

Corporate Bankruptcy and Directors' Reputation: An Empirical Analysis of the Effects on Public Debt Contracts

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Abstract

This article investigates the link between board members' past professional experiences and the terms and conditions of the debt contracts of their current firms. In particular, we examine whether directors' past bankruptcy experience affects the pricing and nonpricing terms of public debt contracts. Using a sample of 8,142 bond issues in the United States in the period 1995 to 2015, we document higher credit spreads and smaller bond sizes for firms with such directors, suggesting that bondholders are concerned about past bankruptcy experience. Our results remain robust to different model specifications. This effect is moderated for bankruptcies that are likely driven by macroeconomic shocks such as the dotcom bubble and the global financial crisis. We also show that our findings are not explained by bond issuers with an elevated risk of default and seem instead to be driven by directors serving on key monitoring committees, indicating that prior bankruptcy experience raises concerns about the company's corporate governance. Finally, mediation analysis offers some evidence of a limited negative indirect effect of prior bankruptcy experience on the terms of debt contracts through the firm's financial and investment policies. Overall, our findings suggest that lenders incorporate information about past professional experiences of directors into public debt contracting.

Keywords

bankruptcy, corporate governance, reputation, public debt, bond contract terms, professional experience

Introduction

The consequences of corporate bankruptcy have received considerable scholarly attention. Filing for bankruptcy results in significant negative abnormal returns (e.g., Beneish &

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Press, 1995; Rose-Green & Dawkins, 2000) and reputation loss (Devers et al., 2009). Firms that do so are stereotyped as low-quality and low-reliability (Xia et al., 2016). Bankruptcy proceedings are also costly for the board members of bankrupt firms. For example, Gilson (1990) reports that such individuals experience reputation penalties in the form of reduced career opportunities.

Although bankruptcies are high-impact events for both the firms and the individuals involved, we know relatively little about how directors' prior bankruptcy experience affects their firms' decision-making and outcomes. Our study seeks to cast light on this issue by investigating the effects of directors' prior bankruptcy experience on the terms of bond contracts of firms they join subsequently.¹ We specifically focus on corporate bond issues for two main reasons. First, corporate bonds are the main source of external financing for U.S. firms. According to the Securities Industry and Financial Markets Association, outstanding U.S. corporate bonds amounted to more than US\$9,598 billion in the last quarter of 2019.² Second, bond contracts might give rise to severe agency problems between managers and bondholders. Unlike private debt lenders, bondholders do not have access to private borrower information and cannot directly monitor managerial decision-making (e.g., Bharath et al., 2008). Bond contracts also include fewer covenants relative to private loans (e.g., Ball et al., 2015). Hence, bondholders need to rely on additional screening mechanisms to mitigate information asymmetry and effectively control their risk exposure. We argue that obtaining information about corporate directors' prior experience and incorporating it within the bond contracts is one such mechanism.^{3,4}

To assess whether prior bankruptcy experience matters for bondholders, we examine the effect of such experience on key pricing (credit spread) and nonpricing (maturity and bond size) terms. We define prior bankruptcy experience (hereafter, BE) as serving on the board of a bankrupt firm within the period of financial distress, which is on average within 5 years of the bankruptcy filing. We refer to directors with such experience as BE directors and firms that subsequently appoint them as BE firms.⁵ Our main prediction is that the presence of a BE director is associated with higher credit spread and lower maturity and bond size.

Ex ante, there are several reasons why a director's prior experience at a financially troubled firm may negatively affect their current firm's debt contract terms. First, Fama and Jensen (1983, p. 315) posit that individuals experience "devaluation of human capital" in cases of material adverse events, which negatively affects their future career prospects and reputation. Indeed, empirical evidence indicates that directors experience significant reputation penalties measured by a loss in board appointments following adverse events such as bankruptcies (e.g., Gilson, 1990) and financial fraud (e.g., Fich & Shivdasani, 2007). Drawing on signaling theory, we posit that appointing directors with a tarnished reputation to corporate boards may signal poor corporate governance quality and raise concerns regarding the abilities of board members to monitor and advise management effectively and maintain financial soundness, thus increasing corporate governance risk.

Moreover, firms currently experiencing or expecting financial difficulties in the near future may be more likely to appoint a BE director to help cope with financial distress. That is, appointing BE directors may signal imminent financial problems and increased default risk.

Finally, past professional experiences may affect a firm's financial and investment risk tolerance. For example, in a recent paper, Gopalan et al. (in press) document increased financial and investment risk for firms interlocked with a bankrupt firm. Their findings suggest that directors exposed to less-costly bankruptcies lower their assessments of distress costs and engage in more risky behavior. Hence, past bankruptcy experience could also

signal a shift in the firm's risk tolerance. To the extent that the appointment of a BE director raises concerns about corporate governance risk, the future financial health of the company, or financial and investment risk tolerance, we expect that prior bankruptcy experience is reflected in less advantageous debt terms for the borrower.

To test whether director bankruptcy experience gives rise to negative externalities, we identify a sample of 489 firms that filed for bankruptcy between 2000 and 2014 with available financial data on Compustat and board network data on BoardEx. We then trace BE directors' subsequent career choices and explore whether appointing them influences key pricing (credit spread) and nonpricing (maturity and bond size) bond contract terms of the BE firms. Our results provide evidence that director bankruptcy experience is associated with the firm's bond contract terms. Specifically, we document that the presence of a BE director is associated with an increase in credit spread of 20.4 basis points (bps) and a decrease in bond size of 22.6% on average, which is both statistically and economically significant. However, contrary to our expectations, our main results indicate a positive effect of prior bankruptcy experience on bond maturity. Additional analysis shows that this positive effect is driven by speculative-grade issues, while for investment-grade bond issues, the association is negative, albeit insignificant.

Our findings support the notion that the appointment of a BE director raises concerns about the corporate governance, risk tolerance, or the future financial health of a firm. While empirically disentangling these potential explanations is challenging in our setting, we conduct several additional tests to cast some light on the channel through which past bankruptcy experience affects the terms of bond contracts. First, we examine the *corporate governance* channel by investigating whether the BE director's role on the boards of the bankrupt and the BE firms moderates the effect of past bankruptcy experience on the terms of bond contracts. To the extent that a BE director's appointment raises concerns about the quality of the BE firm's corporate governance and increases corporate governance risk, we expect to see more pronounced effects for firms with BE directors in key monitoring positions. Indeed, we find that the role of the BE director in a key monitoring committee explains the effect of past bankruptcy experience on debt contract terms that we observe. This provides support for the *corporate governance* explanation.

Next, we test the *impending financial difficulties* channel by examining whether our results are explained by firms whose performance is expected to deteriorate in the future. To this end, we partition our sample based on the credit ratings of the issues, because credit ratings reflect the likelihood of default, and repeat our main analysis separately for the subsamples of investment-grade and speculative-grade bond issues. If the *impending financial difficulties* channel is supported, we expect to find statistical significance for the speculative-grade issues but none for the investment-grade bond issues. Nonetheless, these analyses show that our results remain qualitatively similar for the subsample of investment-grade bonds but less so for the speculative-grade bonds. This indicates that the observed relationship is not driven by firms with a high probability of default, failing to provide support for the *impending financial difficulties* channel.

Third, it is plausible that a BE director's appointment signals a shift in the firm's financial and investment risk tolerance. To assess whether prior bankruptcy experience has an indirect effect on the design of bond contracts through the financial and investment policies of the firms, we apply a Sobel-Goodman test (MacKinnon et al., 1995; Sobel, 1982). The results provide limited support for the prediction that a firm's financial and investment policies mediate the relationship between bankruptcy experience and bond contract terms. Hence, we find only limited evidence that the risk tolerance channel explains our main

results. Thus, our additional analysis supports the *corporate governance* channel, although we cannot completely rule out alternative explanations.

Finally, as an additional analysis, we show that the effect of past bankruptcy experience on the terms of bond contracts is not homogeneous. Specifically, we do not observe any significant change in bond contract terms if the bankruptcy was filed during the dotcom bubble burst of the early 2000s and the global financial crisis (GFC) of 2007 to 2009. This suggests that bankruptcies likely driven by macroeconomic shocks do not damage BE directors' reputation significantly and do not impose negative externalities on the BE firms.

Our article contributes to the existing literature from two perspectives. First, it expands the still-nascent literature on the effects of prior experiences with distress on corporate behavior and outcomes. Existing studies focus mostly on how prior personal or professional experiences shape corporate financial and investment policies. For example, Bernile et al. (2017) find that CEOs exposed to natural disasters without extreme consequences behave more aggressively. Dittmar and Duchin (2016) document that firms led by CEOs with prior distress experience tend to take fewer risks, and Gopalan et al. (in press) show that board interlocks with a bankrupt firm are associated with subsequent higher risk taking at the focal firms.⁶ To our knowledge, ours is the first study that examines the effect of director bankruptcy experience on bondholders. In particular, we show that appointing a director with prior bankruptcy experience is likely viewed as a negative signal by bondholders and results in less advantageous borrowing terms. Our findings also complement the evidence presented in Gow et al. (2018), who document negative stock market reactions to the appointment of directors with disclosed experience in adverse-event firms.⁷

Second, we add to the literature on the role of corporate governance in debt contracting. Several empirical studies suggest that both external (Bhojraj & Sengupta, 2003; Chava et al., 2009; Cremers et al., 2007) and internal (Anderson et al., 2004; Fields et al., 2012; Klock et al., 2005) corporate governance mechanisms are priced in debt contracts. While these studies predominantly focus on the structural characteristics of corporate governance, we investigate the effect of an additional aspect—a director's prior experience at a distressed firm—an observable characteristic, which has not been previously studied in this context. Our analysis suggests that appointing a director with such experience increases corporate governance risk and is reflected in more costly debt.

This article proceeds as follows. In the next section, we develop our hypotheses. Section "Research Design and Sample Selection" outlines the sample selection and the methodology employed to test the effects of BE directors on firms' bond contracts. Section "Empirical Results" presents our main findings and robustness checks. The following section describes our additional analyses, and the final section concludes.

Hypothesis Development

Corporate boards allocate their time between monitoring and advising (Adams & Ferreira, 2007). In times of distress, board members may affect the probability of bankruptcy in at least two important ways. First, high-quality monitoring should support an effective response to financial distress and restrict the opportunities for insiders to mask poor financial performance by misrepresenting accounting data (Fich & Slezak, 2008). Second, board members may reduce bankruptcy risk by providing guidance and assistance in negotiating the restructuring of liabilities and outstanding loans with the firm's creditors. The advisory function of the board is especially relevant for firms with a high level of complexity (Darrat et al., 2016). The ability of directors to manage the situation thus has an important

effect on the outcome, that is, whether the company will recover from financial distress or file for bankruptcy.

In the case of a negative outcome, directors' actions are closely scrutinized (Gilson, 1990). Indeed, they might be held personally liable if the courts determine that they were not acting in the company's best interests. Moreover, following a bankruptcy filing, directors experience reputation loss and substantial labor market penalties (Gilson, 1990; Gopalan et al., in press), consistent with the view that they might be held responsible for failing to prevent financial distress. While the findings of extant research suggest that firms are less likely to appoint directors who have been previously involved with bankruptcy, little is known about whether appointing such a director could have any real consequences. This is the gap that our study aims to address. In particular, we investigate whether appointing a BE director has unintended consequences on the terms of issued bonds.

Drawing on prior literature (e.g., Certo, 2003; Certo et al., 2001), we argue that the appointment of a BE director serves as a credible signal for the appointing firm. Specifically, prior involvement with a bankrupt firm may serve as a negative signal about the director's quality and raise concerns about the firm's corporate oversight, thus increasing corporate governance risk. In addition, it might be perceived as an increase in the appointing firm's default risk because director bankruptcy experience may cast doubt on this person's ability to adequately address similar adverse events in the future. Finally, it is possible that the appointment of a BE director indicates a shift in a firm's risk tolerance (Gopalan et al., in press).

All else being equal, more information about the borrower's corporate governance should allow creditors to make better investment decisions and reduce investment risk by acquiring additional information or demanding more stringent contract terms and compensation for the additional risk. While private lenders like banks can demand private information to reduce information asymmetry and monitor firm performance to reduce risk exposure (Bharath et al., 2008), bondholders have access only to publicly available information. To the extent that firm riskiness increases due to the appointment of a BE director, bondholders would require higher returns as compensation for the additional risk. Hence, we hypothesize that the risk premium demanded by the bondholders is greater for firms with BE directors. This prediction is formally stated as follows:

Hypothesis 1 (H1): The appointment of a BE director is positively associated with the cost of corporate public debt.

Among the terms of debt contracts, maturity is of primary importance because it alleviates agency costs such as asset substitution problems and improves the monitoring of managerial behavior through more frequent controls (Barclay & Smith, 1995; Lou & Vasvari, 2013). Thus, we expect that riskier firms tend to issue bonds with shorter maturities compared with less risky issuers. Given that we expect firm riskiness to increase due to the appointment of a BE director on the board, we posit the following:

Hypothesis 2 (H2): The appointment of a BE director is negatively associated with bond maturity.

Finally, bond size is an indicator of the perceived ability of the issuer to repay its debt. Firms with low default risk and high ability to generate future cash flows can borrow more (Lou & Vasvari, 2013). In our setting, we argue that a BE director's appointment casts

doubt on the firm's ability to overcome potential financial difficulties and the effectiveness of the corporate governance mechanisms. If this is the case, we expect that all else being equal, BE firms will issue bonds of smaller size. Hence, we expect the following:

Hypothesis 3 (H3): The appointment of a BE director is negatively associated with bond size.

Research Design and Sample Selection

Bankruptcy Experience Measure

Our independent variable, *Bankruptcy_Exposure*, is an indicator variable equal to one if the bond issuer appoints a director who has been involved with a bankrupt firm within a 5-year period *before* the bankruptcy event (i.e., the “exposure” period) and the bonds are issued within a 5-year period *after* the bankruptcy event (i.e., the “contamination” period) and *after* the appointment of the director, and zero otherwise. To define the “exposure” period, we check for signs of financial distress using the Altman z score (Altman, 1968) to ascertain that the firm was already in distress when the director left it, if the end date of the appointment is before the bankruptcy date.⁸ On average, the bankrupt firms in our sample show signs of distress (Altman $z < 1.81$) about 5 years before the bankruptcy.⁹ Therefore, we assume that the “exposure” period spans between Year $t - 5$ and Year t , where Year t is the year in which the firm declares bankruptcy.¹⁰

Furthermore, we define a “contamination” period, that is, the period after the bankruptcy, during which we expect the negative reputation effect from the involvement with a bankrupt firm to be manifested. In our main analysis, we define the “contamination” period to be the 5-year period after the bankruptcy date. We choose to limit the “contamination” period because we expect that recent events are more salient to decision-makers and more likely to influence their perceptions and behavior (Hogarth & Einhorn, 1992). The BE director must have been appointed after that person's reputation had been “contaminated,” that is, after the bankruptcy event, for a firm to be considered BE.¹¹ We also require that the bonds be issued after the bankruptcy event and after the BE director is appointed for *Bankruptcy_Exposure* to equal one. Figure A2 in the Online Appendix provides a graphical representation of the bankruptcy exposure identification strategy.

Model Specification and Variables

To test our predictions that the appointment of a director with bankruptcy experience is associated with less advantageous bond contract terms, we estimate the following regression models:

$$\begin{aligned} Credit_Spread_{jt} = & \alpha + \beta_1 Bankruptcy_Exposure_{it} + \beta_n \sum Firm\ controls_{it-1} \\ & + \beta_k \sum Bond\ controls_{jt} + Industry\ FE + Year\ FE + \varepsilon, \end{aligned} \quad (1)$$

$$\begin{aligned} Maturity_{jt} = & \alpha + \beta_1 Bankruptcy_Exposure_{it} + \beta_n \sum Firm\ controls_{it-1} \\ & + \beta_k \sum Bond\ controls_{jt} + Industry\ FE + Year\ FE + \varepsilon, \end{aligned} \quad (2)$$

$$\begin{aligned}
 \text{Bond_Size}_{jt} = & \alpha + \beta_1 \text{Bankruptcy_Exposure}_{it} + \beta_n \sum \text{Firm controls}_{it-1} \\
 & + \beta_k \sum \text{Bond controls}_{jt} + \text{Industry FE} + \text{Year FE} + \varepsilon,
 \end{aligned}
 \tag{3}$$

where *Bankruptcy_Exposure* is the main variable of interest. It represents a dichotomous variable equal to 1 if a BE director serves on the board of firm *i* when bond *j* is issued, and 0 otherwise. Credit spread (*Credit_Spread*) is measured as the difference between bond yield as reported in Mergent Fixed Income Securities Database (FISD) at the time of the bond issue and a benchmark treasury yield related to U.S. Treasury bonds issued on the same day with a comparable maturity.¹² Maturity (*Maturity*) is the difference in years between the bond maturity date and the issue date. Bond size (*Bond_Size*) is estimated as the natural logarithm of the face value of the bond. In all models, we include a number of control variables to account for the firm- and bond-level characteristics that are likely to affect credit spread, maturity, and bond size. Smaller, more leveraged, and less profitable firms generally have high agency costs and are likely to obtain less favorable bond terms. To proxy for the firm's agency costs, we include firm size (*Size*; natural logarithm of total assets), leverage ratio (*Lev*; long-term debt divided by total assets), and profitability (*Profit*; return on assets). We also control for the firm's default risk by including controls for operating cash flows (*Cfo*; cash flows from operating activities divided by total assets), asset specificity (*Asset_Specificity*; research and development expense divided by total assets), and asset tangibility (*Tangibility*; net property, plant, and equipment divided by total assets). Finally, to proxy for the firm's investment opportunities, we include the ratio of the firm's book value to the market value (*Btm*). The firm-level controls are lagged 1 year unless otherwise specified.

Credit spread, maturity, and bond size are also likely to be influenced by the bond contract's specifications. Call options increase the flexibility of the issuer and are expected to be positively associated with credit spread. Accordingly, we include an indicator for whether the issue includes a call option (*Callable*). Put options (*Puttable*) and sinking fund (*Sinking_Fund*) clauses are beneficial for bondholders and are expected to be negatively associated with credit spread, whereas for subordinated designation (*Subordinated*) clauses, we predict a positive association with credit spread. Finally, bondholders take into account the credit ratings provided by credit rating agencies. We control for the issue's credit rating by including the numerical equivalent of S&P (or Moody's or Fitch) credit ratings at the issue date (*Credit_Rating*).¹³ High values of the *Credit_Rating* variable correspond to worse credit ratings and are associated with high default risk. If a rating is not available from any of the three credit agencies, we assign the issue the lowest credit rating, that is, the highest numerical value, and include a dichotomous variable *Not_Rated* equal to one if no rating is available and zero otherwise.¹⁴ Issues with credit ratings below BBB- for S&P and Fitch and Baa3 for Moody's are considered to be of speculative grade. We include an indicator variable equal to one if the issue is of speculative grade and zero otherwise.

To control for the possibility that the pricing and nonpricing terms depend on the industry membership, we include industry fixed effects (Industry FE) (e.g., Jorion et al., 2009; Lou & Vasvari, 2013) based on the two-digit Standard Industry Classification (SIC) codes. We include year fixed effects (Year FE) to account for time-variant macroeconomic factors that could influence bond terms. In addition, bond size exposes bondholders to higher potential losses in case of default. Hence, we control for *Bond_Size* in model specifications with *Credit_Spread* as the dependent variable. We also control for the bond's maturity because longer debt maturities are associated with higher agency costs and the probability

of default (Costello & Wittenberg-Moerman, 2011; Demiroglu & James, 2010). Similarly, we include *Credit_Spread* and *Bond_Size* and *Credit_Spread* and *Maturity* in model specifications with *Maturity* and *Bond_Size* as dependent variables, respectively. All variables included in the analysis are defined in the Appendix.

To account for the contemporaneous correlation between the error terms in Models (1), (2), and (3), we employ Zellner's seemingly unrelated regression (SUR) method (Zellner, 1962), which estimates the parameters of the three equations simultaneously. If H1 is supported, we expect the coefficient of interest β_1 in Model (1) to be positive and significant. If H2 and H3 are supported, we expect the coefficient β_1 in Models (2) and (3), respectively, to be negative and significant.

Sample Selection

Our initial sample of bankrupt firms consists of 589 U.S. firms that filed for Chapter 7 or Chapter 11 bankruptcy in the period between 2000 and 2014 with board connections data available on BoardEx.¹⁵ Four of these bankrupt firms do not have financial data available on Compustat, and other 96 are connected only to private firms. Our sample of bankrupt firms is then further narrowed to 81 bankrupt firms, whose former directors are appointed by the U.S. publicly traded companies that issue bonds within 5 years of the bankruptcy filing date with available information on Mergent FISD.^{16,17} Table 1, Panel A details the bankruptcy firm sample selection process.

Table 1, Panel B presents the sample selection of bond issues. To mitigate concerns that firms appoint directors specifically due to their bankruptcy experience, we exclude 345 issues by 28 issuers where more than one BE director is appointed during the contamination period. We expect that such firms are more likely to be experiencing financial difficulties and hence seek to appoint directors with relevant distress experience. Indeed, there seem to be fundamental differences between these firms and those that appoint only one director. Firms appointing more than one BE director are significantly smaller in size, less profitable, and much more likely to issue speculative-grade bonds than firms appointing only one BE director. Reinserting issuers with more than one BE director in the sample does not change our main inferences (see Table A5 in the Online Appendix).

The final sample of bond issues consists of 8,142 bond issues between 1995 and 2015 by 1,650 unique bond issuers with available bond issue data on Mergent FISD and financial data on Compustat for the years of the bond issue (Year t) and the previous year (Year $t - 1$).¹⁸ Of those bonds, 1,210 (approximately 14.9%) are issued by 152 firms after hiring one of 145 BE directors from 81 bankrupt firms.

Empirical Results

Descriptive Statistics

Table 2 presents the descriptive statistics for the firm- and bond-level variables employed in the empirical analysis. All continuous variables (except *Credit_Rating*) are winsorized at the first and 99th percentile to mitigate the effect of outliers.

On average, the bond issues included in the sample are long term with a mean maturity (*Maturity*) of about 11.4 years and an average credit spread (*Credit_Spread*) of about 197 bps. The average size of the bond (*Bond_Size*) is US\$479 million. In the regression analyses, we use the natural logarithm of the bond offering amount, which has a mean value of

Table I. Sample Selection.

Panel A: Bankruptcy Firm Sample.	
Sample selection procedure	Observations
Bankrupt firms with network information on BoardEx	589
Less: Bankrupt firms without financial data required for Altman z score on Compustat	-4
Less: Bankrupt firms without listed connections	-96
Subtotal	489
Less: Bankrupt firms whose directors are not appointed by firms that issue bonds within a 5-year period of the bankruptcy date	-408
Final sample of bankrupt firms (145 unique directors)	81
Panel B: Bond Issues Sample.	
Sample selection procedure	Observations
Bond issues on Mergent FISD between 1995 and 2015	136,511
Bond issues merged with Compustat	20,129
Less: Issues by financial firms	-11,275
Less: Observations with missing financial and bond issue data	-367
Less: Issues by firms appointing more than one BE director	-345
Final sample bond issues	8,142
Number of bonds issued by 152 firms after hiring one of the 145 BE directors from 81 bankrupt firms	1,210

Note. This table presents the sample selection process. The final sample of bankrupt firms consists of 81 firms that have filed for bankruptcy. A total of 145 directors from 81 bankrupt firms subsequently join firms that issue corporate bonds. The final sample of bond issues consists of 8,142 bond issues between 1995 and 2015 by 1,650 unique bond issuers available on Mergent FISD with available bond issue data on Mergent FISD and financial data on Compustat for the year of the bond issue (Year t) and the previous year (Year $t - 1$). FISD = Fixed Income Securities Database.

11.967 and a standard deviation of two. The average credit rating of the rated issues (*Credit_Rating*) included in our sample is 9.361, which corresponds approximately to a BBB rating according to S&P and Fitch and Baa2, according to Moody's. Unrated issues (*Not_Rated*) are about 10.2% of the issues included in the sample. Following prior literature (e.g., Costello & Wittenberg-Moerman, 2011), we assign the lowest credit rating to unrated issues. The mean *Credit_Rating* thus becomes 10.754, corresponding approximately to a BB+ rating according to S&P and Fitch and Ba1, according to Moody's. About 40.4% of the bond issues in our sample are assigned a speculative grade (*Speculative_Grade*).

The average bond issuer is relatively large, with total assets of US\$27.8 billion and highly leveraged with a lagged long-term debt-to-total assets ratio (*Lev*) of around 62.9%. The mean return on assets (*Profit*) is 0.04, capitalized expenditure (*Capex*) has a mean of 0.07, and book-to-market ratio (*Btm*) has a mean of 0.475.¹⁹

Univariate Analysis

Table 3 presents the univariate analyses. Panel A provides the mean and median values of our main dependent variables—*Credit_Spread*, *Maturity*, and *Bond_Size*—for the subsamples of bankruptcy exposure ($BE = 1$) and nonbankruptcy exposure ($BE = 0$) bond issues.

Table 2. Descriptive Statistics.

Variable	Observations	M	P(25)	Median	P(75)	SD
<i>Credit_Spread</i>	8,142	1.974	0.895	1.580	2.885	2.056
<i>Maturity (years)</i>	8,142	11.369	6.964	10.008	10.110	7.781
<i>Bond_Size (USD '000,000s)</i>	8,142	479.041	125	300	500	3,279.049
<i>Bankruptcy_Exposure</i>	8,142	0.149	0	0	0	0.356
<i>Size (USD '000,000s)</i>	8,142	27,804	3,165	11,256	30,015	50,435
<i>Lev</i>	8,142	0.629	0.529	0.641	0.752	0.161
<i>Profit</i>	8,142	0.043	0.018	0.044	0.077	0.067
<i>Tangibility</i>	8,142	0.386	0.164	0.337	0.576	0.254
<i>Asset_Specificity</i>	8,142	0.017	0	0	0.022	0.034
<i>Capex</i>	8,142	0.070	0.028	0.050	0.084	0.070
<i>Btm</i>	8,142	0.475	0.259	0.422	0.560	0.315
<i>Cfo</i>	8,142	0.093	0.057	0.090	0.131	0.069
<i>Credit_Rating</i> ³³	8,142	10.754	7	9	13	5.413
<i>Not_Rated</i>	8,142	0.102	0	0	0	0.303
<i>Speculative_Grade</i>	8,142	0.404	0	0	1	0.491
<i>Callable</i>	8,142	0.968	1	1	1	0.176
<i>Puttable</i>	8,142	0.061	0	0	0	0.239
<i>Sinking_Fund</i>	8,142	0.003	0	0	0	0.053
<i>Subordinated</i>	8,142	0.106	0	0	0	0.308

Note. This table reports the bond issues sample summary statistics. The sample spans 1995 to 2015. All continuous variables (except *Credit_Rating*) are winsorized at the first and 99th percentiles. All variables are defined in the Appendix.

Bond issues by BE firms as a whole have significantly lower credit spreads, maturities, and bond sizes with respect to nonbankruptcy exposure issues. Yet, this observation should be interpreted with caution because, in this analysis, we do not differentiate between investment- and speculative-grade bond issues.²⁰

Next, given the inherent differences between investment- and speculative-grade bonds, we partition the sample by whether the bonds receive investment or speculative grade at issue. Panel B of Table 3 presents the univariate analysis of the investment-grade subsample. The *t* test of the means and the Wilcoxon Mann–Whitney nonparametric test provide initial support for the predictions that the presence of a BE director is associated with less advantageous bond contract terms for the investment-grade subsample. The mean (median) credit spread for the BE subsample is 1.527 (1.300), which is significantly higher than the mean (median) credit spread of 1.375 (1.280) for the nonexposed subsample. The average maturity for the issues in the BE subsample is around 10 years, which is significantly lower than the average maturity for the nonexposed firms of approximately 13 years. Finally, the average bond size of BE issues of 10.506 is significantly lower than the average size of non-BE issues of 12.766.

Panel C details the mean and median and the results of the *t* test and the Wilcoxon Mann–Whitney nonparametric test for the speculative-grade subsample. We observe a higher average credit spread for the BE bond issues consistent with the findings for the investment-grade subsample. However, the average maturity and bond size are higher for the BE subsample, indicating that the presence of a BE director has different implications for the terms of the bond contracts depending on the rating. Specifically, while appointing

Table 3. Univariate Statistics for the Bond Issues Sample.

Panel A: All Bonds.						
Variable	BE = 1 (N = 1,210)		BE = 0 (N = 6,932)		M diff. p value	Median diff. p value
	M	median	M	median		
<i>Credit_Spread</i>	1.747	1.376	2.014	1.636	.000	.000
<i>Maturity</i>	10.072	8.080	11.596	10.011	.000	.000
<i>Bond_Size</i>	10.766	11.225	12.177	12.612	.000	.000
Panel B: Investment-Grade Bonds.						
Variable	BE = 1 (N = 1,055)		BE = 0 (N = 3,795)		M diff. p value	Median diff. p value
	M	median	M	median		
<i>Credit_Spread</i>	1.527	1.300	1.375	1.280	.000	.059
<i>Maturity</i>	9.995	7.052	13.130	10.027	.000	.000
<i>Bond_Size</i>	10.506	9.433	12.766	13.017	.000	.000
Panel C: Speculative-Grade Bonds.						
Variable	BE = 1 (N = 155)		BE = 0 (N = 3,137)		M diff. p value	Median diff. p value
	M	median	M	median		
<i>Credit_Spread</i>	3.241	3.265	2.787	2.825	.018	.022
<i>Maturity</i>	10.592	8.556	9.740	8.052	.058	.009
<i>Bond_Size</i>	12.539	12.612	11.464	12.206	.000	.000

Note. This table reports the summary statistics for the dependent variables and tests the difference in means (*t* test) and the difference in medians (Wilcoxon Mann–Whitney rank-sum test). Panel A presents the summary statistics for the dependent variables for the main sample of bond issues. Panel B presents the summary statistics for the dependent variables for investment-grade bonds. Panel C presents the summary statistics for speculative-grade bonds. *N* is the total number of observations in each subsample. The dependent variables are defined in the Appendix. BE stands for *Bankruptcy_Exposure* as defined in the Appendix.

BE directors might be perceived negatively for investment-grade issuers, speculative-grade issuers in (or close to) financial distress likely appoint BE directors specifically because of their experience at distressed firms, which might be viewed favorably by lenders.²¹

Multivariate Analysis

We study the association between the presence of a BE director and the terms of bond contracts within an SUR equations framework to estimate the parameters simultaneously and account for the correlation between the error terms of the three equations. Table 4 presents the results from the SUR estimation of Models (1), (2), and (3). The coefficient of interest β_1 is positive and significant ($z = 4.11$) in Model (1) as expected, supporting the prediction that BE firms bear a higher bond spread after controlling for a series of firm- and issue-specific characteristics, industry, and year fixed effects. More specifically, the presence of a BE director (*Bankruptcy_Exposure* = 1) is associated with an average increase in credit spread of 20.4 bps, which is both economically and statistically significant.²² The coefficient of *Bankruptcy_Exposure* in the estimation of Model (2) is positive and significant ($z = 2.54$), suggesting that BE issues have higher maturity than non-BE issues, which is

Table 4. Main Results: The Effects of Bankruptcy Exposure on Bond Contract Terms.

Dependent variable	(1) <i>Credit_Spread</i>	(2) <i>Maturity</i>	(3) <i>Bond_Size</i>
<i>Intercept</i>	-1.225 (-0.95)	-4.859 (-0.68)	15.310*** (11.09)
<i>Bankruptcy_Exposure</i>	0.204*** (4.11)	0.701** (2.54)	-1.484*** (-29.22)
<i>Maturity</i>	0.004 (1.92)		0.050*** (23.53)
<i>Bond_Size</i>	0.203*** (20.05)	1.321*** (23.53)	
<i>Credit_Spread</i>		0.119 (1.92)	0.237*** (20.05)
<i>Size</i>	-0.292*** (-21.11)	0.037 (0.46)	-0.036* (-2.33)
<i>Lev</i>	2.104*** (18.35)	1.126 (1.73)	-1.097*** (-8.71)
<i>Profit</i>	-1.146*** (-3.70)	3.638* (2.11)	0.389 (1.16)
<i>Tangibility</i>	-0.358** (-3.01)	1.246 (1.88)	0.744*** (5.80)
<i>Asset_Specificity</i>	-3.762*** (-6.50)	0.239 (0.07)	6.162*** (9.89)
<i>Capex</i>	1.997*** (6.15)	-3.712* (-2.05)	-0.739* (-2.10)
<i>Btm</i>	1.394*** (25.09)	0.050 (0.16)	-0.432*** (-6.94)
<i>Cfo</i>	-0.236 (-0.76)	2.018 (1.17)	-0.146 (-0.44)
<i>Credit_Rating</i>	0.099*** (10.58)	-0.140** (-2.67)	-0.074*** (-7.33)
<i>Not_Rated</i>	-1.776*** (-16.71)	2.621*** (4.36)	0.273* (2.34)
<i>Speculative_Grade</i>	1.046*** (17.78)	-2.545*** (-7.68)	-0.627*** (-9.76)
<i>Callable</i>	0.699*** (8.44)	1.944*** (4.20)	-0.425*** (-4.72)
<i>Puttable</i>	-3.724*** (-54.59)	11.210*** (26.43)	0.714*** (8.36)
<i>Sinking_Fund</i>	0.309 (1.15)	3.513* (2.35)	-0.740* (-2.55)
<i>Subordinated</i>	-0.860*** (-16.15)	0.514 (1.71)	0.620*** (10.68)
Observations	8,142	8,142	8,142
R ²	.640	.216	.548
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes

Note. The table displays the results from an SUR estimation with *Credit Spread*, *Maturity*, and *Bond Size* as the dependent variables in Columns (1), (2), and (3), respectively. All variables are defined in the Appendix. All continuous variables (except *Credit_Rating*) are winsorized at the first and 99th percentiles. z statistics are reported in brackets below the coefficients. SUR = seemingly unrelated regression. FE= fixed effects.

*, **, and ***Significance at the 10%, 5%, and 1% levels of two-tailed tests.

contrary to our prediction in H2.²³ Finally, focusing on bond size (Table 4, Column [3]), the coefficient β_1 (*Bankruptcy_Exposure*) is negative and significant ($z = -29.22$), providing support for the prediction that bankruptcy exposure is negatively associated with bond size. On average, appointing a BE director is associated with a 22.6% reduction in bond size.

The coefficients of the control variables are generally consistent with predictions based on prior studies. Larger, more profitable firms with more tangible assets can borrow at a lower cost. Unsurprisingly, the bond-level characteristics appear to be important determinants of bond contract terms. Specifically, higher quality bonds, measured by a lower credit rating score, are associated with a lower credit spread, longer maturity, and larger bond size. However, investors in speculative-grade bonds demand higher credit spread, lower maturity, and smaller bond size. Callable bonds provide flexibility to the issuer and, as expected, are associated with higher credit spread and smaller bond size.²⁴ The results remain consistent if the contamination period is restricted to 3 years.²⁵

Robustness Checks

The analyses presented thus far provide evidence that bankruptcy exposure is associated with the terms of the firm's bond contracts. However, a major concern is that directors with experience at a bankrupt firm are not randomly assigned to firms.²⁶ While we include a set of control variables aimed to capture different firm- and bond-level characteristics, to mitigate endogeneity concerns further, we perform a series of robustness tests.

First, to address concerns that the sample of bond issues by BE firms is nonrandom, we employ two treatment effects models: (a) an endogenous treatment effects linear regression model and (b) a treatment effects model with inverse probability regression adjustment. These two models incorporate the endogeneity of the appointment of a BE director in the estimation of the bond contract terms.

The endogenous treatment effects linear regression model requires a two-step estimation.²⁷ In the first stage, presented in Table 5, Panel A, we model the probability of appointing a BE director as a function of observable firm-level covariates (i.e., size, leverage, profitability, tangibility, asset specificity, capital expenditure, book-to-market ratio, and operating cash flows).²⁸ In Table 5, Panel B displays the results from the estimation model with credit spread, maturity, and bond size as the dependent variable in Columns (1), (2), and (3), respectively. *Bankruptcy_Exposure* coefficient in Model (1) is positive and significant ($z = 26.28$), consistent with the prediction that the appointment of a BE director is considered a risk factor and priced consequently by bondholders. Moreover, in the test of Model (2), β_1 is negative and significant ($z = -2.33$), providing some support also for the hypothesis that past bankruptcy experience is related to lower maturity (H2).²⁹ Finally, in Model (3), β_1 is negative and significant ($z = -25.18$), confirming the previously reported results and supporting the prediction that bankruptcy exposure results in a smaller bond size. The signs and the magnitude of the control variables' coefficients, not reported here for brevity's sake, are consistent with those reported in Table 4 and generally in line with prior research.

Next, we employ an endogenous treatment model with inverse-probability-weighted regression adjustments. The treatment group consists of firms with a BE director, and the probability of treatment is estimated based on the observable firm-level covariates also used in the previous model. The results of the estimation model, presented in Table A11 in the Online Appendix, are qualitatively similar to the results reported in Table 5.³⁰

Table 5. Robustness: Endogenous Treatment Effects Linear Regression Model

Panel A: Selection Model.

Variables	(1) <i>Bankruptcy_Exposure</i>
<i>Size</i>	0.326*** (24.22)
<i>Lev</i>	0.661*** (4.58)
<i>Profit</i>	0.453 (0.99)
<i>Tangibility</i>	-0.285** (-2.52)
<i>Asset_Specificity</i>	3.226*** (4.92)
<i>Capex</i>	-0.708 (-4.24)
<i>Btm</i>	-0.014 (-0.19)
<i>Cfo</i>	-0.906** (-2.10)
<i>Intercept</i>	-4.399*** (-25.44)
Observations	8,142
Pseudo R^2	.137

Panel B: Estimation Model.

Dependent variable	(1) <i>Credit_Spread</i>	(2) <i>Maturity</i>	(3) <i>Bond_Size</i>
<i>Bankruptcy_Exposure</i>	1.760*** (26.28)	-0.921** (-2.33)	-2.168*** (-25.18)
Firm-level controls	Yes	Yes	Yes
Bond-level controls	Yes	Yes	Yes
Observations	8,142	8,142	8,142
R^2	.639	.211	.540
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes

Note. The table displays the results from endogenous treatment linear regression model estimation. The selection model is reported in Panel A. The probability of treatment is estimated based on a probit regression with all firm-level variables as determinants. The estimation model is reported in Panel B with *Credit Spread*, *Maturity*, and *Bond Size* as dependent variables in Columns (1), (2), and (3), respectively. All variables are defined in the Appendix. All continuous variables (except *Credit_Rating*) are winsorized at the first and 99th percentiles. z statistics are reported in brackets below the coefficients. FE= fixed effects.

*, **, and ***Significance at the 10%, 5%, and 1% levels of two-tailed tests, respectively.

Finally, to address the possibility that some unobservable time-invariant firm-specific characteristics bias our results, we examine the effects of director bankruptcy experience on the terms of bond contracts by focusing only on the subsample of bond issues by firms

that appoint a BE director during the sample period. This approach allows us to contrast the terms of the bond contracts before and after the change in the *Bankruptcy_Exposure* status, effectively using firms as their own controls (e.g., Ettredge et al., 2012; Hail & Leuz, 2009). The results, presented in Table A13 in the Online Appendix, are qualitatively similar to our main results. The effect on maturity is negative, albeit not significant at the conventional levels.

Additional Analyses

Channels Through Which Bankruptcy Exposure Affects the Terms of Bond Contracts

Our main findings support the prediction that past bankruptcy experience is associated with the terms of bond contracts. This is consistent with the notion that the appointment of a BE director increases the riskiness of the firm by raising concerns about the firm's board oversight (i.e., corporate governance risk), risk tolerance (i.e., financial and investment risk), or future financial health (i.e., distress risk). Next, we turn to some additional analyses to provide insights into the channels through which past bankruptcy experience affects bond contract terms.

Corporate governance channel. According to the *corporate governance* channel, the appointment of a director with a tarnished reputation raises concerns about the firm's corporate governance, which is reflected in stricter contract terms. We examine this channel by exploiting the role of the BE director on the board of the bankrupt and the BE firm. Faley et al. (2011) identify the audit, nominating, and compensation committees as the key monitoring committees because their main responsibilities include closely monitoring management and maintaining high corporate governance quality. To the extent that the bondholders are concerned about the quality of the corporate governance of the BE firms after the appointment of a BE director, we expect that the effects of past bankruptcy experience on bond contracts are more pronounced if the BE director serves on a key monitoring committee.

To test whether the effect of *Bankruptcy_Exposure* on credit spread, maturity, and bond size is driven by firms with BE directors serving on key roles, we define two new dichotomous variables. *Monitor_Comm* equals one if the BE director serves on a monitoring committee in the bond-issuing firm, and *BMonitor_Comm* equals one if the BE director serves on a key monitoring committee in the bankrupt firm. *Monitor_Comm* is one for 72% of our *Bankruptcy_Exposure* issues (872 observations) and *BMonitor_Comm* is one for 62% of the *Bankruptcy_Exposure* issues (750 observations). We interact *Monitor_Comm* and *BMonitor_Comm* with *Bankruptcy_Exposure* and expect these interaction variables to be positively associated with credit spread and negatively associated with maturity and bond size.

The results are presented in Table 6. We document a positive and significant effect of the interaction variables on credit spread (Columns [1] and [2]) and a negative and significant effect on bond size (Columns [5] and [6]), in line with the expectation that past bankruptcy experience is particularly relevant for firms with BE directors serving on key monitoring committees. Notably, the effect of *Bankruptcy_Exposure* becomes insignificant after including the interaction variable in the analysis, suggesting that observations with *Monitor_Comm* or *BMonitor_Comm* equal to one explain our results fully.³¹ It is important

Table 6. Additional Analysis: Test of the Corporate Governance Channel.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	<i>Credit_Spread</i>	<i>Credit_Spread</i>	<i>Maturity</i>	<i>Maturity</i>	<i>Bond_Size</i>	<i>Bond_Size</i>
<i>Bankruptcy_Exposure</i>	-0.008 (-0.11)	0.013 (0.21)	0.265 (0.64)	-0.077 (-0.22)	0.021 (0.27)	-0.020 (-0.32)
<i>Bankruptcy_Exposure</i> × <i>Monitor_Comm</i>	0.346*** (3.70)		0.534 (1.02)		-2.371*** (-25.44)	
<i>Bankruptcy_Exposure</i> × <i>BMonitor_Comm</i>		0.422*** (4.48)		1.480*** (2.82)		-3.059*** (-34.74)
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Bond-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,142	8,142	8,142	8,142	8,142	8,142
R ²	.640	.640	.218	.218	.585	.611
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. The table displays the results from an SUR estimation with *Credit_Spread*, *Maturity*, and *Bond_Size* as the dependent variables in Columns (1–2), (3–4), and (5–6), respectively. The sample includes bond issues between 1995 and 2015. *Monitor_Comm* is 1 if the BE director serves on the audit, nominating, or compensation committee of the bond-issuing firm. *BMonitor_Comm* is 1 if the BE director serves on the audit, nominating, or compensation committee of the bankrupt firm. All other variables are as defined in the Appendix. All continuous variables (except *Credit_Rating*) are winsorized at the first and 99th percentiles. z statistics are reported in brackets below the coefficients. SUR = seemingly unrelated regression. FE= fixed effects.

*, **, and ***Significance at the 10%, 5%, and 1% levels of two-tailed tests, respectively.

to note that all directors who serve on a key monitoring committee at the bankrupt firm also serve on a key monitoring committee at the bond-issuing firm. Hence, it is impossible to empirically disentangle the effects of being on a key committee at either the bankrupt firm or the bond-issuing firm. Overall, these findings suggest that bondholders are likely concerned about the corporate governance quality of firms appointing BE directors, providing support for the *corporate governance* channel.³²

Impending financial difficulties channel. If the appointment of a BE director signals imminent financial problems, we expect that our results are driven by BE firms with a high probability of default or firms that expect adverse shocks to their performance in the future. To test this assertion, we run two additional tests.

First, we partition the sample based on the bond rating assigned at issuance, as it captures the probability of default, and we replicate our main tests separately for the subsamples of investment- and speculative-grade issues. Of all observations, 4,850 are assigned to the investment-grade subsample and 3,292 to the speculative-grade subsample. Table 7, Panel A, presents the SUR estimation results on the subsample of investment-grade bond issues. The coefficient of *Bankruptcy_Exposure* is positive and significant ($\beta_1 = 0.126$, $z = 3.27$) in Column (1), indicating a positive effect on *Credit_Spread*, negative but not significant in Column (2), and negative and significant ($\beta_1 = -1.569$, $z = -29.88$) in Column (3) indicating a negative effect on *Bond_Size*. The coefficients of the control variables (untabulated for brevity) are qualitatively and quantitatively similar to the previously reported results. Table 7, Panel B, reports the results for the speculative-grade subsample. The effect

Table 7. Additional Analysis: Test of the Impending Financial Difficulties Channel.

Panel A: The Effect of Bankruptcy Experience on the Terms of Debt Contracts for Investment-Grade Bond Issues.

	(1)	(2)	(3)
Dependent variable	<i>Credit_Spread</i>	<i>Maturity</i>	<i>Bond_Size</i>
<i>Bankruptcy_Exposure</i>	0.126***	-0.185	-1.569***
	(3.27)	(-0.46)	(-29.88)
Firm-level controls	Yes	Yes	Yes
Bond-level controls	Yes	Yes	Yes
Observations	4,850	4,850	4,850
R ²	.61	.14	.61
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes

Panel B: The Effect of Bankruptcy Experience on the Terms of Debt Contracts for Speculative-Grade Bond Issues.

	(1)	(2)	(3)
Dependent variable	<i>Credit_Spread</i>	<i>Maturity</i>	<i>Bond_Size</i>
<i>Bankruptcy_Exposure</i>	0.072	0.588*	-0.210**
	(0.56)	(1.91)	(-2.15)
Firm-level controls	Yes	Yes	Yes
Bond-level controls	Yes	Yes	Yes
Observations	3,292	3,292	3,292
R ²	.66	.55	.70
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes

Note. The table displays the results from an SUR model with *Credit Spread*, *Maturity*, and *Bond Size* as the dependent variables in Columns (1), (2), and (3), respectively. The coefficients of the control variables are not tabulated for brevity. All variables are defined in the Appendix. All continuous variables (except *Credit_Rating*) are winsorized at the first and 99th percentiles. z statistics are reported in brackets below the coefficients. Panel A presents the results for the subsample of investment-grade issues, and panel B presents the results for the subsample of speculative-grade issues. SUR = seemingly unrelated regression. FE = fixed effects.

*, **, and ***Significance at the 10%, 5%, and 1% levels of two-tailed tests, respectively.

of *Bankruptcy_Exposure* on *Credit_Spread* is not significantly different from zero, while the effect on *Bond_Size* is negative, consistent with the results for the investment-grade subsample, but smaller in magnitude. The effect on *Maturity* is positive and weakly significant. This analysis fails to provide support for the *impending financial difficulties* channel.

Second, we classify firms into life cycles following the approach outlined by Dickinson (2011). Issues by firms classified as being in a shakeout or a decline life cycle in any year during our sample period are removed from the sample. The findings of this analysis, presented in Table A14 in the Online Appendix, are consistent with those reported previously.

Increased risk tolerance channel. Prior professional experience at a bankrupt firm may affect the risk tolerance of the individuals involved and their current firms (e.g., Gopalan

et al., in press). Hence, it is possible that the BE firms in our setting may increase their financial and investment risk, which in turn results in less advantageous bond contract terms.

In all model specifications presented thus far, we control for the firm's financial leverage, operating cash flows, capital expenditures, and R&D investments to ensure that we are not capturing any effects on the terms of bond contracts that could be due to the firm's financial and investment policies. However, to directly assess whether and to what extent the firm's financial and investment policies mediate the effect of prior bankruptcy experience on the terms of bond contracts, we conduct a Sobel-Goodman test for mediation (MacKinnon et al., 1995; Sobel, 1982) separately for each outcome variable (i.e., *Credit_Spread*, *Maturity*, and *Bond_Size*) and for each potential mediator (*Lev*, *Cash_Hold*, and *Capex*). The results, presented in Table 8, indicate that the indirect effect of bankruptcy experience on credit spread through leverage accounts for only 3.7% of the total effect, whereas the direct effect accounts for the remaining 96.3%. Furthermore, leverage partially mediates the effect of prior bankruptcy experience on bond size. The indirect effect explains 1.9% of the total effect of prior bankruptcy experience on bond size, whereas the direct effect explains the remaining 98.1%. Hence, we document only limited evidence in support of the *increased risk tolerance* channel.

Taken together, our additional analyses provide support for a *corporate governance* channel. Yet, we acknowledge that we cannot completely rule out all alternative explanations.

Do the Main Findings Depend on the Causes of Bankruptcy?

Our results are consistent with the notion that appointing directors with a damaged reputation can be costly for the firm in question. To the extent that this effect is due to the capital providers attributing responsibility to board members for corporate distress, we expect lower reputational penalties and hence lower (or no) effects for bankruptcies taking place in exceptionally challenging market conditions or adverse macroeconomic shocks such as the dotcom bubble of the early 2000s or the GFC of 2007 to 2009. To test this assertion, we generate an indicator variable, *GFC_DOTCOM*, for bankruptcies during the years 2000 and 2001 (the dotcom bubble) and 2007, 2008, and 2009 (the GFC) and interact it with our main variable of interest, *Bankruptcy_Exposure*. The findings, presented in Table A15 in the Online Appendix, show that the interaction variable is significantly negatively associated with credit spread and positively associated with bond size, completely mitigating the effects of *Bankruptcy_Exposure*. That is, the net effect of bankruptcy exposure on the terms of bond contracts is indistinguishable from zero for firms appointing directors whose prior firms filed for bankruptcy, likely due to exogenous shocks to firm performance.

Conclusion

In this article, we investigate how a director's past bankruptcy experience affects the pricing and nonpricing terms of public debt contracts. We document higher credit spread and smaller bond size for firms with such directors. This is in line with the argument that directors' career records and prior experiences are relevant for investor decision-making. Our findings are robust to implementing treatment effects models and other specifications. This mitigates, albeit without eliminating, endogeneity concerns. In addition, our findings with respect to maturity are mixed and should be interpreted with caution. Specifically, while

Table 8. Additional Analysis: Increased Risk Tolerance Channel (Sobel-Goodman Test).

(1) Dependent variable	(2) Independent variable	(3) Mediator	(4) Indirect effect coefficient (p value)	(5) Direct effect coefficient (p value)	(6) Total effect coefficient (p value)	(7) Ratio of indirect effect to total effect	(8) Ratio of direct effect to total effect
<i>Credit_spread</i>	<i>Bankruptcy_Exposure</i>	<i>Lev</i>	-1.623* (.059)	45.460*** (.000)	43.834*** (.000)	3.7%	96.3%
<i>Credit_spread</i>	<i>Bankruptcy_Exposure</i>	<i>Capex</i>	0.563 (.224)	45.460*** (.000)	46.023*** (.000)	1.2%	98.8%
<i>Credit_spread</i>	<i>Bankruptcy_Exposure</i>	<i>Cash_Hold</i>	-0.063 (.763)	25.488*** (.000)	25.425*** (.000)	0.2%	99.8%
<i>Maturity</i>	<i>Bankruptcy_Exposure</i>	<i>Lev</i>	-0.006 (.526)	-0.783*** (.002)	-0.788*** (.001)	0.7%	99.3%
<i>Maturity</i>	<i>Bankruptcy_Exposure</i>	<i>Capex</i>	-0.006 (.507)	-0.783*** (.002)	-0.789*** (.002)	0.2%	99.8%
<i>Maturity</i>	<i>Bankruptcy_Exposure</i>	<i>Cash_Hold</i>	-0.000 (.977)	-0.443* (.091)	-0.4429* (.091)	0.0%	100%
<i>Bond_size</i>	<i>Bankruptcy_Exposure</i>	<i>Lev</i>	-0.033*** (.005)	-1.702*** (.000)	-1.736*** (.000)	1.9%	98.1%
<i>Bond_size</i>	<i>Bankruptcy_Exposure</i>	<i>Capex</i>	0.000 (.962)	-1.703*** (.000)	-1.703*** (.000)	0.0%	100%
<i>Bond_size</i>	<i>Bankruptcy_Exposure</i>	<i>Cash_Hold</i>	-0.002 (.354)	-1.884*** (.000)	-1.886*** (.000)	0.1%	99.9%

Note. The table displays the results from a Sobel-Goodman test for mediation effects. The test is run separately for each dependent variable/mediator pair with firm- and issue-specific controls resulting in nine different combinations with *Credit_spread*, *Maturity*, and *Bond_size* as dependent variables in Column (1) and *Leverage*, *Cash_Hold*, and *Capex* as mediators in Column (3). The mediator variables are lagged 1 year. The independent variable *Bankruptcy_Exposure* is one if the firm is identified as exposed and 0 otherwise. The test includes the full set of firm-specific control variables (lagged 1 year) and issue-specific control variables. All variables are defined in the Appendix. All continuous variables are winsorized at the first and 99th percentiles. The values of p are reported in brackets below the coefficients in Columns (4), (5), and (6). *, **, and ***: Significance at the 10%, 5%, and 1% levels of two-tailed tests, respectively. ** shows significance at the 5% level, which is already added; in this table none of the variables are significant at the 5% level.

we document a positive effect on maturity, which appears to be driven by speculative-grade issuers, the effect for investment-grade issues is negative but insignificant.

Our main findings are consistent with a number of potential explanations. The additional tests support a *corporate governance* channel. Our interviews with global fixed-income asset managers also indicated that they view the appointment of bankruptcy-experienced directors on the board as a red flag signaling poor corporate governance. Instead, we do not find evidence for the *impending financial difficulties* and the *increased risk tolerance* channels. Future research could provide additional evidence on the channels through which past professional experiences affect debt contracting.

Taken together, our evidence suggests that board members' professional experience matters for debt contracting purposes and appointing directors with prior bankruptcy experience has real economic consequences for bond-issuing firms. What remains an open question is whether the cost of equity capital is also higher for firms that appoint such

Appendix

Variable name	Definition	Source/s
Dependent variables		
<i>Credit_Spread</i>	The difference between a bond issue's offering yield and the yield of a benchmark treasury issue	Mergent FISD and U.S. Department of the Treasury
<i>Maturity</i>	An issue's maturity date minus its offering date in years	Mergent FISD
<i>Bond_Size</i>	The natural logarithm of an issue's offering amount	Mergent FISD
Independent variable		
<i>Bankruptcy_Exposure</i>	An indicator variable = 1 if a director with a recent bankruptcy experience serves on the board of the issuer when the bond is issued; we require that the director was serving on the board of the bankrupt firm at any point in time during the 5-year period preceding the bankruptcy date and that the bonds are issued within the 5-year period following the bankruptcy date and the appointment of the director	BoardEx, Mergent FISD, SEC Edgar
Firm-level controls		
<i>Size</i>	Natural logarithm of total assets	Compustat
<i>Lev</i>	Long-term debt (dltt) scaled by total assets (at)	Compustat
<i>Profit</i>	Return on assets; income before extraordinary items (ib) divided by total assets (at)	Compustat
<i>Tangibility</i>	Net property plants and equipment (ppent) divided by total assets (at)	Compustat
<i>Asset_Specificity</i>	Research and development expense (xrd) divided by total assets (at)	Compustat
<i>Capex</i>	Capital expenditure (capx) divided by total assets (at)	Compustat

(continued)

Appendix (continued)

Variable name	Definition	Source/s
<i>Btm</i>	Book-to-market ratio, computed as stockholder's equity (ceq) divided by the number of outstanding shares of common stock times the share market price at the financial year end (csho*prcc_f)	Compustat
<i>Cash_Hold</i>	The sum of cash (ch) and short-term investments (che) scaled by total assets (at)	Compustat
<i>Cfo</i>	Operating cash flows (oancf) divided by total assets (at)	Compustat
Issue-level controls		
<i>Credit_Rating</i>	Numeric values assigned to bond ratings offered by S&P's, ranging from 1 to 21 (AAA = 1, AA+ = 2, etc.). If S&P rating is not available, we use Moody's rating. If Moody's rating is not available, we use Fitch's	Mergent FISD
<i>Not_Rated</i>	An indicator = 1 if no rating related to the issue is available	Mergent FISD
<i>Speculative_Grade</i>	Indicator variable equal to 1 if an issue is rated below BBB- by S&P or Fitch, or below Baa3 by Moody's and 0 otherwise	Mergent FISD
<i>Callable</i>	An indicator = 1 if the issue has a call option	Mergent FISD
<i>Puttable</i>	An indicator = 1 if the issue contains a put option	Mergent FISD
<i>Sinking_Fund</i>	An indicator = 1 if the issue requires a sinking fund	Mergent FISD
<i>Subordinated</i>	An indicator variable = 1 if the issue is subordinated	Mergent FISD
Variables used in the additional analyses		
<i>Monitor_Comm</i>	An indicator = 1 if the director with past bankruptcy experience serves on a key monitoring committee (audit, compensation, or nominating) at the bond-issuing firm	BoardEx, SEC Edgar
<i>BMonitor_Comm</i>	An indicator = 1 if the director with past bankruptcy experience serves on a key monitoring committee (audit, compensation, or nominating) at the bankrupt firm	BoardEx, SEC Edgar
<i>GFC_DOTCOM</i>	An indicator = 1 during the global financial crisis (2007–2009) and the dotcom bubble burst (2000–2001)	

Note. SEC = Securities and Exchange Commission; EDGAR = Electronic Data Gathering, Analysis, and Retrieval.

directors and whether prior bankruptcy experience matters for private lenders. We believe that these are interesting avenues for future research.

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Data Availability

The data used in this study are available from the indicated sources.

Supplemental Material

Supplemental material for this article is available online.

Notes

1. Hereinafter, we use bankruptcy experience and bankruptcy exposure interchangeably.
2. See <https://www.sifma.org/resources/research/bond-chart/>.
3. Background information is disclosed in the annual proxy statements (form DEF 14A) filed with the Securities and Exchange Commission (SEC) pursuant to Section 14(a) of the Securities Exchange Act of 1934. Forms DEF 14A are publicly available on SEC Electronic Data Gathering, Analysis, and Retrieval (EDGAR).
4. While prior studies provide compelling evidence that corporate governance affects the terms of bond contracts (e.g., Cremers et al., 2007; Klock et al., 2005), there is no direct evidence on precisely what type of information is considered by bondholders when making investment decisions. To get a better understanding of whether corporate governance in general—and directors' background in particular—is considered by bondholders, we conducted five semi-structured interviews with highly reputed global asset managers from different investment banks and investment management firms. The names of the investment firms are undisclosed for confidentiality reasons. The asset managers indicated that obtaining information about board composition is an important part of the corporate governance quality assessment. Moreover, the profile of the

directors matters, including prior professional experience, especially when the director in question holds a key position on the board, for example, audit committee member.

5. See Section “Bankruptcy Experience Measure” for a complete discussion of how BE director and BE firm are operationalized in this study.
6. Our study differs from these papers in several important aspects. Notably, while Dittmar and Duchin (2016) and Gopalan et al. (in press) focus on the risk-taking behavior of firms with executives and board members with distress experience, we investigate the effects of appointing such individuals on a firm’s debt contracts, while controlling for firm-level risk taking. Hence, we show that there are additional economic effects beyond what has already been reported in prior research.
7. Gow et al. (2018) report that directors that previously held a board seat at troubled firms are more likely to withhold information about these directorships. Strategic disclosure of directorships is not an issue in our sample as in all but one of the cases, the directorship was disclosed in at least one proxy statement prior to bond issuance. Information about the directorship can be obtained also from filings of the bankrupt firm or from other sources.
8. Directors frequently leave or are dismissed from firms in expectation of adverse events (e.g., Bar-Hava et al., 2021; Fahlenbrach et al., 2017). Investors might also demand that a firm’s directors resign prior to bankruptcy. A recent example is the 2019 activist campaign initiated by BlueMountain Capital Management, which demanded that PG&E Corp.’s directors resign after the plan to file for bankruptcy protection was disclosed. Source: <https://www.ft.com/content/57904a3e-1800-11e9-9e64-d150b3105d21>
9. See Figure A1 in the Online Appendix for a graphical presentation of the Altman z score before the bankruptcy filing.
10. In additional analysis, we find evidence suggesting that bond issuers with BE directors who leave the distressed firms earlier are less negatively affected by the affiliation with a bankrupt firm. See Table A1 in the Online Appendix.
11. As a robustness check, we conduct the main analysis with an alternative measure of *Bankruptcy_Exposure* that includes firms with directors who were already serving on the board of the focal firm at the time of the bankruptcy. The results (reported in Table A2 in the Online Appendix) are consistent with our main findings, albeit weaker, potentially because the reputation of such directors is less affected by subsequent events, and thus, the change of status from non-BE to BE has a weaker effect on debt contract terms of these firms. We also check whether there are reputational spillover effects to firms interlocked with the bankrupt firm and we find evidence that interlocked firms also experience somewhat higher credit spread and smaller bond size. See Table A3 in the Online Appendix.
12. Following Lou and Vasvari (2013), we employ credit spread as a measure of the cost of debt instead of the stated bond yield because fixed-income investors are relative investors, that is, they are interested in the difference in the interest rates with respect to a risk-free benchmark (government bond yields or mid swap curve rates).
13. Consistent with prior studies (e.g., Costello & Wittenberg-Moerman, 2011), in this article, a credit rating of AAA corresponds to a credit rating score of 1, AA+ corresponds to 2, and so on. The higher the quality of the bonds, the lower the value of the *Credit_Rating* variable and vice versa. If S&P rating is not available, we use Moody’s rating. If Moody’s rating is not available, we use Fitch credit rating.
14. We recognize that there could be heterogeneity among the unrated bond issues. While unrated bonds are typically issued by firms with low credit quality, firms with investment-grade profiles may also issue such bonds. Thus, although *Not_Rated* is an important control variable, we recognize that it could be noisy. As a robustness check, we rerun our main analysis without controlling for *Not_Rated* and find the same results (see Table A4 in the Online Appendix).
15. BoardEx is a proprietary database provided by Management Diagnostic Ltd. We focus on bankruptcy cases in and after 2000 because our research design requires identifying directors involved

with the bankrupt firm 5 years before the bankruptcy event and BoardEx coverage is sparse in the beginning of the 1990s.

16. The initial sample of bankrupt firms consists of a sample of firms that file for Chapter 7 liquidation or Chapter 11 reorganization, compiled from the The University of California, Los Angeles (UCLA)-LoPucki Bankruptcy Research Database (BRD) and the Compustat Annual Database. Firms that file for Chapter 7 bankruptcy are smaller (Bris et al., 2006) and less likely to be covered by BoardEx. Hence, the final sample of 81 bankrupt firms, whose directors join listed bond issuers, includes firms that file for Chapter 11 bankruptcy with one exception.
17. Our final sample of bankrupt firms is reduced to 81 firms due to the requirement that the appointing firm should issue bonds within a 5-year period from the bankruptcy filing date to be considered a BE firm. Directors from other bankrupt firms are frequently rehired at other firms that do not enter our sample either because they are not listed or do not issue bonds during our sample period.
18. We include bond issues in the period from 1995 to 2000 to ensure that our sample also includes bond issues by BE firms classified as such between 2000 and 2005, that is, before they become BE firms. To the extent that some firms with BE directors are misclassified as non-BE firms in the period from 1995 to 2000, our results are underestimated. As a robustness test, we rerun our main analysis on a more restrictive sample spanning 2005 to 2015. In this way, we ensure that the sample does not include bond issues by firms appointing directors with prior experience at firms that filed for bankruptcy before 2000, for example, during 1999, but are not classified as BE firms because we do not observe bankruptcy filings prior to 2000. The results are qualitatively similar to our main results. See Table A6 in the Online Appendix.
19. We report the summary statistics separately for the BE and non-BE subsamples in Table A7 (Online Appendix).
20. Such a distinction is important as there are fundamental differences between speculative- and investment-grade bonds and the firms that issue them. In addition, we note that while in the non-BE subsample, 45% of the issues are classified as speculative grade, only about 13% of the BE issues are speculative grade, which suggests that comparing BE and non-BE issues without conditioning on the grade at issuance might not be meaningful in our setting.
21. Indeed, our interviews with fixed-income asset managers suggested that investors consider the appointment of a director with prior distress experience on the board of a financially troubled company (i.e., high-yield/speculative-grade bond issuer) as a positive sign.
22. In an alternative specification of Model (1), we take the natural logarithm of credit spread to account for the tendency of credit spreads to be skewed. The results are robust. β_1 is positive (0.075) and significant ($z = 3.67$).
23. Additional analysis reported in Table 7 shows that this is driven by speculative-grade issues. This result could be due to the ability of firms to refinance their bonds and hence adjust/extend their maturities (Xu, 2018).
24. As an additional test, we examine whether bankruptcy experience is associated with other terms of bond contracts such as the probability of including put and call options. We find evidence of higher probability of put options, which provide additional flexibility to bondholders (and hence are less advantageous to the bond issuer), but no change in the probability of call options, which are advantageous to the bond issuer. See Table A9 in the Online Appendix.
25. Specifically, in this analysis, we observe that *Bankruptcy_Exposure* is positively associated with *Credit_Spread* ($\beta_1 = 0.316$, $z = 3.18$) and negatively associated with *Bond_Size* ($\beta_1 = -0.469$, $z = -4.14$). The association between *Bankruptcy_Exposure* and *Maturity* is not significant. See Table A10 in the Online Appendix.
26. We recognize that the decision to issue bonds is also endogenous. However, all firms in our sample issue bonds. In addition, we do not observe any significant differences in the propensity to issue bonds for the subsample of BE firms before and after the appointment of a BE director, which mitigates such concerns.

27. This model is based on Maddala (1983) and is similar to the approach of Heckman (1976). It is commonly applied in studies with endogenous independent variables. For example, Reisel (2014) uses a similar approach to account for the endogeneity of covenant choice in her study on the effects of restrictive bond covenants on the cost of debt.
28. We include all firm-level covariates in the selection model. Alternative model specifications yield similar results.
29. The findings with respect to the effect of past bankruptcy experience on maturity are inconsistent with the findings of our main model and should be interpreted with caution.
30. As an additional robustness check, we implement entropy balancing (Hainmueller, 2012). This preprocessing technique allows us to balance the covariate moments by reweighting the non-BE observations such that they become indistinguishable from the covariate moments of the treated sample. Table A12 in the Online Appendix reports the results of an ordinary least squares (OLS) regression on the entropy-balanced sample, which overall are consistent with our main findings.
31. We do not report the coefficients of *Monitor_Comm* and *BMonitor_Comm* separately as these variables are perfectly correlated with the interaction variable and are omitted in the regression.
32. Our interviews with five fixed-income asset managers from global investment banks and asset management firms also provide anecdotal evidence in support of the *corporate governance* channel. Indeed, they indicate that the presence of a BE director in a key role (e.g., on the audit committee) on the board is viewed as a red flag regarding the quality of corporate governance.
33. A total of 7,311 issues in our sample are assigned a credit rating by at least one of the three credit rating agencies (S&P, Moody's, and Fitch). The average credit rating of the 7,311 rated issues (*Credit_Rating*) included in our sample is 9.361, which corresponds approximately to a BBB rating according to S&P and Fitch and Baa2 according to Moody's. Following prior literature (e.g., Costello & Wittenberg-Moerman, 2011), we assign the lowest credit rating to unrated issues. The mean *Credit_Rating* thus becomes 10.754.

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