Supplementary Online Appendix

"Media Coverage and Bond Covenants: Evidence from China"

This appendix contains supplementary tables that are not included in the paper to conserve space.

Lists

Appendix A. Classification of covenants

Covenant-related data are collected manually from each bond's published prospectus. Referring to the classifications of bond covenants by Smith and Warner (1979) and Billett, King and Mauer (2007), and in combination with the characteristics of existing contract clauses for Chinese corporate bonds, we divide the covenants into four categories: covenants that restrict the distribution of earnings, those that restrict investment, those that restrict subsequent financing, and event-driven covenants.

Type of covenant	Content of covenant	Frequency
Covenants that restrict the distribution of earnings	Restriction of dividend payment	92.95%
	Restriction of compensation of executives	91.44%
Covenants that restrict investment	Restriction of investment and merger and acquisition	93.46%
	Restriction of the sales or pledge of assets	27.79%
	Restriction of external guarantees	42.79%
	Restriction of abandonment of debt claims	37.08%
	Restriction of related party transactions	43.49%
Covenants that restrict subsequent financing	Restriction of new borrowing	36.24%
	Restriction of the issuance of bonds	1.17%
Event-driven covenants	Significant losses warning	63.93%
	Compensation in case of default	93.29%
	Acceleration of payment in default	63.76%
	Relief in case of default	54.19%
	Cross default provisions	46.98%
	Change of credit rating	45.13%

Appendix B. Definitions of variables

Variables	Definition
Dependent variables	
Total covenants	Following Li, Tuna and Vasvari (2014) and Shi and Sun (2015), the total covenants are equal to the total number of covenants for each bond. The logarithm of (total covenants +1) is used in the regressions.
Cov_Div	Total number of covenants that restrict distribution of earnings for each bond. The logarithm of (*Cov_Div* + 1) is used in the regressions.
Cov_Inv	Total number of event-driven covenants for each bond. The logarithm of (*Cov_Inv* +1) is used in the regressions.
Cov_Fin	Total number of covenants that restrict subsequent financing for each bond. The logarithm of (*Cov_Fin* + 1) is used in the regressions.
Cov_Eve	Total number of event-driven covenants for each bond. The logarithm of (*Cov_Eve* +1) is used in the regressions.
Covenants index	Following Billett, King and Mauer (2007), for each corporate bond, and for each category of covenant, 1 is recorded if there is at least one covenant in that category in the bond prospectus, and 0 is recorded otherwise. As a result, each of the four categories of covenants has a 0–1 binary variable. Then, we sum these four binary variables and divide the result by 4, the total number of categories, thereby obtaining a basic covenants index for each bond.
Weighted covenants index	Referring to the study of Billett, King and Mauer (2007), the weighted covenants index is constructed by weighting the number of covenants within each covenant category.
CS	Credit spread measures the cost of debt, defined as a corporate bond's offering yield, minus the yield of the government bond with the same maturity.
Independent variables	
Media	Equal to log (1+ the number of company-related news items). Following Dyck, Volchkova and Zingales (2008) and Fang and Peress (2009), the media reports used in this study are drawn from the *China Securities Journal*, *Securities Daily*, *Securities Times*, *Shanghai Securities News*, *China Business Journal*, *First Financial Daily*, *The Economic Observer*, and *21st Century Economic Report*, obtained from the prestigious CNKI full-text newspaper database. We adopted a topic search to retrieve news reports that contain a company's full name or stock abbreviation. The search interval is one year before the bond issuance date.
Govn_Media	Equal to log (1+ the number of company-related news items in the government-oriented media). *China Securities Journal*, *Securities Daily*, *Securities Times*, and *Shanghai Securities News* are classified as government-oriented newspapers.
Market_Media	Equal to log (1+ the number of company-related news items in the market-oriented media). *China Business Journal*, *First Financial Daily*, *The Economic Observer*, and 2*1st Century Business Herald*, are classified as market-oriented newspapers.
Media_Net	Measures media reports on the internet. We use media report data from the market information series in the CSMAR database to construct a network media attention index using a method similar to that for the *Media* variable.

Media_9 months	This calculation is similar to that for the *Media* variable. *Media_9 months* measures the media coverage in the nine months before the bond issuance date.
Media_6 months	This calculation is similar to that of the *Media* variable. *Media_6 months* measures the media coverage in the six months before the bond issuance date.
Senti	*Senti* is the net positive tone and measures media tone. It is defined as (Pos-Neg)/(Pos+Neg), where Pos is the total score for the positive words in each report, and Neg is the total score for the negative words.
Control variables: Firm characteristics	
Size	Natural logarithm of total assets (in million yuan).
MB	(Total debt + total shares outstanding * year-end closing price)/ total assets.
Lev	Total liabilities / total assets.
ROA	Net profit / total assets.
State	Takes the value of 1 if the company is state-owned, and 0 otherwise.
Tangible_ratio	(Total assets – intangible assets – net goodwill) / total assets.
Cash	Cash and cash equivalents/asset.
CashFlow_Vol	Standard deviation of the ratio of EBITDA (earnings before interest, taxes, depreciation, and amortization) to total assets, computed using up to five years (as available) of historical data.
Current_Ratio	Current assets / current liabilities in natural logarithm form.
Interest_Coverage_Ratio	EBIT / interest expense.
Z_Score	Firm financial risk based on Altman (1968). *Z_Score* equals 0 if the financial risk is low (Altman Z-value is greater than 1.8), and 1 otherwise.
Control variables: Equity volatility	
Std of stock return	Standard deviation of daily excess returns, relative to the market index, for each firm's equity over the 180 days that precede the offering date of the bond.
Mean of stock return	Mean of daily excess returns, relative to the market index, for each firm's equity over the 180 days that precede the offering date of the bond.
Control variables: Bond characteristics	
Amount	Logarithm of the bond issuance scale (100 million yuan).
Maturity	Logarithm of the bond maturity.
Rating	Takes the value 4, 3, 2, or 1 if the bond rating is AAA, AA+, AA, or AA-, respectively.
Secured	Takes the value 1 if the bond has collateral, and 0 otherwise.
Control variables: Benchmark interest rate spreads	
Rf	Risk-free rate, which is the yield of the government bond with the same maturity.
Term_Spread	Yield spread between 10-year and 3-year government bonds.
Control variables: Corporate governance	
Analyst	Number of analyst coverage over the one year preceding the offering date of the bond.
Big4	Takes the value 1 if the firm is audited by a Big 4 accounting firm in the year prior to bond issuance, and 0 otherwise.
Board size	Total number of directors on the board in natural logarithm.
Board independence	Percentage of independent directors on the board.
Dual	Equals 1 if the CEO and chairman are the same person, and 0 otherwise.
Instrumental variables	
Develop	Ratio of the number of printed newspapers in the region to the total population.

Moderating variables	
State	Takes the value 1 if the company is state-owned, and 0 otherwise.
HHI	Herfindahl-Hirschman Index, which measures industry competitiveness.
Law	The sub-index of "Market Intermediary Organization Development and Law System Environment" in the report on China's provincial marketization index prepared by Wang, Fan and Yu (2017).

Appendix C1. Pearson correlation matrix

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	Total covenants	1										
(2)	Covenants Index	0.712***	1									
(3)	Weighted Covenants Index	0.895***	0.857***	1								
(4)	Media	-0.094**	-0.096**	-0.095**	1							
(5)	Size	0.241***	0.197***	0.285***	0.359***	1						
(6)	MB	0.028	0.078*	0.058	0.035	-0.421***	1					
(7)	Lev	0.119***	0.130***	0.149***	0.115***	0.515***	-0.450***	1				
(8)	ROA	-0.219***	-0.195***	-0.221***	0.199***	-0.099**	0.280***	-0.285***	1			
(9)	State	-0.054	-0.139***	-0.101**	0.129***	0.345***	-0.252***	0.198***	0.028	1		
(10)	Tangible_ratio	-0.125***	-0.098**	-0.135***	0.034	0.069*	-0.145***	0.180***	-0.082**	0.106***	1	
(11)	Cash	-0.139***	-0.080*	-0.143***	-0.081**	-0.326***	0.278***	-0.327***	-0.032	-0.163***	0.054	1
(12)	CashFlow_Vol	-0.091**	-0.078*	-0.085**	-0.015	-0.131***	0.138***	-0.165***	0.235***	-0.071*	0.028	-0.014
(13)	Current_Ratio	0.008	0.046	0.004	-0.167***	-0.337***	0.268***	-0.402***	-0.165***	-0.283***	0.096**	0.521***
(14)	Interest_Coverage_Ratio	-0.242***	-0.167***	-0.207***	0.081**	-0.106***	0.258***	-0.368***	0.313***	-0.009	-0.023	0.201***
(15)	Z Score	0.222***	0.161***	0.219***	0.015	0.425***	-0.397***	0.563***	-0.305***	0.202***	0.029	-0.242***
(16)	Mean of stock return	0.057	0.033	0.04	-0.065	-0.012	-0.092**	0.057	-0.024	0.051	0.072*	-0.01
(17)	Std of stock return	0.092**	0.193***	0.156***	0.006	-0.084**	0.080*	0.094**	-0.139***	-0.074*	0.035	0.053
(18)	Term	-0.156***	-0.166***	-0.215***	0.141***	-0.048	-0.037	0.005	0.073*	0.152***	0.092**	0.080*
(19)	Amount	0.032	0.041	0.039	0.428***	0.714***	-0.258***	0.284***	0.076*	0.291***	0.086**	-0.162***
(20)	Rating	0.072*	0.003	0.070*	0.275***	0.561***	-0.206***	0.140***	0.104**	0.426***	-0.02	-0.206***
(21)	Secured	-0.319***	-0.354***	-0.370***	0.052	-0.161***	-0.036	0.012	0.110***	0.128***	0.065	-0.019
(22)	Rf	-0.154***	-0.273***	-0.200***	-0.002	-0.057	-0.046	-0.04	0.070*	0.02	-0.002	0.031
(23)	Term Spread	0.052	0.049	0.115***	0.02	0.014	-0.062	-0.016	0.019	-0.049	-0.034	-0.03

Appendix C1. Continued

Variables	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1) Total covenants												
(2) Covenants Index												
(3) Weighted Covenants Index												
(4) Media												
(5) Size												
(6) MB												
(7) Lev												
(8) ROA												
(9) State												
(10) Tangible_ratio												
(11) Cash												
(12) CashFlow_Vol	1											
(13) Current_Ratio	0.057	1										
(14) Interest_Coverage_Ratio	0.144***	0.220***	1									
(15) Z Score	-0.156***	-0.309***	-0.279***	1								
(16) Mean of stock return	-0.070*	0.007	-0.123***	0.054	1							
(17) Std of stock return	0.007	0.174***	-0.058	0.035	0.377***	1						
(18) Term	-0.029	-0.016	0.075*	0.021	0.038	0.064	1					
(19) Amount	-0.068*	-0.213***	0.047	0.207***	-0.003	-0.031	0.143***	1				
(20) Rating	-0.055	-0.268***	0.075*	0.109***	-0.035	-0.154***	-0.016	0.435***	1			
(21) Secured	0.113***	-0.03	0.097**	-0.072*	-0.018	0	0.107***	-0.068*	0.239***	1		
(22) Rf	0.105**	-0.046	0.033	-0.026	-0.026	-0.140***	0.128***	-0.075*	0.093**	0.136***	1	
(23) Term Spread	-0.013	-0.029	0.016	0.013	-0.008	-0.090**	-0.051	-0.078*	0.081**	0.149***	0.145***	1

Note: This table reports the Pearson-correlation among all the variables used in this study. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level, respectively.

Appendix C2. Spearman correlation matrix

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	Total covenants	1.000										
(2)	Covenants Index	0.742***	1.000									
(3)	Weighted Covenants Index	0.978***	0.800***	1.000								
(4)	Media	-0.070*	-0.086**	-0.089**	1.000							
(5)	Size	0.273***	0.242***	0.294***	0.307***	1.000						
(6)	MB	0.001	0.077*	0.005	0.027	-0.551***	1.000					
(7)	Lev	0.134***	0.132***	0.146***	0.107***	0.572***	-0.499***	1.000				
(8)	ROA	-0.216***	-0.212***	-0.244***	0.186***	-0.160***	0.293***	-0.302***	1.000			
(9)	State	-0.061	-0.139***	-0.081**	0.132***	0.341***	-0.370***	0.200***	0.005	1.000		
(10)	Tangible_ratio	-0.133***	-0.105**	-0.133***	0.062	0.134***	-0.233***	0.264***	-0.183***	0.161***	1.000	
(11)	Cash	-0.117***	-0.047	-0.132***	-0.062	-0.327***	0.285***	-0.272***	0.011	-0.174***	-0.011	1.000
(12)	CashFlow_Vol	-0.190***	-0.194***	-0.206***	0.032	-0.150***	0.195***	-0.237***	0.208***	-0.059	-0.022	0.063
(13)	Current_Ratio	-0.004	0.050	0.009	-0.164***	-0.353***	0.299***	-0.395***	-0.204***	-0.282***	0.106***	0.506***
(14)	Interest_Coverage_Ratio	-0.204***	-0.152***	-0.203***	0.073*	-0.198***	0.326***	-0.436***	0.299***	-0.039	-0.052	0.260***
(15)	Z Score	0.220***	0.161***	0.225***	0.027	0.478***	-0.587***	0.577***	-0.317***	0.202***	0.159***	-0.241***
(16)	Mean of stock return	0.047	0.029	0.035	-0.049	-0.009	-0.096**	0.047	-0.041	0.030	0.062	0.009
(17)	Std of stock return	0.055	0.144***	0.058	0.007	-0.089**	0.113***	0.067	-0.114***	-0.097**	0.043	0.099**
(18)	Term	-0.206***	-0.217***	-0.231***	0.141***	-0.041	-0.024	0.005	0.085**	0.160***	0.139***	0.088**
(19)	Amount	0.058	0.069*	0.059	0.397***	0.717***	-0.364***	0.307***	0.022	0.283***	0.176***	-0.155***
(20)	Rating	0.064	0.000	0.068*	0.255***	0.529***	-0.263***	0.126***	0.089**	0.425***	-0.006	-0.197***
(21)	Secured	-0.329***	-0.362***	-0.353***	0.036	-0.160***	-0.011	0.006	0.106***	0.128***	0.064	-0.023
(22)	Rf	-0.288***	-0.419***	-0.321***	0.025	-0.084**	-0.009	-0.041	0.120***	0.070*	0.014	0.028
(23)	Term Spread	-0.083**	-0.132***	-0.079*	0.047	-0.081**	-0.048	-0.043	0.065	-0.036	-0.027	0.031

Appendix C2. Continued

Variables	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1) Total covenants												
(2) Covenants Index												
(3) Weighted Covenants Index												
(4) Media												
(5) Size												
(6) MB												
(7) Lev												
(8) ROA												
(9) State												
(10) Tangible_ratio												
(11) Cash												
(12) CashFlow_Vol	1.000											
(13) Current_Ratio	0.051	1.000										
(14) Interest_Coverage_Ratio	0.192***	0.306***	1.000									
(15) Z Score	-0.241***	-0.314***	-0.363***	1.000								
(16) Mean of stock return	-0.086**	0.024	-0.092**	0.049	1.000							
(17) Std of stock return	-0.044	0.185***	-0.029	0.013	0.298***	1.000						
(18) Term	0.042	-0.050	0.039	0.019	0.011	0.049	1.000					
(19) Amount	-0.042	-0.222***	-0.001	0.226***	0.008	-0.047	0.153***	1.000				
(20) Rating	-0.029	-0.271***	0.070*	0.106***	-0.040	-0.165***	-0.015	0.420***	1.000			
(21) Secured	0.138***	-0.052	0.090**	-0.072*	-0.014	0.052	0.123***	-0.073*	0.238***	1.000		
(22) Rf	0.134***	-0.086**	0.070*	-0.055	-0.010	-0.125***	0.244***	-0.046	0.058	0.183***	1.000	
(23) Term Spread	0.042	-0.076*	0.045	-0.040	-0.101**	-0.174***	0.011	-0.080*	0.049	0.184***	0.090**	1.000

Note: This table reports the Spearman-correlation among all the variables used in this study. *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level, respectively.