Influence Relations Among Institutional Investors, Accounting Information Quality and Financing Constraints

Wei Wu [a]

School of Charlton College of Business, University of Massachusetts Dartmouth, North Dartmouth 02747, USA.

[a] 68867900@qq.com

Abstract. This thesis, adopting Cash-Cash Flow Sensitivity model, based on listed companies in Shanghai and Shenzhen A stock market from 2013 to 2018, makes a study on the effect made by institutional investors on accounting information quality and financing constraints. The results show that: (1) If the shareholding of INR is high, the accounting information quality will be better while the shareholding of INS makes few influences on accounting information quality; (2) The improvement of accounting information quality can help ease the problem of financing constraints; (3) INR cannot obviously improve the easing effect of accounting information quality on financing constraints while INS can obviously lower the easing effect of accounting information quality on financing constraints.

Keywords: Institutional investors; accounting information quality; financing constraint.

1. Introduction

In recent years, with the flourish development of financial industry and stock market, institutional investors play a more and more important role in the capital market. Depending on abundant capital, they supervise shareholders by governance body gradually. Because of the developed capital market in western countries, the historical period when institutional investors are active is much longer. Normative researches and empirical researches on institutional investors are complete and mature. As a matter of fact, the shareholding ratio of institutional investors tends to affect the accounting information quality of the company and the accounting information quality and financing constraints will interact on each other. From the perspective of interrelation among three factors, institutional investors, accounting information quality and financing constraints, the thesis will conduct the further empirical study on institutional investors in the financing area.

2. Literature Review

In terms of the classification methods of heterogeneous institutional investors, scholars both at home and abroad make a large number of researches:

Pound, a foreign scholar, has mentioned that due to the complex relationship between stock market and stakeholders, different assumed conditions lead to different conclusions on whether institutional investors make positive influence on business governance or not[1]. In the 1980s, the expansion of the scale of institutional investors resulted in the rise of shareholder activism of institutional investors and a large number of research conclusions showed that these institutional investors made positive influences on business governance. Meeonnell and Servaes (1990) tested the overall influences made by institutional investors on the corporate value by TobinQ. After 1000 sample companies were tested, the coefficient of institutional investors was positive, which proved that it was efficient for institutional investors to governance and supervise companies [2]. A famous scholar Brickley (1988) divided institutional investors into two types according to the existing (potential) commercial business cooperation except for the normal investment relationship between institutional investors and investee companies. One type is INS while the other is INR. The former type is regarded that institutional investors have the abnormal business cooperation with investee companies such as comprehensive securities operating company, insurance company and trust company while the latter one is considered that these investors have the pure investment relation with investee companies such as pension fund. Some scholars like Gao Yuan (2011) from Chinese also used the similar qualitative method to make the classification. Brickley and Lease (1988) subdivided the institutional investors

according to the relative stake relation with investee companies. One kind is INR who is relatively independent including donated fund and social security fund. This kind of investors can use veto power to supervise the management while the other kind is INS who has the stake relation with investee companies including insurance company and trust company [3]. In three theses, Bushee (1998, 2001, 2007) firstly used the Cross-Sectional Clustering Model to confirm the cross-sectional style of institutional investors and divided these investors into three types including long-term-oriented, unstable and multiple investment type. According to the research, the long-term-oriented investors pay attention to relations, preferring to balanced investment and stable portfolio while the multiple investment type investors prefer diverse investment and stable portfolio [4] [5].Chinese scholars Chen Xiaoli, and Song Xiaoning (2007) used double standards of classification to divide institutional investors into three types based on stock concentration ratio and asset turnover ratio. The first type is the balanced type institutional investors, such as insurance companies, social security fund and QFII, with relatively low turnover ratio and high dispersion portfolio. The second type is unstable institutional investors preferring multiple investment portfolio including trust companies and various brokers. The third type is the centralized institutional investors with large stock holdings, preferring investing in one company [7]. Zhang Aili (2012) and Xie Ruoyu (2013) divided investment institutions into two kinds, INR and INS, studying on the effect made by heterogeneous investment institutions on business performance [8].

3.   Research Hypothesis

Because of the difference between Chinese scholars and foreign scholars on the division of institutional investors, the thesis, based on the study by Brickley (1988) [3] and Zhang Aili (2012), thinking of the development situation of institutional investors in Chinese market as well as reliability and accuracy of the dividing standard, divides the institutional investors into two kinds, INR and INS, respectively studying on the interrelation between their shareholding ratio and accounting information quality [8].

Institutional investors and corporate governance are interdependent and mutually affected. On the one side, corporate governance will affect the shareholding decision of institutional investors especially when the financial performance is nearly the same. The well managed companies will be easily preferred by institutional investors. As for corporate governance, institutional investors are forced to make the choice and the shareholding of institutional investors makes the influence on the improvement of corporate governance, which means that shareholdings of institutional investors can be regarded as a kind of system for corporate governance. Additionally, institutional investors can have a right to speak in governance reformation in the companies where they have shareholdings, referring to the active role in corporate governance. On the other side, from the perspective of the development of institutional investors in the western developed capital market, the effect made by institutional investors on corporate governance is more and more obvious.

Brickley (1988) considered that the institutional investors who only have the investment relation with listed companies are more motivated to supervise the management. When institutional investors have the business relation with companies, they tend to be moderate and support the decision of the companies. Based on Brickley's research, Borokhovich (2006) and other scholars found that INR makes more influences on innovation of the company, acquisition decision, monitoring external shareholders and financial performance than INS. Cornett (2007), by studying on the relation between institution shareholdings and industry adjustment ROA, found that only the shareholding of INR shows the positive correlation with the industry adjustment ROA, which proves that INR make positive effect on corporate governance.

In China, institutional investors always refer to a variety of security investment funds, insurance companies, social security fund, QFII (qualified foreign institutional investor), enterprise annuity and trust companies [10]. Insurance company has investment and business relations with listed companies, but double features will give rise to the beneficial conflict among investors. Enterprise annuity and trust companies are not mature in China and comprehensive securities operating companies are

myopic, thus according to Brickley's research (1988), it belongs to INS. INR is independent of listed companies in business. Instead, preferring long-term-oriented investment and value investment, they can supervise the corporate governance, obviously lower the level of asymmetric information, and improve the principal-agent problem to enable the high quality accounting information to lead to the most optimal investment.

Hypothesis one: Shareholding ratio of INR shows positive correlation with accounting information quality.

Hypothesis two: Shareholding ratio of INS shows negative correlation with accounting information quality.

Many scholars have conducted researches on the effect made by accounting information quality on financing and made a conclusion that accounting information with high quality can improve the information disclosure quality and the level of asymmetric information between investors and companies is lowered, which reduces the cost of financing.

Francis adopted Dechow and Divhev model to obtain the degree of earnings management. At the same time, earnings persistence and accounting conservatism will be used to measure the accounting information quality. It is found that those companies with high-quality accounting information have low cost of capital during financing. Zeng Ying and other scholars used disclosure evaluation and earning aggressiveness released by Shenzhen Stock Exchange to measure the quality of disclosure, which led to a conclusion that the degree of information disclosure shows a certain negative relation with the cost of equity financing [11].

Hope discussed the relationship between transparency of financial report and corporate financing, considering that those companies with high transparency of financial report are easier to gain the external financing support. The above research shows that the transparency of finance affects the information asymmetry which further affects companies' financing in the traditional loan market. Zhang Chun and Lv Wei used cash-cash flow sensibility model to analyze the relations among information disclosure, market focus and financing constraints, finding that information disclosure quality has the negative relation with financing constraints.

Chen and Hope also found that improving accounting information quality can lower the degree of asymmetric information among different investors hence the financing cost caused by adverse selection will be lowered. At the same time, the improvement of accounting information quality can reduce the asymmetric information between administrators and shareholders, which can help fund suppliers know the state of operation and funds. Therefore, the financial cost brought by risk premium will decrease. They pointed out that as a bridge for shareholders and administrators, accounting information can help to reduce the agent problems between them and lower the high financial cost caused by agent problems in the market. Due to the asymmetric information, potential creditors and investors can not completely know the operation situation of the company, so the investment is risky which means that financing needs a certain cost. When the degree of asymmetric information is higher, investors and creditors will face more risks and risk compensation. As for the company, it will bring to more costs, leading to financing constraints at last. Therefore, a good way to reduce financing constraints is to lower the degree of asymmetric information between internal side and external side.

In conclusion, improving accounting information quality can reduce asymmetric information to reduce the relative cost caused by risk premium. Moreover, it can reduce the financing cost resulted from principal-agent problems caused by adverse selection and ethical risk. Finally, the efficiency of resource allocation can be improved to ease financing constraints.

Hypothesis three: Accounting information with high quality can ease financing constraints to some extent.

Hypothesis four: When the shareholding of INR is higher, financing constraints will be easier to ease.

Hypothesis five: When the shareholding of INS is higher, accounting information quality makes less impact on easing financing constraints.

4. Research Design

4.1 Sample selection and data sources

The thesis selects data from listed companies in Shanghai and Shenzhen A stock market from 2013 to 2018. In order to make sure the reliability and accuracy of the data, the obtained variables based on the following standards are shown as table 1.

Table 1. Definition of Variables

Variable Symbol	Variable Name	Definition
ΔCash	Cash holding ROC	Net increase of cash and cash equivalents/ opening capital
CF	Cash-cash flow sensitivity	Net cash flow/ opening capital of operation and its coefficient shows the degree of financing constraints
INR	Resistant institutional investors	Total shareholdings of fund, QFII and social security fund/ The general capital of listed companies
INS	Sensitive institutional investors	Total shareholdings of broker, insurance company and trust company/ general capital of listed companies
AQ	Accounting information quality	Using corrected Jones model to calculate the negative number in absolute value of steerable accrued items
Tobinq	Tobinq	Enterprise value/ book value of total assets
Size	Company size	Natural logarithm of total assets
ΔStd	ROC of short-term current liability	Ending current liabilities-opening current liabilities/ opening capital
ΔNwc	ROC of net working capital	Ending net working capital-opening net working capital/ opening capital and net working capital =current assets-current liabilities
Exp	Capital expenditure	Cash/ opening capital paid for setting up fixed assets, intangible assets and other long-term assets by the current company

If AQ is higher, the accounting information quality will be better.

4.2 Model Design

Firstly, the total accrued profit should be calculated.

$$TA_{(i,t)} = NI_{(i,t)} - CFO_{(i,t)t}$$

$$
\begin{aligned}
TA_{(i,t)}/ Asset_{(i,t-1)} &= b\_1 \, 1/ Asset_{(i,t-1)} + b\_2 \, (\triangle REV_{(i,t)} \\
&\quad - \triangle REC_{(i,t)})/ Asset_{(i,t-1)} \\
&\quad + b\_3 \; PPE_{(i,t)}/ Asset_{(i,t-1)} + \mu_{(i,t)}
\end{aligned}
\tag{1}
$$

Regression system of model (1) can be substituted into model (2) and then steerable accrued profits can be obtained.

$$
\begin{aligned}
DA_{(i,t)} &= TA_{(i,t)}/ Asset_{(i,t-1)} \\
&\quad - \left(b_1 \frac{1}{Asset_{i,t-1}} + b_2(\triangle REV_{(i,t)} \right. \\
&\quad \left. - \triangle REC_{(i,t)})/ Asset_{(i,t-1)} + b_3 \frac{PPE_{i,t}}{Asset_{i,t-1}} \right)
\end{aligned}
\tag{2}
$$

Because the steerable accrued profits can be positive and negative, the thesis uses the negative number in the absolute value of the steerable accrued profit to measure the accounting information quality. When the value is higher, the accounting information quality is better and it can be shown as:

$$AQ_{i,t} = -|DA_{i,t}| \tag{3}$$

To test hypothesis 1 and hypothesis 2:

$$AQ = INR/INS + Tobinq + Size + \Delta Std + \Delta Nwc + Exp + \mu \tag{4}$$

To test hypothesis 3:

$$\triangle Cash_{i,t} = \beta_0 + \beta_1 CF_{i,t} + \beta_2 CF_{i,t} * AQ_{i,t} + \beta_3 AQ_{i,t} + \beta_4 Q_{i,t} + \beta_5 Size_{i,t} + \beta_6 \triangle STD_{i,t}$$
$$+ \beta_7 \triangle NWC_{i,t} + \beta_8 EXP_{i,t} + \sum Year + \sum Industry + d_{i,t} \tag{5}$$

To test hypothesis 4 and hypothesis 5:

$$\triangle Cash_{i,t} = \gamma_0 + \gamma_1 CF_{i,t} + \gamma_2 CF_{i,t} * AQ_{i,t} * INR + \gamma_3 CF_{i,t} * INR + \gamma_4 CF_{i,t} * AQ_{i,t}$$
$$+ \gamma_5 AQ_{i,t} + \gamma_6 INR + \gamma_7 Q_{i,t} + \gamma_8 Size_{i,t} + \gamma_9 \triangle STD_{i,t} + \gamma_{10} \triangle NWC_{i,t}$$
$$+ \gamma_{11} EXP_{i,t} + \sum Year + \sum Industry + \rho_{i,t} \tag{6}$$

5. Empirical Analysis

According to the result from table 2, the following conclusions can be drawn.

Table 2. Descriptive Statistics

VarName	Obs	Mean	SD	Min	Median	Max
ΔCash	12850	0.018	0.115	-0.275	0.005	0.561
CF	12850	0.052	0.084	-0.207	0.049	0.327
INR	12850	0.062	0.081	0.000	0.029	0.405
INS	12850	0.031	0.051	0.000	0.010	0.293
AQ	12850	-0.056	0.057	-0.278	-0.038	-0.001
Tobinq	12850	2.198	1.454	0.885	1.734	9.384
Size	12850	22.282	1.278	19.929	22.119	26.175
ΔStd	12850	0.073	0.173	-0.242	0.039	1.049
ΔNwc	12850	0.033	0.167	-0.349	0.011	0.872
Exp	12850	0.055	0.060	0.000	0.036	0.327

(1) The maximum value of △Cash, ROC of cash holdings of listed companies in A stock market, is 0.561 while the minimum value is 0.275, which shows that the ROC of cash holdings between different listed companies has a large fluctuation.

(2) The maximum value of CF is 0.327 while the minimum value is -0.207, showing a large difference between different companies in the field of CF. From the average value 0.052, we can know that the CF of Chinese listed companies is generally low.

(3) The average value of shareholdings of INR is 0.062 while that of INS is 0.031, indicating that there is a big difference of A stock shares held by institutional investors.

(4) The minimum value of AQ is -0.278 while the maximum value is -0.001, showing that there is a large gap of accounting information quality of Chinese listed companies.

(5) The maximum value of Tobinq is 9.384 while the minimum value is 0.885 and the average value is 2.198, indicating that the replacement cost of listed companies in A stock market is relatively high.

(6) The maximum value of Size is 26.175 while the minimum value is 19.929, indicating that the scale gap among Chinese companies is large.

(7) The minimum value of △Std is -0.242 while the maximum value is 1.049, which shows that the debt paying abilities of listed companies in the A stock market are different.

(8) The average value of △Nwc is 0.033 and the maximum value is 0.872 while the minimum value is -0.349, which indicates that there is a large gap of debt paying abilities of Chinese listed companies in the A stock market and the risk level is high.

(9) The maximum and average values of Exp are 0.327 and 0.055, which shows that the EXp of Chinese listed companies in recent 5 years is large.

Table 3. Pearson Correlation Test

	△Cash	CF	INR	INS	AQ	Tobinq	Size	△Std	△Nwc	Exp
△Cash	1									
CF	0.231***	1								
INR	0.140***	0.153***	1							
INS	0.109***	0.019**	0.102***	1						
AQ	0.112***	0.249***	0.045***	0.024***	1					
Tobinq	0.007	0.052***	0.117***	0.102***	0.049***	1				
Size	0.059***	0.040***	0.033***	0.230***	0.047***	0.483***	1			
△Std	0.255***	0.019**	0.160***	0.062***	0.261***	0.067***	0.089***	1		
△Nwc	0.568***	0.077***	0.156***	0.132***	0.161***	0.025***	0.003	0.002	1	
Exp	0.085***	0.233***	0.175***	0.067***	0.004	0.026***	0.018**	0.273***	0.004	1

According to the table 3, INR has positive correlation with △Cash and CF when the percentage is 1, which shows that when the shareholding of institutional investors is higher, the Cash holding ROC and cash flow sensitive are higher. INS has positive correlation with △Cash and CF, which shows that the shareholding of INS makes a few influences on cash holding roc and cash flow sensitive.

Table 4. Regression Analysis

AQ	Hypothesis 1	Hypothesis 2
INR	0.010*	
	(1.77)	
INS		-0.008
		(-1.41)
Tobinq	-0.002**	-0.002**
	(-2.45)	(-2.44)
Size	0.004**	0.004**
	(1.96)	(2.11)
△Std	-0.093***	-0.093***
	(-21.75)	(-21.01)
△Nwc	-0.055***	-0.054***
	(-8.58)	(-8.23)
Exp	0.051***	0.053***
	(4.67)	(5.48)
_cons	-0.131***	-0.134***
	(-3.13)	(-3.27)
R-squared	0.130	0.130
N	12850	12850

According to the table 4, INR has positive correlation with AQ when the percentage is 10, which shows that when the shareholding of institutional investors is higher, the accounting information quality is higher for the reasons that INR can play the role of supervision in corporate governance, improve principal-agent problems and the accounting information quality. INS has negative correlation with AQ but it is not obvious, which shows that the shareholding of INS makes few influences on accounting information quality.

Table 5. Regression Analysis

ΔCash	Hypothesis 3
CF	0.105***
	(12.69)
CF_AQ	-1.274***
	(-6.01)
AQ	0.040
	(2.45) **
Tobinq	0.000
	(0.34)
Size	0.002
	(1.51)
ΔStd	0.171***
	(20.79)
ΔNwc	0.387***
	(37.54)
Exp	-0.046***
	(-4.70)
_cons	-0.069
	(-2.04) **
R-squared	0.433
N	12850

According to table 5, CF has the positive correlation with cash when the percentage is 1, referring that CF is positive, showing that companies have financing constraints in general. CF*AQ has the negative correlation with Cash when the percentage is 1, which indicates that the improvement of accounting information quality can help ease the financing constraints because improving accounting information quality can improve the disclosure quality of information, and lower the information asymmetry among companies. Finally, it can reduce the financing cost.

According to table 6, after adding the shareholding of institutional investors, CF*AQ has negative correlation with Cash when the percentage is 1, which indicates that accounting information quality can help ease financing constraints. The coefficient of CF*AQ *INR is positive but it is not obvious and the coefficient of CF*AQ *INS is positive when the percentage is 5, which indicates that INR can not improve the effect of accounting information quality on easing the financing constraints, but INS can obviously lower the easing function of accounting information quality on financing constraints.

<div align="center">Table 6. Regression Analysis</div>

ΔCash	Hypothesis 4	Hypothesis 5
CF	0.116***	0.084***
	(8.30)	(5.80)
CF_AQ _INR	0.194	
	(0.07)	
CF_INR	-0.116	
	(-0.77)	
INR	-0.005	
	(-0.49)	
CF_AQ _INS		6.443**
		(2.03)
CF_INS		0.718**
		(2.35)
INS		0.017
		(0.88)
CF_AQ	-1.279***	-1.486***
	(-4.89)	(-5.10)
AQ	0.039**	0.040**
	(2.28)	(2.36)
Tobinq	0.000	0.000
	(0.62)	(0.41)
Size	0.002	0.002
	(1.60)	(1.30)
ΔStd	0.172***	0.172***
	(22.01)	(22.66)
ΔNwc	0.388***	0.386***
	(38.00)	(37.63)
Exp	-0.044***	-0.050***
	(-4.32)	(-5.24)
_cons	-0.071**	-0.061*
	(-2.13)	(-1.85)
R-squared	0.433	0.434
N	12850	12850

6. Conclusion

The thesis makes a study on listed companies in Shanghai and Shenzhen A stock market from 2013 to 2018, analyzing the relations among heterogeneous institutional investors, accounting information quality and financing constraints, making further analysis on the impact made by shareholdings of heterogeneous institutional investors on easing financing constraints from the view of accounting information quality. Based on the empirical study, it is found that:

(1) When the shareholding of INR is higher, the accounting information quality is higher and the shareholding of INS makes no influence on accounting information quality. (2) The improvement of accounting information quality can ease financing constraints. (3) INR cannot reduce the financing constraints obviously while INS can obviously ease the fimancing constraints. The research discusses the relations between shareholdings of heterogeneous institutional investors and financing constraints in details, which gives a reference for solving the problem of financing constraints, helping companies develop in a long-term and healthy way to stable the capital market.

References

[1]. Pound J. Proxy contests and the efficiency of shareholder oversight. Journal of Financial Economics, 1988

[2]. Meeonnell, JohnJ. Henri Servaes. Additional Evidence on Equity Ownership and Corporate Value. Journal of Financial Economics, 1990

[3]. Brickley, J.A., Lease, R.C. and Smith, C.W. Ownership Structure and Voting on Antitakeover Amendments. Journal of financial economics, 1988

[4]. Bushee, B., The Infiuence of Institutional Investors on Myopic R&D Investment Behavior. The Accounting Review.1988

[5]. Bushee, B., Do Institutional Investors Prefer Near-Term Earnings over Long-Run Value? Contemporary Accounting Research.2001

[6]. Bushee, B., Identifying and attracting the "Right" Investors: Evidence on the Behavior of Institutional Investors. Journal of Applied Corporate Finance.2004

[7]. Chen Xiaoli, Song Xiaoning. Empirical Analysis on the Effect of Holdings of Institutional Investors on the Transparency of Listed Companies. 2007

[8]. Zhang Aili. Empirical Research on Influence Made by Holdings of Institutional Investors on Company Performance. 2012

[9]. KA Borokhovich, K Brunarski, YS Harman, R Parrino, Variation in the monitoring incentives of outside stockholders, Journal of Law and Economics.2006

[10]. Cornett M. M., Marcus A. J, Saunders A., Tehranian H,. The impact of institutional ownership on corporate operating, Journal of Banking & Finance.2007

[11]. Dechow-Dichev, The Quality of Accruals and Earnings-The Role of Accrual Estimation Errors.2002