrand, Harding and Hadi, 2019; Nisbett and Masuda, 2003). Under the collectivism culture, social wealth is often divided by family, and people emphasize the relationship with family members, that is, in-group relationship. This can help clans maintain control over local resources. Under the individualism culture, however, nuclear families occupy a dominant position in the social structure due to the weakened kinship, which further weakens the resource allocation mode based on blood and geographical relations. Meanwhile, people show

more individualistic tendencies and are more likely to trust strangers (Schulz, Bahrami-Rad, Beauchamp, and Henrich, 2019). Therefore, under the individualism culture, the information asymmetry caused by geographical segmentation mainly reflects the objective barrier of geographical distance to information dissemination, while under the collectivism culture, this effect may also be controlled by local interest groups formed based on blood relations. Therefore, this study introduces the concept of social mobility to confirm the existence of this effect. The barriers formed by blood relations are weaker in regions with higher social mobility. Therefore, verifying the moderating effect of social mobility can confirm the information asymmetry caused by blood relation barriers under the collectivism culture and supplement related research.

Finally, this study has practical reference significance for government governance and enterprise decision-making. We hope to introduce some moderating variables with great practical significance in China, e.g., the moderating effects of social mobility, population mobility and fast traffic penetration, and explore whether and how these variables change the impact of different geographical locations on agency costs. The deepening of reform and opening-up has caused a profound impact on Chinese society; the increasingly loose social policies have provided opportunities for up-ward mobility; the reform of economic system has caused a mass migration of population from rural areas to cities, and from underdeveloped areas to developed areas. As mentioned above, the increase of mobility can really break down some barriers caused by kinship and consanguinity. The analysis on the influence of increasing mobility factors on cash flow efficiency can help policymakers to fully consider the local mobility when making

relevant policies. For example, in areas with consolidated social class and low population mobility, it is required to attach more importance to the improvement of information asymmetry in the process of investment. Besides, enterprises can have a better understanding of the potential risks brought by regional mobility. At present, there are still some regional differences in fast traffic penetration, although great achievements have been made in the construction of high-speed rail and expressway in China. The analysis on the moderating effect of fast traffic penetration can also help relevant departments and managers to develop feasible countermeasures.

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