Capital Structure and Survival of Financially Distressed SMEs in Japan [*]

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Abstract

Using a large sample of financially distressed small firms in Credit Risk Database, we find that a distressed firm is more likely to go bankrupt faster if it uses more trade credits proportionately. Also, there is a sharp decrease in the ratio of trade payables to total debts before a distressed firm goes bankrupt. This suggests that coordination failure among a large number of dispersed trade creditors contributes to short survival of distressed firms. And, this finding is in support of the hypothesis that suppliers have incentives and also are able to acquire credit information of the distressed firm faster than banks and thus withdraw credits quickly because trade credits usually are unsecured unlike bank loans.

Keywords : Small business; Trade credit; Bankruptcy; Survival Analysis

1 Introduction

Since the late 1990s, the number of bankruptcyfiling is increasing in Japan. Recently, Xu (2004a, 2004b) compare bankruptcy resolution under Corporate Reorganization and Civil Rehabilitation, using a sample of bankrupt firms, which were publicly traded before bankruptcy. Also, Xu (2005) analyzes the choices between workout and bankruptcy for large firms. For small and middle sized firms, Shirota (2003), Saito and Tachibanaki (2004) estimate default probabilities of SMEs in Japan.

Usually, financially distressed firms do not go bankrupt immediately. Only a small number of them go bankrupt afterward and the rest distressed firms survive. Previous studies emphasize that banks play important roles in choices of debt restructuring. For example, using a sample of small businesses, Helwege and Packer (2003) find that keiretsu banks neither prop up distressed firms that should fail and nor send distressed firms that should be rescued to bankruptcy. Similarly, Kang and Stlutz (2000) find that the poor performance of firms affiliated with main banks is due to the poor health of their banks. Creditors of small businesses consist of not only banks, but also trade creditors. In the literature of corporate finance, many studies focus on the differences between bank debt and trade credits, as well as the differences between bank debt and public debt. First, trade credits are unsecured and bank loans are secured. Hence, trade creditors make large losses if the distressed firms go bankrupt. To avoid large losses, trade creditors have strong incentives to acquire credit information of the distressed firms (Fama, 1990). Next, trade creditors have information advantages over banks since trade creditors have networks for information collection (Petersen and Rajan, 1997). Also, the number of trade creditors is large, so the coordination among trade creditors in private debt restructuring is difficult (von Thadden, Berglof and Roland, 2003). Therefore, trade creditors refuse to extend credits to distressed firms immediately.

For the above reasons, we expect that distressed firms proportionately using more trade credits are more likely to choose bankruptcy than workouts. Also, it takes less time for them to

go bankrupt because trade creditors have strong incentives to withdraw their unsecured credits from distressed firms as quick as possible. Many studies on insolvency resolutions in Japan focus on the roles of banks. In this paper, we explicitly investigate the effect of trade credit fraction on survival of distressed firms, using Credit Risk Database (CRD). CRD consists of large panel data of small businesses in Japan. The dataset provides financial statements, and the date when a firm goes bankrupt as well as other firm characteristics.

Using a sample of 173,322 corporations that have suffered debt in excess of assets or suffering ordinary loss for more than two consecutive years during 1996 to 2002, we find that a distressed firm is more likely to go bankrupt faster if it uses more trade credits proportionately. Also, there is a sharp decrease in the ratio of trade payables to total debts before a distressed firm goes bankrupt. This suggests that coordination failure among a large number of dispersed trade creditors contributes to short survival of distressed firms. And, this finding is in support of the hypothesis that suppliers have incentives and also are able to acquire credit information of the distressed firm faster than banks and thus withdraw credits quickly because trade credits usually are unsecured unlike bank loans.

This paper is organized as follows. In Section 2, we review the theoretical and empirical literature. We describe our dataset in Section 3 and then we explain the hypothesis and show empirical results in Section 4. We interpret the empirical results in Section 5. Section 6 concludes.

2   Bank Debt vs. Trade Credits

Limited to our knowledge, there are few studies on survival of distressed small firms. Using samples of large firms, a number of studies find that capital structure affects debt restructuring process of distressed firms. For example, Franks and Torous (1994), Gilson, et al. (1990), James (1995, 1996) find that distressed firms are more likely to restructure their debt privately if they owe more debt to banks and have fewer debt contracts. Recently, Xu (2005) finds that firms are more likely to restructure troubled debt through court-led reorganization than workouts if

the proportion of bonds in total debts is high. The findings of the above previous studies are consistent with coordination failure hypothesis for debt restructuring among a large number of dispersed small creditors, as analyzed in von Thadden, Berglof and Roland (2003). Unfortunately, post-workout firms remain high leveraged and more than 30% of them subsequently experience financial distress or go bankrupt (Gilson, 1997). This suggests that distressed firms proportionately using more bank debt tend to survive longer than their peers with high fraction of trade credits.

Bondholders are typical dispersed small creditors for large firms. When it comes to small and mid-sized firms, usually trade creditors are dispersed. Similarly, coordination failure and hold-out problems occur in debt restructuring of a distressed small and mid-sized firm using proportionately more trade credits. Consequentially, the firm tends to choose bankruptcy instead of workouts and it goes bankrupt faster. Many studies, for instance, Diamond(1993), Diamond and Rajan (2000, 2001) assume that financial intermediations produce information about creditworthiness of borrowers. However, as Welch (1997) stated, usually bank loans are secured and trade credits are unsecured. Weiss (1990) and Xu (2004a) find that secured creditors make fewer losses even the borrowers go bankrupt. Therefore secured creditors do not have strong incentives to acquire credit information. In contrast, suppliers have large networks and thus are more able to collect credit information. As a consequence, trade creditors have cost advantages in monitoring over banks (Petersen and Rajan, 1997). Due to superiority of monitoring ability, suppliers can extend credits to small businesses that do not have enough assets as collateral (Tsuruta, 2004). On the other hand, once a firm becomes distressed, trade creditors withdraw credits as soon as they acquire credit information of the distressed firm. Because of cost advantages in information acquisition, dispersed trade creditors are able to cut back on trade credit to the distressed firms quicker than bank lenders. In sum, a distressed firm proportionately using more trade credits is more likely to go bankrupt in a shorter time.

3   Sample Selection

The data in this study are obtained from the Credit Risk Information Database for Small and Medium Enterprises (CRD). Financial institutions and Credit Guarantee Corporations established this database following the guidance of the Small Medium Enterprise Agency (SMEA) in Japan. Now, it managed by the CRD Association[1]. In Japan, Small and Medium Enterprises are defined by the Small and Medium Enterprise Basic Law[2]. The dataset provides financial statements and other firm characteristics. Unlike the NSSBF conducted by the Board of Governor of the Federal Reserve System and the U.S. Small Business Administration (SBA), however, it does not contain information about length of or numbers of relationships with banks.

In this study, we define a financially distressed firm as a CRD firm that suffers debt in excess of assets and ordinary loss for more than two consecutive years during 1996 to 2002. The sample consists of non-financial and non-agricultural corporations. As showed in Table 1, among 176,104 financially distressed firms, 2,782 firms go bankrupt afterward and 66,538 firms drop out of the database. Especially, more than half of firms that had suffered debt in excess of assets and ordinary loss for more than two consecutive years before 1999 are censored.

Post-distress performance of the distressed firms is showed in Table 2. After incidence of distress, the median ROA of the surviving and non-censored firms is improving. Probably, this is because distressed firms with poor performance afterward are more likely to drop from CRD. Therefore, there might be sample selection biases[3]. Regardless of the improvement of performance, the median trade payable ratio tends to decrease as well as the ratio of sales to assets after distress, however. Similarly, looking at the density functions of trade payable ratio before bankruptcy in Figures 1 and 2, we find that the trade payable ratio is more likely to decrease for mid-sized than for small firms. These results suggest that suppliers are more likely to cut back on trade credit to mid-sized distressed firms. It is consistent with regression results

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[1]See http://www.crd.ne.jp/ (in Japanese) for more information about the CRD.
[2]See White Paper on Small and Medium Enterprises in Japan for the definition of Small and Medium Enterprises under the Small and Medium Enterprise Basic Law in Japan.
[3]But we do not solve this problem in this paper

estimating models for the hazard function of the distressed firms in next section.

4 Empirical Results

We estimate the following regression:

$$h[t|\mathbf{X}(t)] = h_0(t)\exp(\mathbf{X}(t)\beta)$$

$$\text{for all } t \leq 0, h > 0$$

$\mathbf{X}=$(capital structure, scale, collateral asset, performance, interest rate, credit guarantee dummy)

$h[t|\mathbf{X}(t)]$ is hazard rate at time t, that is length of months from distressed (suffering debt in excess of assets and ordinary loss for more than two or three consecutive years). Here, $h_0(t)$ is baseline hazard. We use the trade payables to total liability ratio as a proxy of capital structure. As mentioned in the earlier section, trade creditors have strong incentives to acquire information of the distress firms and also have the cost advantage of acquiring information. To avoid losses in bankruptcy, suppliers refuse to extend credit to distressed small firms ahead of banks. We expect that firms with higher trade credit ratio are more likely to go bankrupt than to restructure debt privately. Consequentially, these firms go bankrupt faster.

Now, we turn to other variables to be included in X. First, studies on life duration of new firms find that small firms are less likely to last longer (Caves, 1988; Mata and Portugal, 1994; Audretsch and Mahmood, 1995). Managers of small firms are less talented and less experienced. The size of firm signals the prior success and reputations of entrepreneurs. Also, smaller firms have higher proportion of variable costs and thus it is easier for them to exit. When it comes to distressed firms, however, high proportion of trade credits might force larger firms to go bankrupt faster than smaller firms, because good reputations of large firms enables then to use more trade credits. Thus the hold-out problem among dispersed small creditors in privet debt restructuring is more likely to occur when larger firms become financially distressed. In sum,

different from survival of new firms, the expected effect of firm size on survival of financially distressed firms is ambiguous. Recently, Saito and Tachibanaki (2004) find that larger distressed firms are more likely to go bankrupt than smaller firms. We use the logarithm of assets as firm size.

In general, banks are able to offer additional credit for firms with more collateral assets even if a firm is distressed. Also, if a firm has more cash, it can easily pay off its liabilities immediately to avoid bankruptcy. The variable of the cash to total liability ratio is also a proxy for liquidity. In short, if a distressed firm with more collateral assets or cash, it is able to raise additional outside funds or to pay off its debt on due and thus it is more likely to last longer after distress. We measure collateral assets and cash by the ratio of the sum of land and buildings to total liability, the ratio of cash to total liability respectively.

To capture the extent of financial distress, we also include the asset turnover ratio (sales/assets) and the ratio of ordinary income to assets. A firm deeper in financial distress is more likely to go bankrupt faster. In Japan, however, ordinary profit on income statement of smaller firms might be underestimated than virtual ordinary profit to save corporate tax. For this reason, we included the product of firm size and the ratio of ordinary profit to assets in explanatory variables. We predict that the effect of firm performance on survival duration is stronger for larger firms than for smaller firms.

Generally, small and middle sized firms borrow money from owner entrepreneurs at lower interest rates[4]. Entrepreneurs are less likely to withdraw their credits and send the firms to bankrupt. This is because generally entrepreneurs not only lose their wealth, reputations but also have to file for personal bankruptcy after the firms go bankrupt. However, loans from entrepreneurs are not available. For proxy of loans from entrepreneurs, we use the ratio of interest expenses to the sum of its short-term debt, long-term debt, and discounted notes receivable. More a firm borrows from the entrepreneurs, the lower it is. Also, it can be interpreted that

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[4] "Interest rate" is the ratio of a firm's interest expenses to the sum of its short-term debt, long-term debt, and discounted notes receivable.

lenders charge lower interest rates on viable distressed firms. In any cases, a distressed firm charged at lower interest rate is more likely to survive longer.

In Japan, publicly supported credit guarantee program is important support for SMEs' financing. In the late 1990s, to protect SMEs from risks associated with counter-party defaults, the Special Guarantee Program for the Financial Stabilization of SMEs was introduced from October 1999 to March 2001. Consequently, distressed SMEs with support of credit guarantees are more likely to last longer. Credit guarantee dummy is equal to 1 if a SME's data is provided by a credit guarantee corporation; it equals to 0 otherwise. Special credit guarantee dummy is equal to 1 if a SME's data is provided by a credit guarantee corporation in 1999, 2000 and otherwise it equals to 0.

In table 3, we summarize the expected signs of explanatory variables. Industry dummy variables, regional dummy variables, and year dummy variables are also included in the estimations. We use the sample of firms that have suffered debt excess and ordinary loss for more than two consecutive years in Table 5. For robustness, we use a sample of firms, which suffered debt excess and ordinary losses for three consecutive years in Table 6. In Tables 5 and 6, the coefficients of trade payables debt ratio are positive and statistically significant. These results imply that the probability of bankruptcy for trade credit dependent firms is higher than for bank dependent firms. We also estimate the coefficients of the trade payables to debt ratio at the year of becoming distressed (column (2)). The results are similar.

To investigate whether credit run is happened, in column (3) of Table 5, we also include trade credit growth rate to explanatory variables. The coefficient of trade credit growth rate is not statistically significant. But if we divide trade credit growth rate into two variables, one with a positive sign and the other with a negative sign, the coefficient with negative trade credit growth is negative and statistically significant at 1% level (column (3)). This result suggests that distressed firms are more likely to go bankrupt faster when suppliers cut down trade credit to distressed firms. However, the coefficients with positive trade credit growth are positive and statistically significant at 1% level, which seems not consistent with our hypothesis. However,

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usually suppliers cut back on trade credits to distressed firms. If trade credits of a distressed firm are increasing, this might suggest that accommodation bills are drawn by other distressed firms. More evidence is in need to interpret this puzzle.

Interestingly, larger distressed firms are less likely to last. The coefficients of Log(assets) are positive and statistically significant at 1% level[5]. In contrast, Caves (1988), Mata and Portugal (1994), and Audretsch and Mahmood (1995) show larger new firms are more likely to last than smaller firms. These results are due to the following reasons. First, the number of trade creditors is higher for larger firms than for smaller firms. If the larger firms experience financial distress, it is difficult for them to coordinate with the trade creditors. Second, smaller firms are more likely to make up financial statements of ordinary losses and debt in excess to save corporate and personal tax payments even if they are earning money. This explanation is also supported by the result in column (5) of Tables 5.

Looking at results in column (5) of Tables 5, we find that Ordinary Income/Assets*Log(Assets) has significant effect on distressed firms' survival at 1% level while Ordinary Income/Assets is not significant. This means that profitability' s effect on survival depends on firm size. The larger a firm is, the more correctly Ordinary Income/Assets reflects virtual profitability. In other words, smaller firms tend to make up low Ordinary Income/Assets and it deviates from virtual profitability. If Ordinary Income/Assets *Log(Assets) is excluded from explanatory variables, generally less profitable firms are less likely to last. See results in columns (1), (2), (3), (3') and (4) of Table 5.

The coefficients of interest rate are positive and statistically significant at 1% level. This can be interpreted that a distressed is more likely to last if it is able to borrow at low interest rates. In general, the interest rate tends to be lower if the entrepreneur lends more to the firms. In such cases, the entrepreneur has no incentives to withdraw credits and to send his/her own corporation to bankrupt. As a consequence, a distressed firm is more likely to survive longer if it borrowers more from its owner at low interest rates. Even a firm is suffering distress; it is

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[5]Saito and Tachibanaki (2004) obtain similar results

able to borrow secured loans from banks if collateral assets are rich. As shown in Table 5, the coefficients of collateral assets are negative and statistically significant for all specifications. The credit guarantee dummy and Special Guarantee dummy both have negative effects on hazard rate. This is in support of the viewpoint that distressed SMEs with support of public credit guarantee are more likely to last longer. And the Special Guarantee System for the Financial Stabilization of Small Businesses strengthens this effect. The result is shown in column (4) of Tables 5.

For robustness, we redefine a financially distressed firm as a CRD firm that suffers debt in excess of assets and ordinary loss for more than three consecutive years during 1996 to 2002. We obtain similar results in Table 6.

5   Conclusion and Remarks

In this paper, we analyze the influence of capital structure on survival of distressed small firms in Japan. Distressed small firms using more trade credits are less likely to last longer. Also, there is a sharp decrease in the ratio of trade payables to total debts before a distressed firm goes bankrupt. This suggests that coordination failure among a large number of dispersed trade creditors contributes to short survival of distressed firms. Also, this finding is in support of the hypothesis that suppliers are eager and also able to acquire credit information of the distressed firm faster than banks and thus withdraw credits quickly because trade credits usually are unsecured unlike bank loans.

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Table 1: The Number of Bankrupt Firms and Surviving Firms

| | the year when firms suffer distressed | | | | | | | |
	1996	1997	1998	1999	2000	2001	2002	Total
Bankrupt Firms	357	363	351	506	458	500	247	2,782
go bankrupt in less than 1 year	30	24	21	77	135	263	247	797
go bankrupt in 1-2 years	41	36	58	148	193	237		713
go bankrupt in 2-3 years	62	63	92	155	130			502
go bankrupt in 3-4 years	47	92	103	126				368
go bankrupt in 4-5 years	58	76	77					211
go bankrupt in 5-6 years	73	72						145
go bankrupt in over 6 years	46							46
Surviving firms	11,134	16,185	19,663	26,719	31,640	36,150	31,831	173,322
Not-censored samples	4,047	6,394	7,223	12,465	18,699	26,125	31,831	106,784
Censored samples	7,087	9,791	12,440	14,254	12,941	10,025		66,538

Table 2: Performance after firms suffered distressed

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years after
  distress|    samples     med(ROA)   med(TP/TL)  med(TA/TL)   med(TS/A)
----------+---------------------------------------------------------------
      0 |    176,116    -.0880041     .0611278    .1913675    1.703074
      1 |    107,936    -.0201037      .063544    .1970308    1.679675
      2 |     70,399    -.0052132      .060774    .1997036    1.625311
      3 |     44,849     .0004177     .0590376    .1933921    1.571306
      4 |     26,536     .0053622     .0549417    .1895058     1.51975
      5 |     15,154     .0066069     .0522343    .1912728    1.426229
      6 |      5,383     .0057554     .0451124    .2135289    1.329608
        |
  Total |    446,373    -.0400394     .0604091    .1944187    1.646643
--------------------------------------------------------------------------
Note: ROA=(operating income+interest receivables+dividend)/assets,
TP_TL=trade payables/total liability, TA_TL=tangible assets/total liability
TS_A=total sales/assets
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Figure 1: Kernel Density Function: Trade Credit Ratio before Bankruptcy
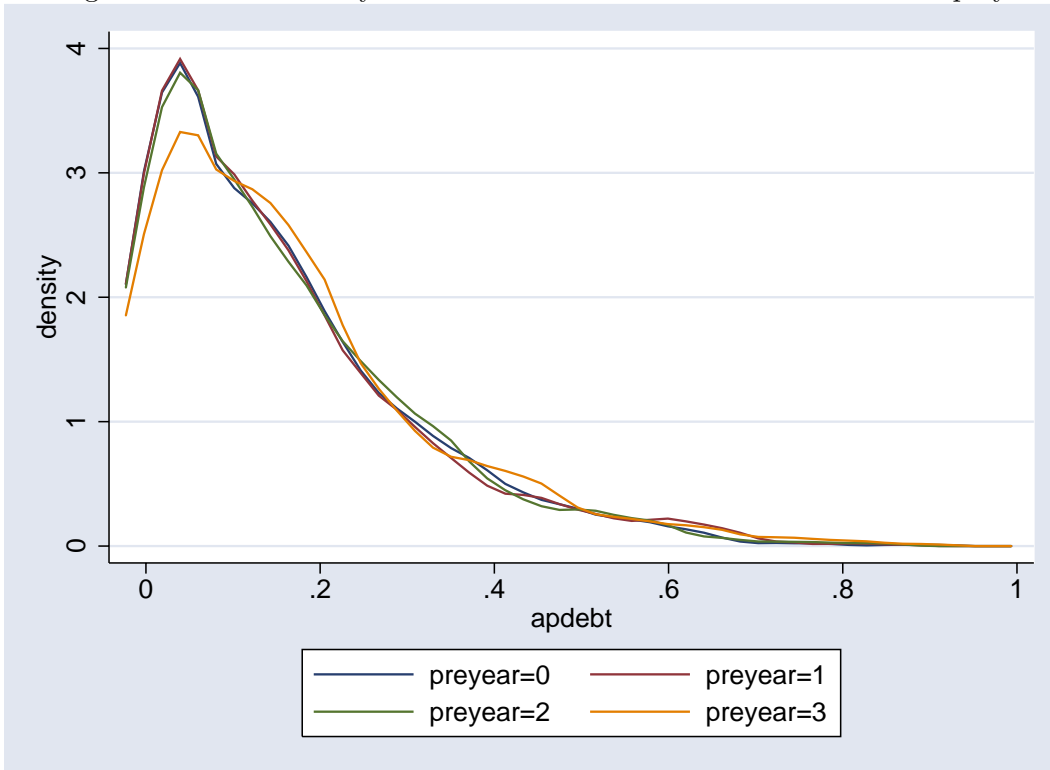

Figure 2: Kernel Density Function: Trade Credit Ratio before Bankruptcy
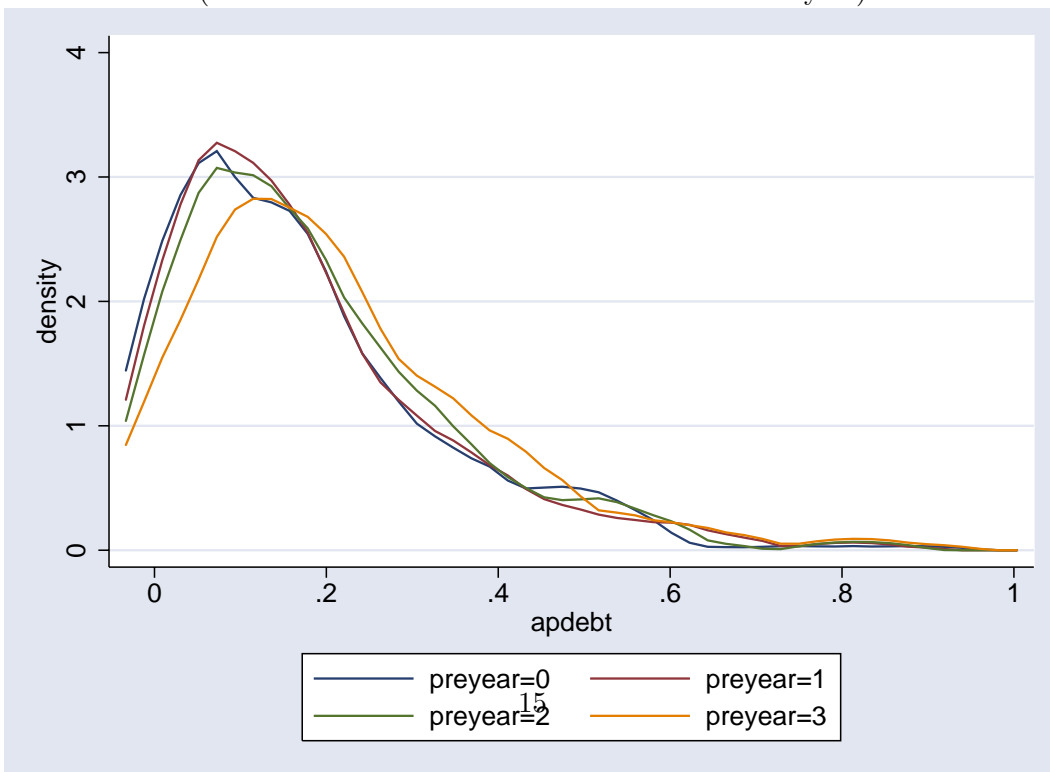(for Firms whose sales is more than 500 billion yen.)

Table 3: Expected Signs

Explanatory Variables	Expected Signs
Log(Assets)	+ or -
Interest Rate	+
Trade Payables/Total liability	+
(Land Buildings)/Total liability	-
Cash/Total liability	-
Ordinary Income/Assets	-
Sales/Assets	-
Credit Guarantee	-
Special Credit Guarantee	-

Table 4: Summary Statistics

Variable	Obs	Mean	Median	Std.Dev.	Min	Max
Failure	270,269	0.007	0.000	0.085	0.000	1.000
Log(Assets)	270,269	10.895	10.761	1.460	0.000	20.602
Interest Rate	229,958	2.735	2.436	34.983	0.000	15828.950
Trade Payables/Total liability	250,085	0.112	0.060	0.141	0.000	1.000
Trade Payables Growth	234,122	0.013	0.000	2.155	-13.274	863.509
(Land+Buildings)//Total liability	249,614	0.319	0.196	8.726	0.000	4259.500
Cash/Debts	270,265	0.084	0.048	0.148	0.000	42.387
Ordinary Income/Assets	250,083	-0.077	-0.007	6.920	-3403.500	22.895
Sales/Assets	270,269	2.163	1.611	11.146	0.000	4792.718
Credit Guarantee	270,269	0.490	0.000	0.500	0.000	1.000
Special Credit Guarantee	270,269	0.143	0.000	0.350	0.000	1.000

Table 5: Results (1)

	(1)	(2)	(3)	(4)	(5)
	Kaplan-Meiler survival estimate				
Sample:Excess of debts and ordinary loss for more than two consecutive terms					
Log(Assets)	0.373***	0.387***	0.378***	0.373***	0.364***
	(0.018)	(0.018)	(0.019)	(0.018)	(0.019)
Interest Rate	0.122***	0.133***	0.120***	0.122***	0.120***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Trade Payables/Total liability	1.836***		1.680***	1.837***	1.832***
	(0.160)		(0.179)	(0.160)	(0.160)
Trade Payables/Total liability	1.389***				
(at the year of becoming distressed)		(0.159)			
Trade Payables Growth Rate			0.540***		
if Growth Rate is Positive			(0.197)		
Trade Payables Growth Rate			-1.451***		
if Growth Rate is Negative			(0.320)		
(Land+Buildings)/Total liability	-1.028***	-1.023***	-1.008***	-1.025***	-0.997***
	(0.109)	(0.110)	(0.110)	(0.109)	(0.109)
Cash/Total liability	-6.979***	-6.772***	-6.951***	-6.977***	-6.983***
	(0.402)	(0.401)	(0.415)	(0.401)	(0.400)
Ordinary Income/Assets	-0.738***	-0.683***	-0.730***	-0.737***	1.461**
	(0.098)	(0.098)	(0.100)	(0.098)	(0.589)
Ordinary Income/Assets*Log(Assets)					-0.217***
					(0.054)
Sales/Assets	-0.168***	-0.141***	-0.184***	-0.168***	-0.162***
	(0.024)	(0.023)	(0.025)	(0.024)	(0.024)
Credit Guarantee	-0.218***	-0.188***	-0.250***	-0.149**	-0.220***
	(0.055)	(0.056)	(0.058)	(0.061)	(0.055)
Special Credit Guarantee				-0.349**	
				(0.136)	
Industry Dummies	yes	yes	yes	yes	yes
Year Dummies	yes	yes	yes	yes	yes
Regional Dummies	yes	yes	yes	yes	yes
Sample	228,621	228,621	222,258	228,621	228,621

Note: Standard errors are in parentheses. "Interest rate" is the ratio of a firm's interest expenses to the sum of its short-term debt, long-term debt, and discounted notes receivable. When variables include outliers, they are truncated at their 0.5th percentiles or 99.5th percentiles of the sample. This result does not change if we truncate at their 1st percentiles or 99th percentiles of the sample.

***Significant at 1% level.
**Significant at 5% level.
*Significant at 10% level.

Table 6: Results (2)

	(1)	(2)	(3)	(3')	(4)	(5)
	Kaplan-Meiler survival estimate					
Sample:Excess of debts and ordinary loss for more than three consecutive terms						
Log(Assets)	0.358***	0.371***	0.363***	0.394***	0.359***	0.353***
	(0.027)	(0.027)	(0.028)	(0.027)	(0.027)	(0.027)
Interest Rate	0.114***	0.125***	0.113***	0.139***	0.114***	0.113***
	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)	(0.012)
Trade Payables/Total liability	1.982***		1.915***		1.982***	1.975***
	(0.253)		(0.281)		(0.253)	(0.252)
Trade Payables/Total liability		1.418***				
(at the year of becoming distressed)		(0.259)				
Trade Payables Growth Rate			0.423	1.272***		
if Growth Rate is Positive			(0.340)	(0.284)		
Trade Payables Growth Rate			-0.872	-1.295**		
if Growth Rate is Negative			(0.544)	(0.511)		
(Land+Buildings)/Total liability	-0.607***	-0.577***	-0.594***	-0.558***	-0.607***	-0.585***
	(0.148)	(0.149)	(0.148)	(0.146)	(0.148)	(0.148)
Cash/Total liability	-8.148***	-7.918***	-8.120***	-7.603***	-8.148***	-8.173***
	(0.743)	(0.746)	(0.765)	(0.762)	(0.743)	(0.742)
Ordinary Income/Assets	-0.696***	-0.643***	-0.708***	-0.609***	-0.696***	0.864
	(0.151)	(0.152)	(0.154)	(0.153)	(0.151)	(0.881)
Ordinary Income/Assets*Log(Assets)						-0.157*
						(0.084)
Sales/Assets	-0.142***	-0.111***	-0.155***	-0.097***	-0.142***	-0.138***
	(0.036)	(0.034)	(0.037)	(0.034)	(0.036)	(0.036)
Credit Guarantee	-0.262***	-0.226**	-0.296***	-0.287***	-0.263***	-0.264***
	(0.091)	(0.091)	(0.096)	(0.096)	(0.100)	(0.091)
Special Credit Guarantee					0.004	
					(0.218)	
Industry Dummies	yes	yes	yes	yes	yes	yes
Year Dummies	yes	yes	yes	yes	yes	yes
Regional Dummies	yes	yes	yes	yes	yes	yes
Sample	79,414	79,414	77,127	77,127	79,414	79,415

Note: Standard errors are in parentheses. "Interest rate" is the ratio of a firm's interest expenses to the sum of its short-term debt, long-term debt, and discounted notes receivable. When variables include outliers, they are truncated at their 0.5th percentiles or 99.5th percentiles of the sample. This result does not change if we truncate at their 1st percentiles or 99th percentiles of the sample.

***Significant at 1% level.
**Significant at 5% level.
*Significant at 10% level.