Do Internal Control and Market Power Impact the Trade Credit Financing? Evidence from China

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Abstract

Based on the perspective of trust, this paper investigates whether internal control, market power can influence the firm's trade credit financing, and the interaction in this process. The study finds, firms with higher quality of internal control can gain the more trust of suppliers and obtain larger amounts of trade credit financing; firms with low market power have low level of trade credit financing. The high trust which is brought about by the high quality of internal control significantly weaken the negative influence that low market power exerts on the trade credit financing, that is, for the firms with low market power, the high quality of internal control will significantly enhance their ability of trade credit financing. Our research shows that, internal control with high quality can mitigate the difficulty of financing in the small and medium-sized enterprises.

Keywords: trust, quality of internal control, market power, trade credit financing

1. Introduction

The institution is an important source of trust in the modern economic society (Zhang, 2002). As a formal institutional arrangement, the internal control related laws and regulations' economic consequences have been proved by a lot of research literatures. For example, the effectiveness disclosure and assurance of corporate internal control over financial reporting can improve the quality of accounting information (Doyle et al., 2007; Dong and Chen, 2011; Fang and Jin, 2011), mitigate the critical information asymmetry problem between firms and stakeholders, enhance their mutual trust. From the angle of trust source, internal control is an effective way to construct trust mechanism in corporate governance (Lei, 2012) .Consequently, internal control of high quality can favorably influence firm's creditors and investors perceptions of business risk, affect their incentive to undertake the provisions of trade credit and investments. Schneider and Church (2008) note that, for the firms with higher level quality of the internal control, the ratio of long-term loans and the terms of the loan are significantly raised. Some existing theoretical and empirical literatures have provide evidence that high level of internal control can reduce the firm's cost of equity capital and debt (Dhaliwal et al., 2011; Kim et al., 2011; Fang and Shi, 2011).

The basic premise of trade credit provided by suppliers is the trust (Zhu and Wang, 2004), even a lot of literatures chose trade credit as a measure of the degree of trust (Johnson et al., 2002; Raiser et al., 2008). According to the above analysis, high level quality of internal control can enhance the trust between firms and suppliers, enable the firms to obtain trade credit financing. However, there is a paucity of empirical studies on this problem. Using the data on Chinese listed firms, we examine the economic consequences of trade credit financing by firms in the context of their implementation of high quality internal control system.

In the formal financial markets (bank credit) of china, the small and medium-sized enterprises (hereinafter referred to as SMEs) are suffering from financial repression because of their lack of transparency in financial reporting information and their acute shortage of loan guarantee. As a result, they always turn to the informal finance such as the trade credit financing, which has been the ubiquitous and conspicuous phenomenon in china (Lin and Sun, 2005). Burkart and Ellingsen (2004) argue that trade credit is relatively more prevalent in less developed credit markets and countries with worse legal institutions. At present, for the SMEs, trade credit financing has become a very important source of their external financing. Generally speaking, compared with the large firms, the SMEs have a low market power, and their low debt paying ability hardly win the trust of their suppliers, meanwhile, the large firms are always much more easily to win the suppliers' trust because of their high market power and debt paying ability. According to Zhang (2002), the market power is specific-character trust. As internal control and market power both are sources of trust between firms and their suppliers, this paper investigates whether internal control, market power can influence the firm's trade credit financing, and the interaction in this process. We find that firms with higher quality of internal control can gain the more trust of suppliers and obtain more trade credit financing; firms with low market power have a low level of trade credit financing. The high trust which is brought about by the high quality of internal control significantly weaken the negative influence that low market power exerts on the trade credit financing, that is, for the firms with low market power, the high quality of internal control will significantly enhance it's ability of trade credit financing.

This study contributes to the literature in several ways. Firstly, using the theory of trust, for the first time we examine both the relationship between firm's internal control and trade credit financing and the relationship between firm's market power and trade credit financing, in an emerging capital market. Secondly,

our empirical study finds that the high trust which is brought about by the high quality of internal control significantly weaken the negative influence that low market power exerts on the trade credit financing. Obviously, for the SMEs' difficulty of external financing, we introduce a suggestion that the SMEs should establish high quality internal control system and disclose the internal control system information voluntarily to the stakeholders (contains suppliers) on the capital markets, thereby enhancing their mutual trust, earning more trade credit and easing difficulty financing ultimately.

The paper is structured as follows. Section 2 is theoretical analysis and hypothesis development. Section 3 is research design. Section 4 is empirical analysis. The main conclusions are provided in Section 5.

2. Theoretical analysis and hypothesis development
2.1. The quality of internal control and trade credit financing

Trade credit is a credit relationship between upstream and downstream firms in the purchase and sale of goods or services. Trade credit is often subdivided into the categories of accounts payable and advances from customers. Amounts owed to suppliers for products or services purchased on credit are accounts payable, it arises from credit purchases that entail acquiring goods and services from suppliers and making payments at a future date. Accounts payable usually do not require the payment of interest. Advances from customers are amounts received from customers prior to delivering goods or services to customers. Obviously, accounts payable and advances from customers raise large funds for the firms because of the occupation of suppliers or customers' money. There is no gainsaying the fact that the provision of trade credit can help upstream suppliers to expand sales channels and increase sales. However, suppliers may suffer great loss of good investment opportunities because of the incomes delay from sales. The provision of trade credit is then costly for upstream suppliers as it reduces the availability of working capital. Meanwhile, for suppliers, the management cost and the uncollectible accounts expense caused by customers who fail to pay their bills are the very important considerations for credit sales. Consequently, suppliers are very concerned with the downstream firms' willingness and ability to pay (Smith, 1987; Brennan et al., 1988). Burkart and Ellingsen (2004) argue that suppliers have many private information advantages of evaluating the downstream firms' ability to pay down debt. The most important information source is the financial statements, which report the downstream firms' financial condition, business performance etc. The internal control system plays a very important role in this process.

Firstly, the internal control's prime aim is to ensure the quality of the firm's financial report. High quality internal control can ensure the firm's financial reporting information is true and reliable. Available research literatures indicate that the financial reporting is valuable for signing and executing the debt financing contracts between firms and suppliers (Asquith et al., 2005; Bharath et al., 2008). Hui et al. (2012) argue that upstream supplier also has the demand of great conservatism in the downstream firm's financial reporting. In china, suppliers usually use "5C" (character, capacity, capital, collateral, conditions) credit evaluation system to assess trade credit applicants and make the decision of providing trade credit or not. Obviously, the contents of "5C" credit evaluation system are the profitability, debt paying ability and assets which are shown in the financial reporting. Plenty of empirical literatures document that internal control over financial reporting can prevent fundamentally the happening of financial fraud (Zhang and Lin, 2011). The high quality internal control can reduce firm's level of earnings management (Fang and Jin, 2011), improve the quality of accounting information (Dong and Chen, 2011; Sun et al., 2011). Liu (2009) argue that the double-entry accounting, accounting standards and external auditing make the financial accounting information have the function of trust. This paper thinks that internal control also has the characteristics of trust, as it is embedded in the financial accounting information system. Based on the above analysis, we believe that high quality of internal can improve the mutual trust between firms and suppliers, mitigate the critical information asymmetry problem between firms and their suppliers, and eventually improve the ability of trade credit financing.

Secondly, high quality internal control can improve firm's debt paying ability. According to Li et al. (2012), internal control has significant effects on financial distress, and internal control can effectively prevent firms from being involved in financial distress. Some existing theoretical and empirical literatures provide evidence that internal control can rise the firm's investment efficiency (Li et al., 2011; Dhaliwal et al., 2011; Kim et al., 2011; Fang and Shi, 2011) and earnings persistence (Healy and Xiao, 2013). Chen and Zhou (2011) find that internal control quality and business performance are positively associated. The above empirical studies show that high quality internal control does indeed help firms to promote the debt paying ability, and the degree of trust between firms and suppliers can be strengthened through high quality internal control system, which is easily for suppliers to make decisions on the provision of trade credit. Based on the above analysis, we therefore develop the following hypothesis:

H1: Firms with higher quality of internal control can gain the more trust of suppliers and obtain larger amounts of trade credit financing, that is, there is a positive relation between the amounts of trade credit financing and the quality of internal control.

2.2. The market power and trade credit financing

The market power, which is the firm's most important characteristic, embodies its competitiveness in the industry value chain. According to Zhang (2002), the market power is specific-character trust. On the one hand, firm's bargaining power, competitive advantage and market power are positively associated. Downstream firms can rely on the advantages mentioned above to affect upstream suppliers' provision of trade credit. In customers-suppliers relationships, Fabbri and Klapper (2013) document that suppliers with weak bargaining power towards their customers are more likely to extend trade credit, have a larger share of goods sold on credit. Sometimes suppliers are forced by influential customers to allow delayed repayments of goods, as they are maybe threatened with customers' warning of replacing raw material suppliers. On the other hand, market power can be used to characterize the firm's market share in the industry. Obviously, firms with higher market power have larger market share. Generally speaking, those firms have large assets size, excellent profitability and undoubted debt paying ability, which are reflected in the "5C" trade credit evaluation system. Thus, they have the advantage of gaining the trade credit, as they put off suppliers' inner doubts about debt paying ability (Fabbri and Klapper, 2013). In contrast, the firms with lower market power are absolutely inferior to those with higher market in many aspects, such as business negotiation ability, capital, mortgage, and the financial accounting information providing and so on. So the creditors may be very anxious about the debt paying ability of trade credit applicants. As a result, suppliers probably distrust the buyers with low market power and refuse to extend trade credit. The above theoretical analysis generates the following prediction:

H2: Compared with high market power firms, firms with lower market power have lower level of trade credit financing.

2.3. The quality of internal control, market power and trade credit financing

As mentioned above, firm's internal control system and market power are typically institution based trust and specific-character trust. Many scholars note that all kinds of trust mechanism in economic society often impact each other. Other trust mechanism will be more dependent in the absence of a certain trust mechanism (Claessens and Djankov, 2003; Li, 2010). Lin and Sun (2005) point out the lack of financial information transparency and collateral are the main reasons for SMEs' difficulties in external financing. As mentioned above, high quality internal control over financial reporting can prevent fundamentally the happening of financial fraud (Zhang and Lin, 2011), reduce firm's level of earnings management (Fang and Jin, 2011), ensure the firm's financial reporting information is true and reliable, and eventually mitigate the critical information asymmetry problem between firms and stakeholders. Meanwhile, empirical literatures provide evidence that internal control can rise the firm's investment efficiency (Li et al., 2011; Dhaliwal et al., 2011; Kim et al., 2011; Fang and Shi, 2011) and earnings persistence (Healy and Xiao, 2013). All of those demonstrate the internal control can strengthen the mutual trust between firms and suppliers. Therefore, maybe the high quality of internal control can significantly weaken the negative influence that low market power exerts on the trade credit financing. Then we develop the following hypothesis:

H3: The quality of internal control and the market power have substitution effect on firm's trade credit financing, that is, for the firms with low market power, the high quality of internal control will significantly enhance their ability of trade credit financing.

3. Research design

3.1. The regression model and variable definitions

The empirical model (1) used to test the hypotheses H1, H2 and H3 is explained below.

$$\Delta credit_{it+1}(credit_{it+1}) = \beta_0 + \beta_1 ic_{it} + \beta_2 mp_{it+1} + \beta_3 ic_{it} * mp_{it+1}$$
$$+ \beta_4 roa_{it} + \beta_5 growth_{it} + \beta_6 bank_{it}$$
$$+ \beta_7 lev_{it} + \beta_8 size_{it} + \beta_9 cash_{it}$$
$$+ \beta_{10} shr1_{it+1} + \sum \lambda year + \sum \delta industry + \varepsilon \qquad (1)$$

β_1, β_2, and β_3 are the variable to be tested. According to the hypotheses H1, H2 and H3, we expect β_1, β_3 to be significantly positive, and β_2 to be significantly negative. The primary variables are defined as follows. The dependent variables are $\Delta credit_{it+1}$ and $credit_{it+1}$. Following Hu and Zhou (2006), we define $\Delta credit_{it+1}$ as the annual changes of trade credit at the end of year t+1. $credit_{it+1}$ is defined as the annual level of trade credit at the end of year t+1. The independent variables are ic_{it} and mp_{it+1}. Similar to Yang et al. (2009), Zheng et al., (2013) and Li (2013), we define Internal Control Index of China's Listed Companies, which is derived from Sun Yat-

Sen University, as variable ic_{it}. The quality of firms' internal control system can be observed through the index. For the variable ic_{it}, larger values represent higher quality of internal control. The other independent variable, mp_{it+1}, is a dummy variable equal to one if the firm i's MP is less than the industry-wide firms' median in year t, and 0 otherwise. In this paper, if a firm's mp is equal to 1, it means that the firm has a low market power. The expression of MP is developed below:

$$MP_{it} = \frac{X_{it}}{\sum_{i=1}^{n} X_{it}}$$

Where X_{it} represents firm i's annual revenue in year t and $\sum_{i=1}^{n} X_{it}$ represents the whole industry's annual revenue in year t. Following prior literature (Liu et al., 2009; Chen, 2010), we include in equation (1) some general firm characteristics, which are likely to be associated with trade credit. Those control variables' detailed description is provided in table 1.

Table 1: Variable definitions

Variables	definitions
Δ$credit$	Δ(Accounts payable + notes payable + advances from customers)/lagged total assets
$credit$	(Accounts payable + notes payable + advances from customers)/total assets
ic	Internal Control Index of China's Listed Companies
mp	Equal to one if the firm i's MP is less than the industry-wide firms' median in year t, and 0 otherwise. If a firm's mp is equal to 1, it means that the firm has a low market power.
roa	net profit/total assets
$growth$	The annual growth rate of a firm's sales (Δsales/total sales)
$bank$	Short-term debt/total assets
lev	Total liabilities/total assets
size	Ln(total assets)
$cash$	Cash and cash equivalents/total assets
shr1	The proportion of the largest shareholder
$industry$	According to "Guide on Industry Classification for Listed Firms" (CSRC), we have 21 sub-sectors in the whole sample. Thus we define 20 dummy variables.
$year$	There are 2 dummy variables in the regressions.

3.2. Data and sample selection

The data on the quality of internal control is from Internal Control Index of China's Listed Companies, which is developed by Sun Yat-Sen University. The financial data is sourced from the CSMAR database, and the corporate governance data is derived from the CCER database. According to our research, we exclude the observations from the financial services industry and those that have missing internal control index, financial or corporate governance data needed for the regression model (1). All continuous variables are winsorized at top and bottom 1%. The final sample consists of 4961 firm-year observations from 2010 to 2012.

4. Empirical analysis
4.1. Univariate test

Table 2: Univariate test of differences in trade credit financing

variables	statistic	the quality of internal control			the market power		
		high	low	difference	high	low	difference
Δ$credit$	mean	0.0391	0.0325	0.0066**	0.0455	0.0222	0.0233***
	median	0.0217	0.0120	0.0097***	0.0243	0.0084	0.0159***
$credit$	mean	0.2261	0.1942	0.0319***	0.2500	0.1546	0.0954***
	median	0.1758	0.1447	0.0311***	0.1982	0.1179	0.0803***

Note. Differences in means (medians) are assessed using a t-test (Mann-Whitney test). ***, **, * indicate that differences are significant at the 1%, 5%, 10% levels, respectively (two-tailed).

In this section, the quality of internal control is divided into 2 samples according to the ic. If a firm's ic is greater than the median of whole firms, it belongs to the high quality of internal control sample, otherwise it

belongs to the low sample.

The left of table 2 presents results of univariate tests for differences in trade credit financing between the high and low quality of internal control samples. The mean values of the Δ*credit*, *credit* for the high quality of internal control sample are 0.0391 and 0.2261, respectively. The mean values of the Δ*credit*, *credit* for the low quality of internal control sample are significantly smaller at 0.0325 and 0.1942, respectively. We can see the similar differences in the median values of the trade credit financing levels between the high and low quality of internal control. Consistent with hypothesis H1, the results indicate that high quality internal control does indeed mitigate the information asymmetry problem between firms and suppliers, deliver firms' information about financial reporting reliable, business management efficient and risk management effective to suppliers. Those can help firms to strengthen the mutual trust and obtain more trade credit from suppliers.

The right of table 2 presents results of univariate tests for differences in trade credit financing between the high and low market power samples. Similar to the association between the quality of internal control and trade credit, the mean (median) values of the Δ*credit*, *credit* for the low market power sample are significantly smaller than those of the high market power sample. The results suggest that the firms with higher market power do indeed have competitive advantage of gaining trade credit because of their large assets size, excellent profitability and undoubted debt paying ability. In other words, compared with high market power firms, firms with lower market power have a lower level of trade credit financing. Obviously the hypothesis H2 developed above has been proved.

4.2. Regression results

Table 3 reports the OLS multivariate regression results for Equation (1), which is developed to test the H1, H2 and H3. The column (1) and (4) indicate that the coefficients on *ic* as independent variables are significantly positive at the 1% level, as expected, that firms with higher quality of internal control indeed obtain larger amounts of trade credit financing. The results show that suppliers (creditors) pay attention to the firms' quality of internal control system when they decide whether or not to provide trade credit. Consequently, Firms with higher quality of internal control can gain the more trust of suppliers and obtain larger amounts of trade credit financing. In summary, the empirical results in column (1) and (4) strongly support H1 that there is a positive relation between the amounts of trade credit financing and the quality of internal control.

As shown in the column (2) and (5), the significantly negative coefficients on *mp* indicate, as predicted, that firms with lower market power have lower level of trade credit financing because of the absence of business negotiation ability, capital, mortgage, and the financial accounting information providing. Obviously, the empirical results in column (2) and (5) are consistent with H2 mentioned above.

The column (3) and (6) are the results for H3. The coefficients on the interaction variable *ic * mp* are significantly positive at the 5%, 1% levels, respectively. As expected, the quality of internal control and the market power have substitution effect on firm's trade credit financing. The high quality of internal control can significantly weaken the negative influence that low market power exerts on the trade credit financing. In other words, for the firms with low market power, the high quality of internal control will significantly enhance their ability of trade credit financing. Overall, H3 developed above is supported by the empirical results.

Table 3: multivariate regression results

Variables	Δcredit			credit		
	(1)	(2)	(3)	(4)	(5)	(6)
ic	0.038***		0.034***	0.135***		0.124***
	(2.88)		(2.56)	(6.42)		(6.05)
mp		-0.018***	-0.017***		-0.068***	-0.064***
		(-5.74)	(-5.24)		(-13.53)	(-12.85)
ic*mp			0.044**			0.105***
			(2.13)			(3.25)
roa	0.042*	0.054**	0.019	0.133***	0.173***	0.050
	(1.67)	(2.47)	(0.76)	(3.10)	(4.70)	(1.17)
growth	0.076***	0.073***	0.073***	0.083***	0.075***	0.074***
	(14.49)	(14.23)	(14.20)	(11.51)	(10.99)	(10.85)
bank	-0.034**	-0.034**	-0.040***	-0.405***	-0.405***	-0.421***
	(-2.55)	(-2.56)	(-2.96)	(-17.68)	(-17.93)	(-18.93)
lev	0.042***	0.030***	0.038***	0.489***	0.448***	0.471***
	(4.41)	(3.26)	(3.98)	(27.08)	(24.72)	(27.22)
size	-0.003*	-0.005***	-0.006***	-0.011***	-0.018***	-0.025***
	(-1.83)	(-3.19)	(-3.75)	(-4.61)	(-7.49)	(-9.34)
cash	0.013	0.014	0.014	0.106***	0.109***	0.110***
	(1.33)	(1.42)	(1.45)	(6.35)	(6.68)	(6.81)
shr1	0.007***	0.006**	0.006**	0.025***	0.021***	0.020***
	(2.80)	(2.43)	(2.24)	(6.00)	(5.18)	(4.91)
_cons	-0.231***	0.074**	0.107***	-0.809***	0.291***	0.421***
	(-3.27)	(2.34)	(2.92)	(-6.76)	(5.56)	(7.31)
industry	controlled	controlled	controlled	controlled	controlled	controlled
year	controlled	controlled	controlled	controlled	controlled	controlled
R-squared	0.2532	0.2566	0.2592	0.4826	0.4962	0.5033
F Value	15.75***	16.69***	16.07***	104.19***	113.11***	108.68***
Obs	4961	4961	4961	4961	4961	4961

Note. ***, **, * indicate that differences are significant at the 1%, 5%, 10% levels, respectively (two-tailed). The t-statistics are computed by White (1980) standard errors.

5. Conclusions

Appling the theory of trust, this paper investigates whether internal control, market power can influence the firm's trade credit financing, and the interaction in this process. The study finds, firms with higher quality of internal control can gain the more trust of suppliers and obtain larger amounts of trade credit financing; firms with low market power have low level of trade credit financing. The high trust which is brought about by the high quality of internal control significantly weaken the negative influence that low market power exerts on the trade credit financing, that is, for the firms with low market power, the high quality of internal control will significantly enhance their ability of trade credit financing. Our research shows that, internal control with high quality can mitigate the difficulty of financing in SMEs.

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