

The Impact of Internal Control Defects on Enterprises' Commercial Credit Financing

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Abstract: Internal control indicates the quality of a firm's financial information, and thus influences the trust relationship between the firm and its trading partner. This paper based on the previous analysis assumes that internal control quality would affect trade credit financing got from trading partner. Based on the sample of listed companies in the scope of implementation of internal control system from 2014 to 2017, this paper uses multiple regression model. This study reveals that there is a significant negative correlation between material weaknesses of internal control and the trade credit financing, which supports our hypothesis that a firm gets less trade credit financing when material weaknesses are found in its internal control system.

Keywords: Internal control, Material weaknesses of internal control, Trade credit financing.

1. Introduction

Internal control is an important safeguard for the quality and reliability of a company's accounting information will affect the cooperation between the company and its stakeholders (investors, suppliers, clients, and creditors, etc.). High-quality internal control not only enhances the reliability of accounting information but also improves the trust level. First, good internal control can reduce the information asymmetry between the enterprise and its trading partners, whereby the trading partners can truly evaluate the profitability and debt repayment ability of the enterprise to reduce the reverse selection caused by information asymmetry. Therefore, the enterprise's cost of commercial credit financing can be reduced. Second, good internal control can reduce agency problems and better supervise the management, thus avoiding the damage to trading partners caused by management fraud. At the same time, as a signal to solve agency problems, internal control will provide incentives to the management to improve internal control and company efficiency.

In this paper, with the listed companies which are subject to standard internal control system at Shanghai and Shenzhen Stock Exchange during 2014-2017 as the samples, a study is carried out on a company's major internal control defects and their impact on its commercial credit financing. Compared with previous study, the significance of the study is as follows: First, the selection of samples is time-sensitive. All previous studies were based on the data before 2012. At that time, the criteria for identification of internal control defects were not well-refined; the internal control system of listed companies was not complete; and investors also lacked understanding of internal control. Now, more attention is paid to internal control from the perspectives of both enterprises and investors. Therefore, the adoption of updated data for the research is of practical significance.

2. Literature Review

2.1. Internal control

Considerable empirical research on internal control was sparked in 2002 when Sarbanes-Oxley Act (SOX) was promulgated in the United States. According to the summary

of Li Xiang (2009)[1], there are three major subjects of empirical research on internal control in the United States: first, why companies are willing to disclose internal control reports of their own accord; second, why internal control defects are caused and what are the influencing factors; third, what are the economic consequences of internal control defects.

Healy et al.(2001)[2] Proposed that disclosure of internal controls can help reduce information asymmetry between the management and investors, as well as agency problems. After analyzing the listed companies in the United States during 2003 to 2004, Bronson (2006) [3] proposed that the voluntary disclosure of internal control reports by the management is related to the company's size, sales growth, composition of audit committee, and net profit, etc. As to the causes of internal control defects, there are more empirical studies. For example, based on the study of listed companies in the United States, Eng et al. (2003) [4] proved that the larger the proportion of shares held by a company's executives and their families, the more prone the company is to internal control defects. Franklin (2007) [5] pointed out that companies with internal control defects would have higher debt ratios and poorer profitability in the statistical sense.

2.2. Internal control defects

Internal control defects refer to inadequate internal control system that may cause misstatements in a company's financial statements. In both China and the United States, the internal control defects are divided into major defects, important defects, and general defects by their severity. However, upon comparison of the criteria between China and the United States, Chen Guanting et al. (2011) [6] pointed out that there is lack of specific provisions on the severity of defects and on internal control of small and medium-sized enterprises in the *Guidance on the Internal Control Audit*. Li Yingqi et al. (2013) [7] Pointed out that very small proportion of Chinese listed companies disclosed control defects and especially major defects in 2011, which was obviously inconsistent with the actual situation of company's internal control in China. After the *Basic Norms of Enterprises' Internal Control* and *Supporting Guidelines* were extended to all listed companies in 2012, Zhang Zhen and Li Xiaoqing (2015) [8] found that the disclosure was improved as a whole, but companies still

avored form over substance by concealing considerable internal control defects.

Many scholars directly measure a company's internal control level using its internal control audit report and internal control assessment report. If major defects are found in the two reports, it is determined that there are internal control defects in the year. In addition, many scholars have proposed other indicators and models for evaluating the quality of internal control. Yu Zengbiao (2007) [9] and Yang Youhong (2008) [10], etc. proposed an internal control assessment system applicable to China through case studies. Chen Guanting et al. (2013) [11] proposed the use of fuzzy comprehensive evaluation and hierarchical analysis to determine the weight of internal control evaluation indicators, and established an evaluation model accordingly.

3. Research Design

3.1. Research hypothesis

According to alternative financing theory and buyer's market theory, internal control defects mean greater information asymmetry, and aggravate reverse selection and agency problems, resulting in declined trust of trading partners in a company. This will reduce the satisfaction of purchase on credit in conclusion of contracts. Therefore, in order to study the impact of internal control defects on commercial credit financing, hypothesis 1 is hereby proposed:

H1: When rest conditions are controlled, enterprises with major internal control defects will receive lower commercial credit financing.

According to the alternative financing theory, companies that cannot obtain sufficient bank loans need more commercial credit financing, and internal control is more important as a safeguard for financial quality. Ba Shusong et al. (2005) [12] Found that Chinese government and in particular, local governments will intervene in the lending of state-owned banks through informal means to provide state-owned enterprises with more and looser credit rationing from banks. Even if there are major internal control defects, state-owned enterprises can still obtain relatively sufficient bank credit through political means. Therefore, compared with state-owned listed companies, private listed companies receive fewer loans from banks and are more dependent on commercial credit financing. If a private listed company has major internal control defects, their impact on its commercial credit financing will be greater. Hence, hypothesis 2 is hereby proposed:

H2: Compared with state-owned listed companies, the impact of major internal control defects on commercial financing is greater for private companies.

3.2. Variable design

3.2.1. Interpreted variable—Commercial credit financing

There are generally two methods to measure commercial credit: first one is the proportion of (Accounts payable + bills payable + deposit received)/the total assets at the end of the year adopted by Lu Zhengfei et al. (2011) [13] and Zheng Jun et al. (2013) [14], etc. This measurement method measures the credit obtained by an enterprise from upstream (accounts payable, bills payable) and the downstream (deposit received). The second one is more commonly used in foreign countries, namely, the proportion of accounts payable to the sales revenue in the current year. For example, Tsao et al. (2017) [15] and Cowton et al. (2017) [16] adopt this method to

measure commercial credit.

According to the definition of commercial credit, in transactions between two commercial entities, where one party allows the other party not to pay immediately when purchasing products or services, it is more reasonable to only consider receiving the credit from the upstream. In addition, given that the impact of the internal control defects on commercial credit financing generally occurs within one year, and that the bills payable contain bank acceptance bills whose transaction counterparty is a bank without exact consistency with the definition of commercial credit, the second measurement method is adopted, namely, the proportion of accounts payable in sales revenue of the year is used to measure the commercial credit. Furthermore, the proportion of payable accounts, bills payable and accounts receivable in total assets at the end of the year is also adopted in the stability test.

Besides, in addition to studying the impact of major internal control defects on the absolute value of commercial credit financing, the (accounts payable of the year- accounts payable of last year)/last year's total assets is used to measure the increased commercial credit financing in the robustness test to study the impact of major internal control defects on the added value of commercial credit financing.

3.2.2. Explanatory variables—Major internal control defects

In this paper, major internal control defects are defined as any of the following four circumstances: first, the China Securities Regulatory Commission or an exchange has imposed punishment for financial omissions and misstatements of listed companies; second, an enterprise has restated important financial data such as income and profits in the previous year in the current year, regardless of whether there is increase or decrease; third, in the internal control audit report of the annual report, the auditor issues negative opinions or is unable to express the opinions; fourth, in the internal control self-assessment report, the management believes that there are major internal control defects.

In case of any of the foregoing four circumstances, it is determined that there are major internal control defects of the enterprise in the current year. In addition, given that the importance of foregoing four circumstances varies to trading partners, regression analysis is performed with the four circumstances as explanatory variables, so as to study their different impact on commercial credit financing.

3.3. Sample screening

3.3.1. Sample selection

As all companies on the main board of Shanghai and Shenzhen Exchanges have been subject to mandatory disclosure of internal control since 2014, all listed companies on the main board of Shanghai and Shenzhen Exchanges during 2014-2017 are adopted as the samples. The major internal control defects of the year can be recognized based on all the four aspects: internal control audit report, financial restatement, punishment due to violations, and internal control self-assessment report.

In CSMAR, the internal control research database of listed companies provides the statistics about their self-assessment report and internal control audit report. There are a total of 61 major internal control defects believed by the management in internal control self-assessment reports, and 69 major internal control defects believed by the auditors.

As to whether a company has carried out financial

restatements, the data is from the announcement of correction of enterprises' financial reports disclosed by China Securities Regulatory Commission. There are a total of 164 restatements, including 68 restatements that have increased the profit and 96 restatements that have decreased the profit.

As to the punishment due to violations, the data is from the research database of listed companies' violations and treatment in CSMAR. There are a total of 299 major internal control defects due to the punishment related to operation.

3.3.2. Sample screening

From 2014, all listed companies on the main boards of

Shanghai and Shenzhen Exchanges are subject to mandatory disclosure of internal control audit reports and self-assessment reports. Therefore, the overall samples are a total of 5973 companies on the main board of Shanghai and Shenzhen Exchanges during 2014-2017. After deletion of 214 listed companies in financial industry and 41 companies with missing accounts payable and other key financial data, a total of 5718 companies are left. During 2014-2017, the size of samples is 1407, 1483, 1574, and 1254, respectively.

3.3.3. Sample information statistics

Table 1. The number of samples with major internal control defects of each caliber in each year within the scope of disclosure

Statistical caliber	2014	2015	2016	2017	Total
Internal control assessment report	18	10	16	17	61
Internal control audit report	19	15	21	14	69
Financial restatement	30	68	40	26	164
Punishment due to violations	87	82	32	98	299
Total	154	175	109	155	593
	10.94%	11.80%	6.92%	12.36%	10.37%

Proportion in the total samples of the year

There are most companies punished by China Securities Regulatory Commission and Stock Exchanges due to violation, with a total of 299 companies. The second largest samples are financial restatements, with a total of 164 companies; the sample size of major defects found in internal control assessment reports and the internal control audit reports are 61 and 69, respectively. Overall, the experimental group accounted for 10.37% of the total samples, and remained relatively stable throughout the year. Furthermore, since there were no quantitative mutations due to adjustment of rules, and the samples were more reliable.

3.4. Model design

In order to verify the hypothesis herein, the following model is set:

$$TC = \beta_0 + \beta_1 Icmw + \beta_2 LnGDP + \beta_3 Size + \beta_4 Lev + \beta_5 Roa + \beta_6 Cfo + \beta_7 Bank + \beta_8 i.Ind + \beta_9 i.Year + \varepsilon$$

The interpreted variable TC, as mentioned above, is expressed as the proportion of accounts payable in the sales revenue of the year. Given the time lag of the publication of financial statements and the reflection of trading partners, and in order to reduce endogenous problems, commercial credit TC is lagged by one year in this paper.

The explanatory variable Icmw means the major internal control defect of enterprise in the year. If there is a major

internal control defect, the value of Icmw is 1; otherwise, it is 0. In addition, in order to study the impact of different categories of internal control defects on commercial credit, the explanatory variables are replaced with four independent variables of ic_evaluation (internal control self-assessment report), ic_audit (internal control audit), events (financial restatement), and finviolation (fines due to violations) for regression.

By reference to the research on internal control defects and commercial credit financing by domestic and foreign scholars such as Zheng Jun et al. (2013) [17], Rao Pingui (2013) [18], Love and Zaidi (2010) [19], etc., the regional economic development level LnGDP, company size, debt level Lev, profitability level Roa, operating activity cash flow Cfo and bank loan level Bank are added to the model as control variables whose definition and measurement methods are detailed in Table 2. In previous research, some scholars have added the nature of industry and enterprise property rights as virtual variables. Given that the adopted regression model is a fixed effect model, the industry and year are controlled as virtual variables, and the control variables of I.Ind and i.year are set. The industry is classified as per the industry standards set by China Securities Regulatory Commission.

In order to eliminate the influence of extreme values on empirical results, continuous variables such as TC, LnGDP, Size, Lev, Roa, Cfo and Bank are winsorized at 1% in the regression model.

Table 2. Definition and description of variables

	Variables	Abbreviation	Definition
Explained variables	Commerical credit	TC	The proportion of accounts payable in the sales revenue in the year following occurrence of major internal control defects
Explanatory variables	Whether there is punishment due to financial violations	finviolatio n	Whether the enterprise is punished due to financial violations. If it's yes, the value is 1; otherwise, it is 0.
	Whether there is financial restatement	events	If there is financial restatement, the value is 1; otherwise, it is 0.
	Internal control audit result	ic_audit	If there is a major control defect, the value is 1; otherwise, it is 0.
	Internal control self-assessment result	ic_evaluat ion	If there is a major control defect, the value is 1; otherwise, it is 0.
	Whether there is a major control defect	Icmw	If the value of any of the above four variables is 1, it is considered that there is a major control defect in the year and the value is 1; otherwise, it is 0.
Control variables	Local economic development level	LnGDP	The Napierian logarithm of GDP per capital in the area where the company is located.
	Company size	Size	The Napierian logarithm of the closing total assets
	Debt level	Lev	The ratio of closing total liabilities to total assets
	Profit level	Roa	The rate of return of total assets calculated with net profit
	Operating activity cash flow	Cfo	The proportion of operating cash flow to the closing total assets
	Loan level	Bank	(long-term loan + short-term loan)/virtual variable of total assets of the year
	Industry	i.Ind	Virtual variable
	Year	i.Year	

4. Empirical Analysis

4.1. Descriptive statistics

Of the 5973 samples, 593 sampling had major internal control defects, accounting for 10.37%. The descriptive statistics of all samples and their classification by whether there is a major internal control defect are shown in Tables 3 and 4 below. All continuous variables are Winsorized at 1%. Viewed from the full sample, the mean value of commercial credit financing is 0.1931, and the median value is 0.1543; the mean value of local economic development level is 15.3425, and the median value is 13.2053; after logarithmic processing of the size of the enterprise, the mean value is 13.3388, and the median value is 13.2053, which is relatively close with relatively small standard deviation of only 1.4319; the mean

value of financial leverage is 49.6975, and the median value is 49.7900; the average return on total assets is 3.5816, with a median value of 3.0; the average proportion of cash flow generated by operating activities to assets is 0.0067, with a median of 0.0053; the average value of bank loans is 0.1627, with a median value of 0.1396.

Compared with companies without major defects, the mean and median values of commercial credit of companies with major internal control defects are slightly smaller, where there is smaller company size (size), poorer profitability (Cfo), and less cash flow of operating activities cash flow while both debt level (Lev) and bank loans (Bank) are both at a higher level. The above descriptive statistical are in line with common sense, indicating that the selection of samples is relatively reasonable.

Table 3. Descriptive statistics of main variables

Variables	Mean value	Median value	Standard deviation	Maximum value	Minimum value
TC	0.1931	0.1543	0.1431	0.5574	0.0280
Icmw	0.0619	0.0000	0.2410	911.0000	0.0000
LnGDP	15.3425	14.2300	7.9744	20.4875	9.2378
Size	13.3388	13.2053	1.4319	17.3529	10.0947
Lev	49.6975	49.7900	21.3887	97.8000	7.0400
Roa	3.586916	3.0900	5.7910	21.61	-17.68
Cfo	0.0067	0.0053	0.0052	0.0292	0.0006
Bank	0.1627	0.1396	0.1442	0.5900	0.0021

Table 4. Descriptive statistics of main variables after grouping

Variables	Mean value	The group with major defects			The group without major defects		
		Median value	Standard deviation	Mean value	Median value	Standard deviation	
TC	0.1923	0.1541	0.1420	0.2065	0.1574	0.1585	
Icmw	1.0000	1.0000	0.0000	0.0000	0.0000	0.0000	
LnGDP	14.2300	13.6387	13.9844	16.9382	14.2546	14.2300	
Size	12.9237	12.8620	1.3194	13.3662	13.2254	1.4349	
Lev	55.05163	56.0850	21.6051	49.3441	49.4700	21.3287	
Roa	1.0790	1.4500	6.7158	3.7525	3.2200	5.6864	
Cfo	0.0062	0.0048	0.0050	0.0067	0.0053	0.0052	
Bank	0.1897	0.1689	0.1500	0.1609	0.1378	0.1436	

4.2. Correlation test

The correlation among the variables is shown in Table 5. There is significant correlation between the interpreted variable of commercial credit TC and the interpreted variable Icmw, indicating that both the trust between an enterprise and its trading partners and the obtained commercial credit financing will be reduced if there is a major internal control defect. Among the control variables, there is a significant positive correlation between TC and financial leverage Lev &

bank loan Bank, indicating that commercial credit plays a role of alternative financing; there is a significant positive correlation between TC and the rate of return on total assets & operating activities cash flow Cfo, indicating that trading partners will give feedback on the positive financial information of the enterprise and release more commercial credit financing. The above observations are in line with our previous analysis. There are relatively less correlations among the rest variables, indicating that the setting of control variables is relatively reasonable.

Table 5. Correlation coefficients among variables

	TC	Icmw	LnGDP	Size	Lev	Roa	Cfo	Bank
TC	1							
Icmw	0.1294***	1						
LnGDP	0.0234	-0.0589	1					
Size	0.0859*	0.0745***	0.0125	1				
Lev	0.3264***	0.0643***	-0.0498	0.3833	1			
Roa	0.2692***	-0.1113	0.0079**	0.0173	-0.4256	1		
Cfo	0.3831***	-0.0204	0.2452	0.0042	0.0656***	0.1148	1	
Bank	0.0352***	-0.0482	0.0304	0.2994	0.6500	0.3684	0.0669**	1

4.3. Regression analysis results

In this paper, regression analysis is carried out with stata14.2. The model used is a fixed effect model commonly used in processing panel data, with hetero variance adjustment. In addition to regression analysis of the sample as a whole, in order to verify hypothesis 2 and analyze whether there is different impact of internal control defects on state-owned and private enterprises, the samples were classified into private enterprises and foreign-funded enterprises based on their nature as per classification by China Securities Regulatory Commission. Central state-owned enterprises and local state-owned enterprises are classified into state-owned enterprises, and the rest enterprises are classified into private enterprises. Regression analysis was performed on foregoing groups, separately, and the final regression results are shown in Table 6.

For the full samples, the coefficient of the explanatory variable Icmw is negative and significant at the 1% level, with a p value of 0.002. This indicates that internal control defects affect the quality of financial statements, worsen the information asymmetry between an enterprise and its trading partners, aggravate reverse selection and agency problems,

and reduce the credit level of the enterprise, thereby reducing the credit line of commercial financing. Therefore, hypothesis 1 is verified.

Among the control variables, there is significant negative correlation between bank loan Ban and commercial credit, proving the alternative financing theory, that is, companies without sufficient bank loans are more apt to finance through commercial credit. The significant negative correlation with the operating activities cash flow Cfo indicates that companies with sufficient operating activities cash flow do not need excessive commercial credit financing comparatively. Similarly, the significant positive correlation with the regional economic development LnGDP indicates that the more prosperous the area in which the company is located, the more common it is for the company and its trading partners to trade on credit and the more corresponding commercial credit financing. Furthermore, the larger the company size, the stronger its bargaining power in signing contracts with suppliers and the more commercial credit financing is obtained.

It was surprising that in the fixed effect regression of state-owned and private enterprises separately, there was quite significant negative correlation between the explanatory

variables and the explained variables of state-owned enterprises, with a p value of 0.000. On the contrary, such regression results of private enterprises were not significant at 10% level. This is inconsistent with hypothesis 2 that internal control defects have a greater impact on the commercial credit financing of state-owned enterprises. The possible reasons may be as follows: first, since state-owned enterprises are larger in size and can obtain more commercial credit financing, they are more affected in case of an internal control defect. Second, since the suppliers of state-owned enterprises are more concentrated, in case of an internal control defect, the overall commercial credit financing is more easily affected by reactions of individual suppliers. This problem should be further verified and explored in subsequent research. Compared with the overall samples, there is no significant correlation between the commercial credit financing and bank loans of state-owned enterprises, which is in line with the view that state-owned enterprises can obtain bank loans through political means.

In addition, given that the extent of the impact of the four circumstances on commercial credit financing may be varied, and in order to avoid the influence of complete

multicollinearity, the explanatory variable Icmw is replaced with the three virtual variables of finviolation, events, and ic_audit to measure the four types of internal control. After the processing, it was found that events and ic_audit appeared in 4 samples at the same time. At this time, ic_audit is deemed as timely disclosure of internal control defect, and events as a delayed disclosure. However, since the substantial disclosure had already occurred, only ic_audit is considered. After regression, the final results are shown in Table 7. It is found that if the internal control defects are broken down, compared with the self-assessment report, fines due to violations have the most significant negative correlation with commercial credit financing, followed by financial restatements. However, there is no significant correlation between major defects and commercial credit financing. This indicates that trading partners pay more attentions to the actual punishment caused by major internal control defects. If the regulator determines the internal control defects of an enterprise, the trust between the enterprise and its trading partners will be more affected and cause less commercial credit financing, which is also consistent with the research results of Feng Yanchao (2015) [20] et al.

Table 6. Regression analysis results

Variables	Overall samples	State-owned enterprises	Private enterprises
Icmw	-0.01899*** (-3.16)	-0.02462*** (-3.65)	-0.00456 (-0.35)
LnGDP	0.00243*** (0.75)	0.00196* (0.44)	0.01532 (0.55)
Size	0.00586*** (1.47)	0.01257*** (2.66)	-0.01068 (-1.28)
Lev	0.00014 (0.74)	-0.00004 (-0.19)	-0.00022 (-0.57)
Roa	-0.00022* (-0.66)	-0.00072* (-1.87)	0.00057 (0.84)
Cfo	-0.5833*** (-0.87)	-2.49019*** (-3.09)	4.32858*** (3.17)
Bank	-0.04767*** (-2.05)	-0.04295 (-1.63)	-0.12886* (-2.52)
Cons	0.10785** (1.99)	0.04262 (0.65)	0.28743*** (2.61)
i.Ind	Control	Control	Control
i.Year	Control	Control	Control
Sample size	5718	3609	2109
Adj R-squared	0.2130	0.2587	0.3252

4.4. Robustness test

In order to strengthen the robustness of the conclusion, the following three test methods are adopted:

First, the impact of major internal control defects on the increase in commercial credit financing is taken into account. (Accounts payable of the year- accounts payable of last year)/income revenue of last year is used to indicate the increase in commercial credit financing ΔTC . The regression results are shown in Table 8. There is significant correlation between internal control defects and commercial credit financing, which is in line with our conclusion.

Second, the means of measurement of commercial credit is changed. The proportion of the sum of accounts payable, bills payable and deposit received in the closing total assets is used

to indicate the commercial credit financing, and regression analysis is re-performed. It was found that the coefficient of the explanatory variable Icmw was -0.01520, and the P value was 0.008. The conclusion remains unchanged.

Third, new samples are drawn at a one-to-one ratio through propensity Score matching (PSM), of which samples with major internal control defects accounted for about 50% of total samples. Regression was re-performed based on the original model, and the conclusion was still consistent with the previous regression results. The coefficient of the explanatory variable Icmw was -0.0245, and the p value was -0.067, showing significant negative correlation at 10% level.

According to the two tests, it can be proved that the conclusions herein are relatively robust.

Table 7. Regression result after change of explanatory variables

Variables	Overall samples	State-owned enterprises	Private enterprises
finviolation	-0.01323*** (-1.63)	-0.02486*** (-1.78)	-0.00329 (-1.02)
events	-0.01137* (-1.33)	-0.02166* (-1.65)	-0.00104 (-0.34)
ic_audit	-0.00867 (-0.59)	-0.00325 (-0.31)	-0.00024 (-0.30)
LnGDP	0.00523* (0.74)	0.00180* (0.31)	0.01532 (0.55)
Size	0.00587 (1.48)	0.00351 (2.66)	-0.00892 (-1.27)
Lev	-0.00013 (-0.70)	-0.00007 (-0.59)	-0.00022 (-0.43)
Roa	-0.00020* (-0.61)	-0.00070* (-0.99)	-0.00037 (-0.87)
Cfo	-0.60169 (-0.90)	-1.03292 (-2.04)	1.05237 (3.17)
Bank	-0.04839** (-2.08)	-0.04304 (-1.60)	-0.08847* (-2.45)
Cons	0.10808** (2.00)	0.05332 (0.65)	0.28733*** (2.59)
i.Ind	Control	Control	Control
i.Year	Control	Control	Control
Sample size	5718	3609	2109
Adj R-squared	0.2084	0.1955	0.0921

Table 8. Regression analysis results after replacement of interpreted variables with ΔTC

Variables	Overall samples	State-owned enterprises	Private enterprises
Icmw	-0.00015*** (-2.49)	-0.00023*** (-3.69)	-0.00005** (-2.25)
LnGDP	0.00003 (0.89)	0.00006 (0.71)	0.00003 (0.60)
Size	0.00015* (1.71)	0.00027** (2.66)	-0.00528 (-1.93)
Lev	0.00014*** (4.23)	-0.00005 (-4.01)	-0.00023 (-3.58)
Roa	-0.00002** (-2.42)	-0.00002* (-1.92)	-0.00001 (-0.84)
Cfo	-0.03422** (-2.38)	-0.02760*** (-3.09)	0.03563** (3.17)
Bank	-0.00004 (-0.08)	-0.00003 (-0.10)	-0.00011* (-0.12)
Cons	0.00577*** (4.99)	0.00234 (2.65)	0.05665** (3.98)
i.Ind	Control	Control	Control
i.Year	Control	Control	Control
Sample size	5718	3609	2109
Adj R-squared	0.1801	0.2552	0.3021

5. Conclusion

In this paper, there are certain innovations in the recognition of internal control defects. On the basis of conventional internal control audit reports and internal control self-assessment reports, the prevalent concealment of internal control defects is taken into account, and financial restatements and punishment due to violations by the China Securities Regulatory Commission and exchanges are also added to the criteria for recognizing internal control defects. Therefore, the internal control recognition system is established from four dimensions.

Since commercial credit financing of an enterprise is

affected by the quality of internal control, and also serves as an important financing method that bears on the health of operation, investment and cash flow, it is recommended herein that enterprises should abide by relevant regulations of China Securities Regulatory Commission and exchanges on internal control disclosure, establish a sound internal control system, and properly maintain the trust with trading partners, so as to avoid the impact of insufficient commercial credit financing on normal operation and investment due to internal control defects. Regulatory departments should formulate specific standards for recognition of internal control defects as soon as possible, and also consider the inclusion of dimensions other than audit reports and self-assessment

reports to the internal control assessment system to substantially improve listed companies' internal control and protect the interests of investors and creditors. For external stakeholders such as trading partners and creditors, a new perspective for analyzing enterprises' internal control is offered, which helps better identify major internal control defects and make better decisions using relevant information.

References

- [1] Li Xiang. Empirical study of internal control in the United States:A review and insights[J]. *Audit Research*,2009(01):87-96.
- [2] Healy, and Palepu. "Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature." *Journal of Accounting and Economics*, vol. 31, no. 1, 2001, pp. 405-440.
- [3] Bronson, Scott N., et al. "Firm Characteristics and Voluntary Management Reports on Internal Control." *Auditing: A Journal of Practice & Theory*, vol. 25, no. 2, 2006, pp. 25-39.
- [4] Eng, and Mak. "Corporate Governance and Voluntary Disclosure." *Journal of Accounting and Public Policy*, vol. 22, no. 4, 2003, pp. 325-345.
- [5] Franklin, Mitchell., and Walden University. "Sarbanes Oxley Section 404: Can Material Weakness Be Predicted and Modeled? An Examination of the Variables of the ZETA Model in Prediction of Material Weakness." , 2007, Source: Dissertation Abstracts International, Volume: 67-12, Section: A, page: 4601.
- [6] Chen, Guanting, Li Shu. A comparison of Chinese and American internal control review standards[J]. *Audit Research*, 2002(05):32-37.
- [7] Li Yingqi, Chen Chunhua, Yu Junli. Disclosure of internal control evaluation information of listed companies in China:problems and improvements-evidence from 2011 internal control evaluation report[J]. *Accounting Research*, 2013 (08): 62-68+97.
- [8] Zhang Zhen, Li Xiaoqing. Analysis of the current situation of disclosure of internal control deficiencies of A-share listed companies in Shenzhen[J]. *Contemporary Economy*, 2015 (35): 22-23.
- [9] Yu Zengbiao, Wang Jingda, Qu Weijing. The construction of enterprise internal control evaluation system--a case study of ASIMCO Industrial Technology Co. *Audit Research*, 2007 (03): 47-52.
- [10] Yang Youhong,Wang Wei.A study on disclosure of internal control information of Shanghai companies in 2006 [J]. *Accounting Research*, 2008(03):35- 42+95.
- [11] Chen, Guan-Ting, Huang, Xiao-Lin, Zhang, Sweet. Internal control evaluation model based on enterprise risk management framework and its application[J]. *Audit Research*,2013(06):93-101.
- [12] Ba Shu Song, Liu Xiao Hong, Niu Baokun. A study on the interaction between local governance and banking reform in China's financial system during the transition period[J]. *Financial Research*,2005(05):25-37.
- [13] Lu Zhengfei, Yang Deming. Business Credit: Alternative Financing, or Buyer's Market? [J]. *Management World*, 2011(04):6-14+45.
- [14] Zheng Jun, Lin Zhonggao, Peng Lin. Can high quality internal control increase commercial credit financing? --A test based on the perspective of monetary policy change[J]. *Accounting Research*,2013(06):62-68+96.
- [15] Tsao, et al. "Sustainable Newsvendor Models under Trade Credit." *Journal of Cleaner Production*, vol. 141, 2017, pp. 1478-1491.
- [16] Cowton, Christopher J., and San - Jose, Leire. "On the Ethics of Trade Credit Understanding Good Payment Practice in the Supply Chain." *Journal of Business Ethics :JOB*E, vol. 140, no. 4, 2017, pp. 673-685
- [17] Zheng Jun, Lin Zhonggao, Peng Lin. Can high quality internal control increase commercial credit financing? --A test based on the perspective of monetary policy change[J]. *Accounting Research*, 2013 (06):62-68+96.
- [18] Rao Pingui, Jiang Guohua. Monetary policy, credit resource allocation and firm performance[J]. *Management World*, 2013 (03): 12- 22+47+187.
- [19] Love, Inessa, and Rida Zaidi. "Trade Credit, Bank Credit and Financial Crisis*." *International Review of Finance*, vol. 10, no. 1, 2010, pp. 125-147.
- [20] Feng,Yanchao. Internal control, audit quality and commercial credit financing in small and medium-sized enterprises[J]. *China CPA*,2015(01):72-78.