It's Not So Bad: Director Bankruptcy Experience and Corporate Risk-Taking

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Radhakrishnan Gopalan
Washington University in St Louis

Todd A. Gormley
Washington University in St. Louis and ECGI

Ankit Kalda
Indiana University

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Keywords: directors, bankruptcy, risk, experience, beliefs

JEL Classifications: G34, G40, G41, D84, G32, G33

Radhakrishnan Gopalan
Professor of Finance
Washington University in St. Louis, Olin Business School
One Brookings Drive
St. Louis, MO 63130-4899, United States
phone: + 1 314 935 9196
e-mail: gopalan@wustl.edu

Todd A. Gormley
Associate Professor of Finance
Washington University in St. Louis, Olin Business School
Simon Hall, One Brookings Drive
St. Louis, MO 63130, United States
phone: +1 314 935 7171
e-mail: gormley@wustl.edu

Ankit Kalda*
Assistant Professor of Finance
Indiana University, Kelley School of Business
1309 E. 10th St.
Bloomington, IN 47405, United States
phone: +1 812 855 1395
e-mail: akalda@iu.edu

*Corresponding Author

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1. Introduction

Existing evidence suggests that individual traits, especially risk attitudes, are shaped by early-life experiences (e.g., Elder and Clipp, 1989; Elder, 1998; Guiso, Monte, Sapienza, and Zingales, 2008; Malmendier and Nagel, 2011) and that these traits, particularly those of the CEO, influence corporate outcomes (e.g., Malmendier, Tate, and Yan, 2011; Bernile, Bhagwat, and Rau, 2017). However, when companies describe hiring decisions pertaining to executives and directors, they emphasize not only early-life experiences but also recent work experiences.[1] Despite this, relatively little is known about whether experiences acquired later on in life can shape individual traits, including risk preferences and assessments. Even less is known about whether an individual director, and the experiences they bring to board deliberations, can meaningfully influence a firm's policy choices. Most analyses of directors and their influence instead focuses on a board's overall structure, like the share of outside directors and its size (e.g., Adams, Hermalin, and Weisbach, 2009). In this paper, we assess whether directors' later-life experiences are associated with active learning and an adjustment of risk attitudes, and whether these experiences of an individual director matter for corporate outcomes.

The specific experience we focus on is corporate bankruptcy. In particular, we identify directors that were on the board of a firm that declared bankruptcy and evaluate whether a director's participation in that bankruptcy is associated with a shift in risk-taking at other firms the director serves in. A direct engagement with a bankruptcy event could affect the directors' assessments of distress costs. For example, a protracted, contentious bankruptcy that results in liquidation might confirm a director's view that bankruptcy is costly, while a quick, pre-packaged bankruptcy that results in a successful return to operations could cause the director to lower her estimate of distress costs. Any such shift

[1]For example, Colgate-Palmolive states that directors "must have the requisite intelligence, education, and experience to make a significant contribution...' See https://www.colgatepalmolive.com/en-us/about/governance/independent-board-candidate-qualifications. Moreover, a 2015 Harvard Business Review article, "Where Boards Fall Short," notes that "Boards that combine deep relevant experience and knowledge with independence can help companies break through inertia and create lasting value."

in a director's views is likely to influence the advice she provides to other firms, and in matters of distress costs, managers and other board members could be inclined to give greater weight to the advice of an individual director with firsthand experience. If true, the learning experience of one director might influence an entire board's (and hence, a firm's) risk tolerance.[2]

We focus on bankruptcy as it is an experience with the potential to affect directors' attitudes toward risk, and hence, the advice they provide on a range of corporate decisions. Bankruptcy is likely an intense experience for directors both because it is relatively rare and because of its potentially significant consequences for their careers (Gilson, 1990). Moreover, the regulatory and legal aspects of the bankruptcy process likely make it difficult to learn about secondhand, suggesting that firsthand experience could be quite informative about distress costs.[3] The potential implications of this experience also exceed those of other, more routine experiences in a director's corporate life, such as an acquisition or a CEO turnover, as risk assessments and expected distress costs are key inputs into numerous corporate decisions, including capital structure, investment, and acquisitions.

An additional advantage of focusing on bankruptcy is that it allows us to say something more general about experiences and the development of risk attitudes. Risk attitudes are implicitly shaped by a cost-benefit type analysis; in other words, do the expected benefits of taking a particular risk exceed the expected costs? However, this cost-benefit analysis can be difficult because the costs associated with taking risks are often associated with less common outcomes (i.e., left-tail events) making it difficult for individuals to learn about them. By analyzing bankruptcy experiences, we are able to analyze whether individuals' risk attitudes respond to the realization of these left-tail events.

To analyze the importance of a director's bankruptcy experience, we begin by con-

[2]This is similar to what happens in a team of academic coauthors. The author with the most past experience in publishing usually has more influence on the positioning of the paper, which can play an important role in the likelihood of publishing the paper in a top journal.

[3]For example, bankruptcies covered in the press could skew towards those that are relatively contentious and costly making it difficult for a director to learn about the true costs of bankruptcy.

structing a novel dataset that identifies firms that share at least one director with a firm that files for bankruptcy. We begin with a list of all large, public company bankruptcy filings in the United States during 1994-2013 from the Lopucki Bankruptcy Research Database. We then use BoardEx and data from firms' proxy statements to obtain information on the identities of all directors employed at these firms and their concurrent directorships at other firms. Using this information, we are able to identify 718 firms that share at least one director with 261 firms that file for bankruptcy at some point during our sample period. For brevity, we refer to the 718 firms as the "treated" firms in our sample.

We then estimate changes in risk-taking at the treated firms using a difference-in-differences (DID) specification. The first difference is between the treated firms and the control firms, which are either all other public firms or firms that are observationally similar (along size, profitability, and industry dimensions) to the treated firms before the bankruptcy event. The second difference is between the period before and the period after the bankruptcy. In all specifications, we include firm fixed effects to ensure that our estimates come from within-firm variation in the dependent variable, three-digit SIC industry-by-time fixed effects to control for time-varying, industry-level changes, and state-by-time fixed effects to control for economic conditions at the state level.

We assess three sets of risk measures - corporate financial policies such as net leverage, cash holdings, and equity issuance; outcomes of firm risk such as cashflow volatility, stock volatility, and distress; and measures of acquisition activity. The motivation behind analyzing acquisition activity stems from the prior evidence of managers engaging in diversifying acquisitions to reduce firm risk (e.g., Amihud and Lev, 1981; May, 1995; Cai and Vijh, 2007; Acharya, Amihud, and Litov, 2011; Gormley and Matsa, 2011, 2016).

We find that, on average, treated firms *increase* risk and move closer to bankruptcy following a director's experience with bankruptcy at another firm. Relative to the control firms, net leverage at the treated firms increases in the years following the bankruptcy, and this shift is driven by treated firms issuing relatively less equity and holding less cash.

Cash flow volatility, stock volatility, and distress events also increase for the treated firms, while their distance to default and number of diversifying acquisitions both decrease.

The timing of the observed change in risk-taking suggests our findings are not simply driven by a matching between firms willing to take more risks and risk-tolerant directors. In particular, we find an uptick in risk-taking at treated firms only following directors' bankruptcy experience at another firm even though, on average, these directors were sitting on the board of the treated firms for over six years prior to the bankruptcy filing.

We next assess possible concerns with interpreting our estimates as an effect of director experience. First, we analyze the possibility of coincident events affecting other directors on the board and do not find support for this possible explanation. Using the approach of Masulis and Zhang (2019) to identify events that might affect other directors' monitoring or advice about risk-taking, we find no evidence that such events occur disproportionately among our treated firms. Moreover, controlling for these events does not affect our findings. Next, we analyze the possibility of common shocks to firms that share a director and do not find evidence to support this possible explanation. 86% of our treated firms do not belong to the same 48 Fama-French industry as the bankrupt firm, reducing the likelihood of a common shock that operates at the industry level. Our findings are also robust to excluding treated firms that are from industries that are a customer or supplier to the industry of the bankrupt firm, and our results are not driven by treated firms that are more likely to be economically connected to the bankrupt firm, as measured using connectedness measures proposed by Fresard, Hoberg, and Phillips (2019).

To further rule out the possibility of common shocks to firms that share a director, we conduct placebo tests. In particular, we identify firms that previously shared a common director with a firm that files for bankruptcy but did not share a director at the time of the other firm's bankruptcy. We find that there is no change in risk-taking among these pseudo-treated firms. This highlights that it is likely the director's firsthand bankruptcy experience and ongoing presence on the board that drives our findings and not some

other similarity shared by firms with common directors. Consistent with this, we also find that the observed change in risk-taking is not present if the director experiencing bankruptcy exits the connected firm shortly after their experience.

The increase in risk-taking at the treated firms, while surprising at first blush, is reasonable if the bankruptcy experience lowers a director's assessment of distress costs. This is more likely to occur following a bankruptcy that is quick and painless as opposed to a bankruptcy that is protracted and costly. We test this conjecture using three measures of bankruptcy costs: total professional fees the firm pays during bankruptcy, the number of days the firm spends in bankruptcy, and the stock price reaction during the three-day window surrounding the bankruptcy filing. Professional fees are a measure of direct bankruptcy costs, while time spent in bankruptcy is positively associated with both direct and indirect bankruptcy costs (e.g., Altman, 1984; Dou, Taylor, Wang, and Wang, 2019). The stock price reaction reflects the total expected costs associated with bankruptcy.

We find that the increase in risk-taking is concentrated among treated firms where a director experiences a bankruptcy with lower costs, and there is less evidence of a change in firms' risk-taking when their directors experience a protracted and costly bankruptcy. These results suggest that the intensity of an experience matters, and that, on average, directors update their views regarding distress costs downwards following less costly bankruptcy experiences. They further suggest that directors update their expectations of the costs associated with bankruptcy but not of the probability of bankruptcy itself. Otherwise, one would expect to find some effects for relatively more costly bankruptcies.

The increase in risk-taking following a director's bankruptcy experience is surprising given past evidence that corporate bankruptcies impose costs on directors in terms of fewer future directorships (Gilson, 1990). To unravel this puzzle, we examine directors' careers in the years after their bankruptcy experience. Consistent with Gilson (1990), we find that the average number of directorships declines following a bankruptcy. However, this decline is concentrated among the more costly bankruptcies; we find less evidence

of a decline following less expensive bankruptcies suggesting that such bankruptcies impose fewer costs on directors. The lack of a negative career impact and the possibility that this experience is different from a typical director's priors can explain why directors seem to lower their expected costs of distress following less costly bankruptcies.

Our findings are also concentrated among firms where the primary role of the interlocked director is to provide advice and when the director is expected to have a greater influence over the board. In particular, we find that the increase in risk-taking is confined to instances when the interlocked director is a non-independent director, which is the type of director generally thought to play more of an advisory role (Adams and Ferreira, 2007; Adams, 2009). We also find the results to be stronger if the interlocked director has a larger social network, possibly indicating her stature and potential influence over the board, and if more than one director is interlocked with the bankrupt firm.

Interestingly, we do not find evidence to suggest our findings are driven by a shift in monitoring, as might occur if the bankruptcy serves as a distraction for the affected director. We find no change in risk-taking when the interlocked director is a member of one of the monitoring committees, as identified in Faleye, Hoitash, and Hoitash (2011). Moreover, directors are likely to be more distracted during protracted bankruptcies (Masulis and Zhang, 2019), which is when we observe little evidence of a change in risk-taking by the interconnected firm. Further, to the extent managers have an underlying preference to take on less risk (e.g., see Jensen and Meckling 1976; Amihud and Lev 1981; Smith and Stulz 1985; Holmstrom 1999; Parrino, Poteshman, and Weisbach 2005; Coles, Naveen, and Naveen 2006; Gormley and Matsa 2016), it is also unclear why a reduction in monitoring would result in an increase in risk-taking by the treated firms.

Combined, our findings contribute to the growing literature that examines the effect of personal experiences, particularly those of the CEO and other top executives, for corporate outcomes (e.g., Malmendier et al., 2011; Roussanov and Savor, 2014; Schoar and Zuo, 2017; Bernile et al., 2017). While this literature focuses on experiences that tend to be

passive (e.g., living through a depression, natural disaster, etc.), we instead focus on an experience that involves active participation by the individual and show findings consistent with active learning. Our findings indicate that traits that are shaped by experience, including those related to risk preferences, can change over time as a result of additional experiences. In this regard, our findings also connect to the broader debate regarding the origin of personality traits [e.g., see Section 2.7 of Bertrand (2011) for a discussion of the 'nature' versus 'nuture' debate on gender-related traits].

Our findings also contribute to the literature on corporate boards. Rather than analyze the importance of board-level characteristics like size (e.g., Yermack, 1996; Coles, Daniel, and Naveen, 2008) and share of outside or co-opted directors (e.g., Weisbach, 1988; Coles, Daniel, and Naveen, 2014), we instead focus on individual directors and provide evidence that even one director can make a difference. Our findings also complement the literature on individual director traits, like gender (e.g., see Adams and Ferreira, 2009; Adams, Licht, and Sagiv, 2011; Adams and Funk, 2012; Adams, Akyol, and Verwijmeren, 2018), by highlighting the importance of traits that vary over time because of acquired experiences. In this regard, our findings build upon Field and Mkrtchyan (2017) and Ellis, Guo, and Mobbs (2020), which find that directors with experience in overseeing an acquisition or firing a CEO are associated with better future acquisitions and a greater future willingness to fire CEOs, respectively. By focusing on an experience that affects risk assessments, however, our findings illustrate that director experiences matter more generally for corporate outcomes, including those not directly connected to the underlying experience.

Our findings also speak to the literature regarding the dual roles of directors as both monitors and advisors. With the exception of survey evidence presented in Adams (2009) and work that examines the role of board expertise and information (e.g., Guner, Malmendier, and Tate, 2008; Duchin, Matsusaka, and Ozbas, 2010; Dass, Kini, Onal, and Wang, 2014; Drobetz, von Meyerinck, Oesch, and Schmid, 2018), prior work on direct-

ors primarily focuses on their monitoring role, particularly among independent directors (e.g., Weisbach, 1988; Kaplan and Reishus, 1990; Byrd and Hickman, 1992; Ferris, Jagannathan, and Pritchard, 2003; Wang, Xie, and Zhu, 2015; Hauser, 2018). Given that expertise and information can aid both the advisory and monitoring activities, it is difficult for the literature to disentangle one from the other (Brickley and Zimmerman, 2010; Dass, Kini, Nanda, Onal, and Wang, 2013). Our findings, however, suggest that the advisory role of directors, particularly from non-independent directors, is also important.

Our findings also show that the experiences of directors and managers matter differently. Dittmar and Duchin (2016) find that firms take less risk when managed by CEOs who experienced distress in a past professional, non-director experience, whereas we find that firms take more risk when they have a director who recently experienced bankruptcy at another firm where they act as a director. The difference in findings could be due to a larger career penalty that distress events impose on executives. If a distress event results in an executive losing her job and incurring large financial losses (e.g., Eckbo and Thornburn, 2003; Eckbo, Thorburn, and Wang, 2016), then she is likely to internalize a higher cost than a director that does not experience a similar penalty. Thus, similar to Bernile et al. (2017), our paper highlights the importance of conditioning on experience intensity.

Finally, our findings might shed some light on the "underleverage puzzle" (Graham, 2000). Given the marginal tax rate and the magnitude of the interest tax-shield benefits, nonfinancial firms appear to have less debt financing than typical capital structure models would predict. A number of non-mutually exclusive explanations have been proposed, including financial conservatism (Minton and Wruck, 2001), accessibility to debt financing (Faulkender and Petersen, 2006), sensitivity of default probabilities to leverage (Molina, 2005), and financial constraints (Devos, Dhillon, Jagannathan, and Krishnamurthy, 2012). Our results indicate that directors tend to reduce their assessment of distress costs following their experience suggesting that, on average, directors without firsthand bankruptcy experience could have an inflated assessment of distress costs. If

true and if directors' risk assessments influence their firms' capital structures, this could contribute towards explaining the underleverage puzzle.

2. Empirical framework & data

2.1. *Estimation strategy*

We evaluate the association between director bankruptcy experience and firm risk using a difference-in-differences (DID) framework. The first difference is between treated firms (i.e., firms that share at least one board member with a firm that files for bankruptcy) and control firms (i.e., either firms that are observationally similar to treated firms along size, profitability, and industry dimensions, or all other firms). The second difference is between the period before and the period after bankruptcy of the "interlocked" firm, where we use interlocked here to refer to the bankrupt firm that shares a director with the treated firm at the time of the bankruptcy. Specifically, we estimate the following model:

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankrupty_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}, \quad (1)$$

where y is a measure of risk-taking by firm i operating in industry j, state s, and year t. $InterlockedBankruptcy$ is a dummy variable that takes a value one for treated firms during the years following the bankruptcy filing of an interlocked firm. $X_{i,t}$ captures time-varying, firm-level characteristics that might influence firm risk. δ_i represents firm fixed effects that control for firm-level, time-invariant characteristics. $\delta_{s,t}$ and $\delta_{j,t}$ are state-by-year and three-digit SIC industry-by-year fixed effects that control for time-varying state- and industry-level characteristics, respectively. Following prior literature (e.g, Henderson and Ono, 2008), we identify a firm's state based on the location of its headquarters. We estimate our effects by confining the sample to a window of four years on either side of treatment (i.e., total of nine years including the year of bankruptcy filing), and we double

cluster our standard errors at the firm and year levels.

In our baseline analysis, we include a number of controls that could be important for firms' risk-taking. In particular, we include board size (which could be correlated with both risk-taking and the likelihood of having a director that experiences bankruptcy) and the CEO's ownership share (which might capture management's risk appetite (Faccio, Marchica, and Mura, 2011)). We also include other firm-level variables that might be correlated with the type of directors a company has and its level of risk-taking, like size, market-to-book ratio, ROA, tangibility, and payouts (e.g., Bernile et al., 2017).[4]

The identifying assumption of our estimation is that of parallel trends. That is, to interpret the estimates as due to the bankruptcy of the interlocked firm, one must assume that in the absence of that bankruptcy, the outcome variables for the treated and control firms would trend in a parallel manner after controlling for firm, industry-year, and state-year fixed effects and our other time-varying, firm-level controls.

While this assumption is inherently untestable, we conduct a number of additional tests to bolster its reasonableness. First, we look for differences in the outcome variables between treated and control firms before the bankruptcy filing. Any evidence of differential pretrends would cast doubt on our assumption of parallel trends. Second, we also implement our tests using a matched sample of observationally-similar control firms. Specifically, for every treated firm, we choose up to three control firms that are from the same three-digit SIC industry and size (total assets) decile, and that are closest to the treated firm in terms of size and profitability (*ROA*) in the year immediately prior to bankruptcy. We use the Mahalanobis distance to identify the closest match and match with replacement. Using a matched sample reduces the risk of the parallel trends assumption being

[4]When choosing controls to include in the regression, we face a tradeoff between mitigating the risk of omitted variable bias and the possible introduction of additional bias because of bad controls that are potentially affected by a director's bankruptcy experience. See Angrist and Pischke (2009) pp. 64-68 for more details. Because of this, we attempt to limit our controls to those less likely to be directly affected by a director's bankruptcy experience, like board size. However, because this inherently involves some judgement, we also show robustness of our findings to excluding these controls. See Section 4.4. In unreported tests, we also confirm that our findings are robust to using any subset of the included controls.

violated because of pre-existing differences in the characteristics of treated firms.

Despite these tests, concerns about the parallel trends assumption remain. For example, similarities between firms that share directors could make these firms susceptible to common economic shocks that drive both the bankruptcy at the interlocked firm and changes in risk-taking at the treated firm. While our specification includes state-year and industry-year fixed effects to control for such shocks that operate at the state- and industry-level respectively, we conduct a number of tests to minimize the risk of other economic shocks driving our results. Specifically, we assess whether our results are due to shocks that affect supply-chain networks or economically-connected firms, and we conduct placebo tests with pseudo-treated firms that previously shared a director with a firm that declares bankruptcy to assess whether our results might be driven by the interconnectedness of firms. We also conduct a number of cross-sectional tests that differentiate across bankruptcies based on their cost and the characteristics of the connected director that further help rule out common shocks and aid with the interpretation of our results.

Relatedly, the experiences of other directors could cause a violation of the parallel trends assumption. This might occur if nontreated directors of treated firms were to experience shocks that both systematically coincide with the bankruptcy experiences of treated directors and affect their firms' risk-taking (e.g., because the events either shape directors' risk preferences or distract them from monitoring managers). In such a scenario, treated firms might trend differently after the interlocked bankruptcy because of these confounding experiences of other directors rather than the bankruptcy experience itself. Given this possibility, we later test the robustness of our findings to including a control for events that could either distract or change the risk attitudes of other directors.

While these possibilities each individually or in combination cast doubt on the underlying identification assumption, the culmination of findings below suggest the assumption is reasonable. In particular, we will establish a differential response of treated firms that exhibits no pretrend and coincides with the timing of the director's experience even

when using a matched sample and controlling for a variety of firm- and industry-specific factors that might affect risk-taking. And, we will find little evidence this response is driven by common economic shocks or confounding events among other directors.

2.2. *Data sources & sample construction*

Using Lynn Lopucki Bankruptcy Research Database (BRD), we begin by identifying all large, public-company bankruptcy filings in the United States between 1994-2013.[5] This gives us a total of 745 unique firms that file for bankruptcy.

We next use BoardEx and SEC's EDGAR database to obtain information on the identities and employment histories of the directors serving at each bankrupt firm at the time of filing. BoardEx, marketed by Management Diagnostic Limited, provides information on directors' employment history, including current outside roles. Since BoardEx's coverage is not universal through time and limited before 2002, we are only able to find information on directors for 116 of the 745 bankrupt firms from BoardEx. Because of this, we complement the BoardEx database with information on the directors of bankrupt firms from the last proxy statement (Def 14A form) filed in the three years before bankruptcy filing, as accessed from the EDGAR database, which begins in 1994. Importantly for us, the proxies include information on the identities of the directors, recent employment history, and other concurrent positions. Using the proxy statements, we are able to collect information on directors employed at the time of filing for 240 additional firms. Thus, we have board information on 356 firms (116 from BoardEx and 240 from Def 14) that file for bankruptcy.[6] Of these, we find that 261 firms share a director with another public firm at

[5]Large public company bankruptcy cases are defined as cases where the debtor filed a form 10-K with the Securities Exchange Commission in the three years prior to bankruptcy and reported assets of more than $100 million (measured in 1980 dollars) on the last form 10-K filed before bankruptcy. The Lopucki BRD covers all such filings in the US since 1979 (Lopucki and Doherty, 2007), but we start our sample in 1994, which is when we have data on directors.

[6]We are unable to identify board information on the remaining 359 bankrupt firms because they did not file a Def 14A in the three years before their bankruptcy filing. Instead, these firms filed 14C statements, which occur when firms obtain shareholder approval through written consent in lieu of a meeting. This tends to occur among smaller firms with insiders that control more than 50% of the votes. Hence, the

the time of the bankruptcy filing. This results in a final sample of 718 nonbankrupt firms that share a common director with the 261 firms that file for bankruptcy.

The 261 bankruptcy filings that are associated with at least one treated firm in our sample are staggered over the sample period. Fig. 1 (panel A) plots the year-wise distribution of these bankruptcies, which occur every year between 1994 and 2013 with the highest number in 2001, the year of the dotcom bust. The staggered bankruptcies over the 20-year period helps alleviate the concern that our estimates are driven by a particular economic event. There aren't as many bankruptcies in our sample during the 2007-09 financial crisis because of a decline in the average number of directorships for individual directors in the later years of our sample. This results in a decline in the proportion of bankrupt firms that share a common director with other public firms during the latter half of the sample period. This is evident from panel B where we present the year-wise distribution of all bankruptcies from the Lopucki database between 1994 and 2013. As can be seen, the number of bankruptcies peak during the 2007-09 financial crisis.

We obtain firm financial data from Compustat and exclude financials (SIC 6000 - 6999), utilities (SIC 4900 - 4999), and public administration/non-classifiable firms (SIC 9000 - 9999) from the sample because these firms are typically regulated, which limits the role of their directors in influencing risk-taking. Following previous papers, we also drop observations with missing book assets or book assets less than $10 million (e.g., Leary and Roberts, 2005; Strebulaev and Yang, 2013). Our subsequent findings, however, are robust to not using these sample restrictions; see Section 4.4. Our data on acquisitions come from the Securities Data Company's (SDC) U.S. Mergers and Acquisitions Database, and stock price information, which is used to calculate stock volatility, is obtained from CRSP.

356 firms for which we are able to collect information are relatively larger firms. This selection on size could affect our sample of treated firms if larger firms are more likely to share directors with other firms of different attributes. While it is unclear how such a selection might affect the interpretation of our estimates, our matching on size and other attributes when selecting our controls mitigates such concerns.

2.3. *Sample statistics & quality of match*

We report the industry distribution of the treated and bankrupt firms in Table 1. The treated firms in our sample are spread over 40 of the 48 Fama-French industries with the highest number belonging to Business Services, Communication, and Petroleum & Natural Gas industries. Over 86% of the treated firms belong to a different 48 Fama-French industry than the interlocked bankrupt firm.[7] For most industries represented in the sample, none of the treated firms belong to the same industry as their interlocked bankrupt firm. This reduces the concern that our subsequent estimates are driven by common industry shocks that simultaneously affect both the bankrupt firm and the treated firm.

We next use the aforementioned matching approach to identify the closest three matches for each treated firm based on industry, size, and profitability. This yields 1,799 control firms for the 718 treated firms. The control sample is less than three times the number of treated firms because some firms act as controls for more than one treated firm and because some treated firms lack three other firms from the same industry and size decile. Summary statistics for our risk-taking outcomes for both the matched sample and all all firms are provided in Table 2. All variables are defined in the Appendix.

In Table 3, we assess the similarity of our treated firms to the matched control firms. The variables are grouped into two categories - matching variables (the variables used as covariates for matching) and outcome variables (the risk measures of interest) - and summary stats for treated and control samples are reported for the year immediately prior to treatment. The last column in the table reports the difference between the mean

[7] Our finding that only 14% of the treated firms are from the same industry as the interlocked bankrupt firm is similar to the overall proportion of interlocked Boardex firms that are from the same industry, which is 18%. This proportion is also consistent with prior literature that analyzes the importance of outside directors with industry experience. Using 2-digit SIC codes to classify industries, Wang et al. (2015) find that about 25% of the outside directors previously held a director or executive position at another firm in the same industry. Drobetz et al. (2018) report a similar number, but show that past industry expertise drops to 18% when only counting past director experience. Given that it is less likely for non-outside directors to serve on the board of other firms from the same industry (due to conflict of interest considerations) and for any director to contemporaneously sit on the board of a competitor (because it is prohibited by the Clayton Act of 1914), these findings suggest that the percentage of all directors that contemporaneously sit on two boards in the same industry should be smaller than 18%, consistent with our sample.

characteristics of treated and matched control firms. As expected, we see that the average treated firm in our sample is statistically indistinguishable from an average control firm along the dimensions used to construct the matched sample: $Log(Total\,Assets)$ and ROA. The average treated firm is also similar to the average matched control firm across all but one of the measures of risk-taking, acquisitions. Our treated sample is likely to make more diversifying acquisitions than the average control firm.

A potential concern is that the residual differences between the treated and control firms in their acquisition behavior drive our subsequent estimates. To address this concern, we later conduct a robustness test where we expand our matching criteria to include the outcome variable (including acquisitions) in the year prior to treatment as a matching covariate and repeat our main tests. We do this matching separately for each outcome variable and find our results to be similar to the ones reported here.

3. Director bankruptcy experience and firm risk

We first examine the association between a firm's risk-taking and the occurrence of a bankruptcy at an interlocked firm. If experiencing bankruptcy causes directors to update their beliefs about the likelihood or costs of distress, it could then affect the advice they provide other firms at which they are a director in, and hence, the risk-taking choices at these other interlocked firms. To evaluate this possibility, we estimate the association between bankruptcy of an interlocked firm and *Net Leverage*, *Cash/Assets*, *Equity Issuance*, *Distress*, *Expected Default Frequency*, *Stock Volatility*, *Cash Flow Volatility* and the firm's acquisition behavior. We choose these outcomes to mirror the risk-taking measures analyzed in previous papers (e.g., Gormley and Matsa, 2016).

3.1. *Net leverage, cash holdings, and equity issuance*

We begin by analyzing *Net Leverage,* which is the difference between book value of debt and cash normalized by the lagged book value of total assets. The estimates using the matched control sample are reported in column (1) of Table 4. Relative to the matched control sample, treated firms experience a 4.1 percentage point increase in *Net Leverage* in the years following the bankruptcy of an interlocked firm. This corresponds to about 6.41% of the sample standard deviation.

The relative increase in net leverage of treated firms appears driven by a reduction in cash holdings rather than an increase in debt. In column (2) of Table 4, we analyze *Cash/Assets,* as measured using the cash holdings scaled by lagged value of total assets, and find that cash holdings at the treated firms goes down by 3.4 percentage points relative to the matched control firms following bankruptcy of an interlocked firm. This corresponds to 8.5% of the sample standard deviation. In unreported tests, we repeat our analysis using debt over lagged book value of total assets as the outcome variable and find no significant difference between treated and control firms in the post-bankruptcy period. This indicates that the difference in *Net Leverage* shown in column (1) arises mainly due to difference in cash holding rather a change in debt holdings.

The relative decline in cash holdings appears at least partly driven by a reduction in equity issuances. This is shown in column (3), where we investigate *Equity Issuance*. This variable measures the difference between the cash flow from total equity issuance and repurchases scaled by the lagged book value of total assets. The estimates reported in column (3) show that treated firms issue approximately 7.7 percentage points less equity than the control firms in the years following the bankruptcy of an interlocked firm.

The findings are robust to using all other firms as the control sample, rather than just firms matched on size, profitability, and industry. This is seen in columns (4)-(6) of Table 4, where we repeat our analysis after including all nontreated, nonbankrupt, firms in the control sample. We find similar results for *Cash/Assets* and *Equity Issuance,*

but the estimate for *Net Leverage* is no longer statistically significant. The similarity of findings when using all firms is not surprising given our inclusion of both industry-year and state-year fixed effects, which ensures that we are comparing treated and untreated firms within the same industry and operating in the same state.

Our findings do not reflect the continuation of a pre-existing differential trend between treated and control firms. Rather, treated firms only begin exhibiting greater cash holdings after the bankruptcy of the interlocked firm. This is shown in Fig. 2. In panel A of Fig. 2, we separately plot the average *Cash/Assets* for treated and untreated firms in event time after partialing out firm and year dummies. The horizontal axis represents years relative to the bankruptcy year. As can be seen, the trends for *Cash/Assets* are comparable across the treated and control firms in the years before the bankruptcy filing, but they begin to diverge in the year following bankruptcy. In panel B, we plot the coefficient estimates from an estimation of Equation (1) that includes a set of dummy variables that identify years relative to the year of bankruptcy. The estimation uses a fully-saturated model where we set the base year as the year immediately before the bankruptcy by omitting the dummy variable for that year, and the vertical bars represent the confidence intervals at 90% level. We find that none of the coefficient estimates for the pre-bankruptcy period are statistically significant and that the decrease in *Cash/Assets* begins only in the year after bankruptcy of an interlocked firm and continues to grow in the years afterward.

The lack of a pretrend provide some assurance that the endogenous matching of directors to firms is not driving our results. Even though the interlocked directors were, on average, sitting on the board of the treated firms for over six years prior to the bankruptcy filing of their other firm, we find no significant differences in trends in cash holdings between treated and control firms in the period before treatment. Instead, we only detect a decline in cash at treated firms following the directors' bankruptcy experiences.

3.2. *Volatility and distress*

We next analyze broader measures of firm-level risk-taking and whether firms move closer to bankruptcy. If the relative reduction in cash holdings and equity issuances of treated firms are increasing firm risk, then we should be able to detect it using measures of overall firm risk, such as distress, distance to default, and volatility. The broader measures of risk-taking would also capture potential changes in other nonfinancial, risk-related choices of firms. Table 5 reports our findings.

Regardless of which risk measure we use, we find evidence of a relative increase in risk for treated firms. In column (1), we analyze *Distress*, a dummy variable that equals one when firms exit our sample because of bankruptcy, liquidation, or other performance-related reasons [as defined in Boualam, Gomes, and Ward (2015); Gormley and Matsa (2016)], and find that the likelihood of experiencing distress for treated firms increases by 1.1 percentage points in the years following bankruptcy relative to the control group of firms. Column (2) reports results on *Expected Default Frequency*, which measures the likelihood of default based on Merton's distance to default measure [Bharath and Shumway (2008)]. Relative to the matched control firms, *Expected Default Frequency* increases by 1.6 percentage points for treated firms following bankruptcy of an interlocked firm. Combined, our findings for *Distress* and *Expected Default Frequency* indicate that treated firms move closer to bankruptcy. In column (3), we test for changes in *Stock volatility*, as measured using the standard deviation of daily stock returns over the previous 250 trading days. The estimates show that *Stock Volatility* for treated firms increases by 0.2 percentage points as compared to that for control firms in the years following the bankruptcy of an interlocked firm. This corresponds to about 6.7% of the sample standard deviation.

Because the relative increases in *Distress*, *Expected Default Frequency*, and *Stock Volatility* could be driven by both the increase in net leverage and increases in operational risk, we next analyze *Cash Flow Volatility*, which is a measure of operational risk used in Gormley and Matsa (2016). *Cash Flow Volatility* is defined as the annual standard deviation of the

ratio of quarterly cash flow to book value of total assets. The reported estimate shows that *Cash Flow Volatility* increases by 0.9 percentage points relative to the control group following the bankruptcy, suggesting that the observed relative increase in risk among treated firms is not solely driven by the increase in net leverage.

Similar to before, our findings are robust to using all other firms as the control sample. This is shown in columns (5)-(8) of Table 5, where we repeat our analysis after including all nontreated, nonbankrupt firms in the control sample.

Again, we find no evidence of a differential pre-trend among treated firms. An example of this is shown in Fig. 3. In panel A, we find similar pre-bankruptcy trends for the likelihood of distress for treated and control firms, and in panel B, we find that the corresponding *Interlocked Bankruptcy* estimates for the pre-bankruptcy period are not statistically different from zero. Rather, the likelihood of distress for treated firms only increases beginning from one year following the bankruptcy of an interlocked firm.[8]

3.3. *Firm acquisitions*

In our next set of tests, we examine if a director's bankruptcy experience is associated with a change in corporate acquisition activity. A large literature in finance identifies acquisitions, and specifically diversifying acquisitions, as a way to reduce firm risk (e.g., Amihud and Lev, 1981; May, 1995; Cai and Vijh, 2007; Acharya et al., 2011; Gormley and Matsa, 2011, 2016). If bankruptcy of an interlocked firm affects the firm's attitude towards risk, then it could also affect its likelihood of engaging in acquisitions.

To evaluate acquisitions, we obtain data from the SDC Mergers and Acquisitions database. Following previous research, we exclude acquisitions that meet any of the following five criteria: (1) the ratio of the deal size to market value of the acquirer's assets is less

[8]While our selection of the treated and control firms require them to be publicly-listed in the year before bankruptcy (and hence, not in distress according to our measure *Distress*), there can be potential differences in the distress likelihood in the prior years because some firms in our sample switch their listing status. For example, a firm might be delisted for distress-related reasons but then be relisted in a later year after it recovers. Hence, the outcome variable, *Distress*, isn't always zero in the pre-period.

than 1%, (2) the acquiring firm controls more than 50% of the target prior to the announcement date or less than 100% after the acquisition was completed, (3) the ultimate parent of the acquirer and the target are the same (i.e., consolidations within holding companies or buybacks), (4) either the acquirer or the target is a financial firm, and (5) the deal was not completed within one thousand days of the announcement date. We construct three variables to measure a firm's acquisition activity including number of acquisitions, an indicator variable for whether or not the firm engages in any acquisition in a given year, and number of diversifying acquisitions. For a target firm, SDC lists a primary four-digit SIC code and up to nine other four-digit SIC codes that represent "any small sidelines the company is involved in" (Thomson Financial, 1999). An acquisition is defined as diversifying if the acquirer's primary SIC code does not match any of the SIC codes of the target. Our estimates for acquisitions are reported in Table 6.

We find that firms undertake fewer acquisitions following the bankruptcy of an interlocked firm. Relative to the matched control firms, treated firms undertake 0.152 fewer acquisitions per year following the bankruptcy of an interlocked firm (Table 6, column 1), which corresponds to about 13% of the sample standard deviation. In column (2), we analyze *Any Acquisition Indicator,* a dummy variable that identifies years in which a firm undertakes at least one acquisition. We find that treated firms are 2.9 percentage points less likely to make an acquisition in a year following bankruptcy of interlocked firms relative to the control firms. Finally, we analyze the *Number of Diversifying Acquisitions* in column (3) and find that they too decline. On average, treated firms undertake 0.05 less diversifying acquisitions per year after the bankruptcy of an interlocked firm relative to the control firms. This estimate corresponds to about 6.6% of the sample standard deviation. We repeat our analysis after including all nontreated, nonbankrupt firms in the control sample in columns (4) through (6) and find similar results.

We again find no significant difference in trends in the acquisition behavior between treated and control firms before treatment. This is shown in Fig. 4. The plots show that the

number of diversifying acquisitions only begins declining significantly for treated firms about one to two years following the bankruptcy of an interlocked firm.

4. Interpretation and placebo tests

In this section, we conduct a number of robustness tests. We begin by evaluating whether our findings are driven by common shocks to economically-linked firms rather than the bankruptcy experience of a firm's directors and whether our findings are driven by confounding events for other directors. We also conduct placebo tests to further rule out the possibility of our estimates being driven by common shocks. We then test the robustness of our findings to our choice of controls and to how we select our sample, and we assess whether our findings might be driven by just a handful of directors.

4.1. *Controlling for other economic linkages*

Although over 86% of our treated firms do not belong to the same industry as their interlocked bankrupt firm, the treated firms could potentially be linked through supply chain networks. If so, then our findings could be driven by common shocks to firms with such links rather than anything related to director experience.

To assess this possibility, we first identify supply-chain relations between the industries of the treated and bankrupt firms. Our approach to identifying related industries uses the Benchmark Input-Output (I-O) tables published every five years by the Bureau of Economic Analysis (BEA) and follows Dass et al. (2014). Specifically, for each pair of distinct I-O industries, industry i and industry j, where industry i (j) is the industry of the treated (bankrupt) firm, we measure the economic importance of industry j to industry i through being either a customer or a supplier by calculating the percentage output (input) of industry i that is used by (comes from) industry j. We classify industry j as "related" to industry i via the supply chain if the sum of of these linkages exceed 0.1%. While Dass

et al. (2014) define firms to be related if the sum exceeds either 1%, 5% or 10%, we adopt a more conservative cutoff to avoid any semblance of linkage.

We then repeat our tests within the subsample of treated firms that are unrelated to the bankrupt firm through supply-chain networks. This leaves us with 520 treated firms out of 718. Panel A of Table 7 reports results for this subsample analysis. For brevity, we do not report coefficients on our other control variables in Table 7 and later tables. We also only report point estimates for *Cash/Assets*, *Distress*, and *Number of Diversifying Acquisitions*, but the findings are similar for our other risk outcomes.

Our findings do not appear driven by common shocks to firms that share a customer-supplier link. *Cash/Assets* for treated firms decreases by 5.1 percentage points following bankruptcy of an interlocked firm even after excluding treated firms with customer-supplier linkages (Table 7, column 1). Likewise, we continue to find a relative increase in *Distress* (column 2) and decrease in diversifying acquisitions (column 3).

Another potential concern with our results is that they could be due to common shocks if the treated and interlocked bankrupt firms have similar product portfolios, an economic linkage potentially not captured by their SIC code classification or a customer-supplier link. To assess this possibility, in panel B of Table 7, we repeat our tests differentiating treated firms based on the extent to which their product portfolio is similar to that of the interlocked bankrupt firm, as measured using the text-based measures of product similarities from Fresard et al. (2019). We do this by replacing *InterlockedBankruptcy* with two interaction terms *InterlockedBankruptcy* $\times$ *Above* and *InterlockedBankruptcy* $\times$ *Below*, where *Above* (*Below*) is a dummy variable that identifies treated firms with above (below) median level of product similarity with their interlocked bankrupt firm.

Our results indicate that the level of product similarity does not drive our estimates. Treated firms with both above and below median level of product similarity experience a decrease in cash holding and an increase in distress risk following bankruptcy of an interlocked firm. As reported in the last row of Table 7, the coefficient estimates on the

two interaction terms are not significantly different from one another.

4.2. *Controlling for events among other directors*

Another potential concern with our results is that they could be confounded by changes in the advice and monitoring provided by the other directors on the board. This might happen if the other directors of a treated firm learn from or are distracted by events that happen in other firms at which they are directors in and these events coincide with the bankruptcy events we use for our identification.

To assess this possibility, we begin by constructing a dummy variable, *Director Event*, that identifies instances when other directors experience potentially confounding events. Specifically, we first identify the other directors in our treated (and control) firms and the other directorships they hold. To keep the data collection manageable, we confine the control firms to those covered by either Boardex or ISS and the outside directorships to those covered by these two databases. While the former restriction results in a smaller control sample for these tests, our baseline estimates continue to hold in this smaller sample [see Table 8, columns 1-3]. We then follow Masulis and Zhang (2019) to identify treated and control firms whose directors experience any of the following coinciding events at their other interlocked firms: CEO turnover, declining firm performance, M&A deals and divestitures, financial misconduct, and financial distress. When one or more of a firm's directors experiences one of these events, *Director Event* is set to one; otherwise, it is zero.

Our findings do not appear driven by confounding events of other directors. We illustrate this using two tests. First, we test whether *Director Event* is correlated with our indicator for interlocked bankruptcies. We find the correlation to be a statistically insignificant 0.065, indicating that these potentially confounding events do not systematically occur only among the treated firms. Second, we repeat our main tests after including *Director Event* as an additional control and present the results in columns (4)-(6) of Table 8. As can be seen, our results are robust to controlling for these confounding events and

similar to our baseline estimates in columns (1)-(3). In additional unreported tests, we replace *Director Event* with three separate director event variables, *Distress*, *M&A* and *Other,* and repeat our tests. We find our results are robust to these specifications as well.[9]

4.3. *Placebo tests*

Another potential concern with the interpretation of our results is that firms that share a common director (i.e., the bankrupt and the treated firm) could have other unobserved similarities that make them susceptible to correlated shocks.

In Table 9, we conduct a pair of placebo tests to assess this possibility. In these tests, we identify firms that shared a common director with a firm before it declares bankruptcy but not during the time of bankruptcy. That is, we identify instances where a common director either leaves the bankrupt firm or the connected firm at least a year before the bankruptcy event. Doing this, we construct a sample of pseudo-treated firms that shared a common director with a bankrupt firm recently, but not during the bankruptcy event. If our prior results are due to some unobserved similarity across firms with common directors, then we should observe similar results in this pseudo-treated sample. On the other hand, if our results are due to the director's firsthand bankruptcy experience and ongoing directorship at the connected firm, then we should not expect to find any significant change in risk-taking among these pseudo-treated firms.

Bolstering the possibility that our earlier findings are driven by director experience rather than correlated shocks, we find no significant change in risk-taking among the pseudo-treated firms. This is shown in Table 9. In the first three columns of Table 9, we identify pseudo-treated firms as those with a director that departs from the board of a bankrupt firm *before* it declares bankruptcy, while in columns (4)-(6), we identify pseudo-treated firms as firms where the common director departed just *before* the bankruptcy at

[9]The evidence in Table 8 that *Director Event* has little association with firm-level outcomes does not conflict with the findings of Masulis and Zhang (2019), which used a larger sample of such events and instead focused on events affecting independent directors, particularly those in key monitoring roles.

the *interlocked* firm. We are able to identify 521 pseudo-treated firms for the first set of placebo tests and 311 pseudo-treated firms for the second test. The results presented in Table 9 show no significant change in risk-taking in either set of pseudo-treated firms.[10]

We also find that our estimates are driven by directors that remain with the treated firm after bankruptcy of an interlocked firm and not by directors that immediately leave. Appendix Table A1 reports estimates of this analysis. While this test is admittedly low powered (as most connected directors do not immediately depart the treated firm), we find that our effects are concentrated in the subsample wherein the director stays, providing additional evidence that common shocks are not driving our results.

Overall, these results offer assurance that our effects are unlikely to be driven by common shocks to both the treated and the interlocked bankrupt firms.

4.4. *Time varying covariates, outliers, and other robustness tests*

In our baseline analysis, we include time-varying firm characteristics, like board size, as controls because they could be correlated with both risk-taking behaviors and the likelihood of having a director experience bankruptcy. Our findings, however, are robust to excluding these controls. An example of this is shown in Appendix Table A2.

Another potential concern with our analysis is the role of outliers, particularly for financial ratios. To assess whether outliers might drive our findings, we first repeat our tests after winsorizing financial ratios and other non-indicator outcome variables and find our results are robust (see Appendix Table A3).

To further evaluate the role of outliers and to assess whether a small number of directors might drive our findings, in Appendix Tables A4 and A5, we next repeat our baseline tests after excluding one year of bankruptcy events at a time or one 2-digit SIC industry at a time and report the *t*-statistics for the coefficient on *Interlocked Bankruptcy* for the

[10]We also find similar null results when we append the two placebo samples and rerun the analysis including all pseudo-treated firms and their matched control firms.

main outcome variables. As can be seen, we find that all the *t*-statistics are of the correct sign and are mostly greater than two in absolute magnitude. These findings offer further support that outliers are not unduly influencing our estimates. These latter findings also indicate that our findings are unlikely driven by just one or two directors

Finally, our findings are robust to our sampling choices. In our baseline tests, we exclude financial and utility firms because their capital structures, acquisition activity, and other risk-related choices are often regulated, and hence, it isn't clear that we should expect directors' bankruptcy experience to be as important at such firms. Notwithstanding this, in Appendix Table A6 we repeat our baseline tests after including financial and utility firms, which adds 95 additional treated firms to our sample. As shown, our results are robust to their inclusion. Likewise, our findings are also robust to including firms with book assets less than $10 million (see Appendix Table A7).

5. Cross-sectional heterogeneity

The results so far indicate that firms increase risk following the bankruptcy of an interlocked firm. If these findings are driven by the bankruptcy experience of firms' directors, this would suggest that, on average, directors reduce their estimate of bankruptcy costs following firsthand experience with bankruptcy and that this affects the advice they provide other firms. To assess this possibility, we now analyze the cross-sectional heterogeneity in our findings to see if they vary as a function of how costly the bankruptcy experience was and the type of director experiencing bankruptcy. Directors might be more likely to lower their views regarding distress costs following less costly bankruptcies, and firms might be more responsive to a shift in the advice of influential directors.

5.1. *Heterogeneity by type of bankruptcy experience*

To test for cross-sectional variation as a function of bankruptcy costs, we modify our empirical specification into the following form:

$$y_{i,j,s,t} = \beta_1 \times InterlockedBankruptcy_{i,t} \times Above + \beta_2 \times InterlockedBankruptcy_{i,t} \times Below + \Gamma X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}, \quad (2)$$

where *Above* (*Below*) is a dummy variable that takes a value of one if the cost of bankruptcy of the interlocked firm is above (below) the sample median. We use a dummy variable instead of a continuous variable to conduct our cross-sectional tests for two reasons. First, the dummy variable specification is easier to interpret and less subject to potential outliers in the variable being used to construct the interaction. Second, this approach avoids assuming that the relation between *Interlocked Bankruptcy* and the outcome variable changes in a linear manner with the cross-sectional factor. In later tests, we provide evidence that these cross-sectional associations appear to be nonlinear.

Bankruptcy costs include both direct and indirect costs. The former include the out-of-pocket expenses related to the bankruptcy proceedings including filing, legal, and professional fees. The latter include lost profits from foregone sales, the costs of asset sales at prices below the best use value (Eckbo and Thorburn, 2008), and distortions in investment and financing policies resulting from the bankruptcy process.

We use three different measures of bankruptcy costs that reflect both direct and indirect costs - *Professional fees* paid as part of the bankruptcy process, the number of days spent in bankruptcy, and the stock price reaction during the three-day window around the bankruptcy filing date. *Professional fees* are a measure of the direct costs of bankruptcy, and in the regressions employing this as a measure of bankruptcy cost, *Above* identifies bankruptcies with an above median level of fees. Both direct and indirect bankruptcy costs increase with the time spent in bankruptcy (e.g., Altman, 1984; Dou et al., 2019). Hence,

in regressions where we use *Time in bankruptcy* as our measure of bankruptcy costs, we use *Above* to identify instances when the time in bankruptcy is above the sample median. Since the stock price reaction upon bankruptcy announcement should capture the total value impact of the bankruptcy announcement for the firm's shareholders, *Above* in estimations that use stock price reactions identifies instances when the stock returns around the bankruptcy announcement are below the sample median.

The observed increase in risk is concentrated among firms where their director experienced a less costly bankruptcy. This is seen in Table 10. Columns (1)-(3) report the results of estimating equation (2) with *Above* and *Below* defined based on *Professional fees*. Doing so, we find that the decrease in cash, increase in distress events, and reduction in diversifying acquisitions occurs among treated firms only when the interlocked firm spends a below median amount on fees. Repeating our tests with *Time in bankruptcy* as our measure for bankruptcy costs, we find that the differential response is also confined to treated firms that are interlocked with bankrupt firms that spend a below median amount of time in bankruptcy (columns 4-6). Using the stock return around bankruptcy filing as our measure of bankruptcy costs, we find that the increase in risk occurs only among the treated firms interlocked with a firm experiencing an above-median stock price reaction following the bankruptcy announcement (columns 7-9). The difference in point estimates across bankruptcy types is statistically significant in four of the nine specifications, consistent with increases in risk being larger following less costly bankruptcies.

We further examine the potential importance of bankruptcy costs by splitting the sample into quartiles based on bankruptcy costs instead of splitting the sample into two around the median. Appendix Table A8 reports results for this analysis and shows that our results are nonlinear and largely concentrated among the least costly bankruptcies; i.e., those that belong to the lowest quartile in terms of bankruptcy costs.

Overall, these cross-sectional findings support the possibility that directors update their beliefs about bankruptcy costs downwards following less costly bankruptcy exper-

iences. These results further suggest that directors update their expectations of the costs associated with bankruptcy and not of the probability of bankruptcy itself. Otherwise one would expect to find some effects even for relatively more costly bankruptcies. This is consistent with directors finding it difficult to evaluate costs/parameters associated with left-tail events like bankruptcy but not the probability of the event.

These results also provide further evidence that common shocks to a directors' firms are unlikely to explain our findings. If driven by common shocks, one would expect greater effects for more costly bankruptcies as these likely occur following larger shocks.

5.2. *Bankruptcy and directors' career outcomes*

Prior literature argues that directors suffer negative career outcomes, as captured by a loss in directorships at other firms, when their firms file for bankruptcy (Gilson, 1990). Our results so far indicate that treated firms actually increase risk following bankruptcy of an interlocked firm, especially when the cost of bankruptcy is low. It would be counterintuitive, however, for interlocked directors to encourage greater risk-taking at their other firms when the initial bankruptcy adversely affects their career. One possibility that might help reconcile these two sets of findings is if the adverse career outcomes largely happen only after costly bankruptcies. We now test for this possibility using the number of directorships as our measure of directors' career outcomes.

In Table 11, our sample includes all the directors that experience bankruptcy, and the dependent variable is their total number of directorships in firms other than the bankrupt firm. Restricting the sample to the year before and the year after the bankruptcy, we find evidence that is consistent with the existing literature. In particular, directors lose, on average, 9.9% of their directorships in the year following bankruptcy relative to the mean number of directorships in the year before bankruptcy.

In columns (2) through (4), we differentiate the bankruptcies based on our proxies for the cost of bankruptcy. We find strong evidence of a decline in directorships among

the more expensive bankruptcies; i.e., the decline is significant if the firm spends above median amount in professional fees, spends more time in bankruptcy, or if the firm experiences a below-median stock price reaction during the bankruptcy filing announcement. However, we find no evidence that less costly bankruptcies are associated with a decline in directorships. Although the coefficient on more costly bankruptcies is an order of magnitude bigger than that on less costly bankruptcies in all columns, due to the noise in our estimates, the coefficients are not statistically different from one another.

The lack of evidence of a career penalty following a less expensive bankruptcy helps rationalize the increase in risk that we observe in the treated firms.

5.3. *Heterogeneity by type of director*

In this section, we assess whether the characteristics of the director experiencing bankruptcy are associated with the observed increase in risk-taking at treated firms. To do this, we estimate triple-interactions similar to what was done in Section 5.1.

In the first set of tests, we classify a director as either independent, executive (i.e., a non-independent director that currently sits on the management team of the firm), or gray (i.e., a non-independent director with some other connection to the firm) and test to see which group is associated with the increased risk-taking in the treated firms. These three categories are mutually exclusive and span the set of possible classifications.

This comparison helps shed light on the potential mechanism by which a director's experience matters: advice versus monitoring. In particular, if the observed increase in risk-taking is driven by directors changing the advice they provide, then we might expect to observe the increase to be concentrated among treated firms where the director experiencing bankruptcy is non-independent (i.e., gray or executive directors). Non-independent directors are more likely to be connected to management and more likely to serve in an advisory role (Adams and Ferreira, 2007; Adams, 2009). But, if the observed increase in risk-taking is driven by the director being distracted and engaging in less monitoring

of the treated firm's management, then we might expect the increase in risk to be concentrated among firms where it is an independent director that experiences bankruptcy. Independent directors are generally thought to perform a stronger monitoring role (e.g., Fama and Jensen, 1983; Adams and Ferreira, 2007).

This heterogeneity also allows us to examine whether the expected costs of distress experienced by executives are different from that experienced by directors. If the personal costs of distress are higher for executives than directors, then affected directors that both sit on the board and serve on the executive team at the treated firm (i.e., executive directors) might be less likely to tolerate an increase in risk at the treated firm regardless of their recent bankruptcy experience. Distress at the treated firm would likely be more costly for directors that also serve as part of the executive team.

Consistent with a shift in the advice provided by directors and costs of distress being higher for executives, we find evidence that the observed increase in risk is concentrated among treated firms where it is a gray director that experiences bankruptcy. This is seen in Table 12. We find a decrease in cash, increase in distress events, and fewer diversifying acquisitions among treated firms where a gray director experiences bankruptcy at an interlocked firm. We do not, however, find significant evidence of such shifts in risk-taking when independent or executive directors experience bankruptcy.[11]

The importance of gray directors might reflect their additional connections to a firm, which could lead managers to value their advice more than that of other directors. While Boardex and firm's proxy filings typically do not provide information on the nature of gray directors, Institutional Shareholder Services (ISS) does provide a breakdown on why it classifies a director as gray. Of the directors classified as gray by both Boardex and ISS between 1993 and 2013, ISS reports that 37% had a professional connection to the firm

[11] Interestingly, we do find weak evidence of an increase in diversifying acquisitions when it is an independent director that experiences bankruptcy. See column (3) of Table 12. This could be consistent with the bankruptcy event reducing monitoring by independent directors and managers having an underlying incentive to undertake diversifying acquisitions (absent monitoring). We further explore the potential importance of a shift in monitoring in columns (1)-(3) of Table 13.

(e.g., the director provides or works for a firm that provides legal, consulting, or financial services to the company), 36% were former employees, 19% were relatives of someone on the executive team, 16% worked for a firm with some business connection (e.g., a customer or supplier of the company), 4% were designated directors (e.g., a director appointed by a significant shareholder), and 3% were interlocking directors. (The number adds up to more than 100% as directors can be classified as gray for multiple reasons.)[12]

We also collect data on the biography of all the gray interlocked directors in the treated firms and find that many of them have a background in private equity (13.1%), manufacturing (10.3%), venture capital (8.6%), and consulting (7.5%). These backgrounds might also help explain gray directors' influence. It is possible that CEOs and other directors give greater weight to the views of directors with such backgrounds, particularly those in finance, when deliberating choices involving financing and risk.

Contrary to a potential monitoring explanation, our findings are not concentrated among directors that serve on key monitoring committees. This is shown in columns (1)-(3) of Table 13 where we differentiate directors based on their committee membership. Faleye et al. (2011) identify the compensation, nominating, and audit committees as constituting the monitoring committees. Thus, it is reasonable to assume that the primary responsibility of the members of these committees is monitoring management while that of the non-members is advising. We find that the increase in risk-taking only occurs when the interlocked director is not a member of the monitoring committees. Specifically, we find a large decrease in cash holding (column 1) and an increase in distress risk (column 2) when the interlocked director is not a member of the monitoring committees.

Our earlier findings also bolster the argument that a shift in advice, rather than mon-

[12]These statistics also likely understate the number of gray directors that are former employees. After manually collecting data on directors' careers for S&P 500 firms, Houston, Lee, and Shan (2019) find that ISS often misses cases where a gray director was a former employee. They also find that 63.6% of these former employee directors were the former CEO. Moreover, they find that 86.29% of former employee directors went straight from serving as an insider to being a gray director, and that they worked with the current CEO in the C-suite for 2.77 years on average before retiring. In other words, these particular directors are very likely to serve a strong advisory role and have influence over the CEO.

itoring, is the more plausible mechanism. Given managers' underlying preference to take on too little risk (e.g., see Jensen and Meckling, 1976; Amihud and Lev, 1981; Smith and Stulz, 1985; Holmstrom, 1999; Parrino et al., 2005; Coles et al., 2006; Gormley and Matsa, 2016), it is unclear why a reduction in monitoring would result in an increase in risk-taking. Further, if distracted monitoring drives the results, one would expect to find larger effects among longer, more costly bankruptcies where the potential for distraction is larger, but we find the opposite (see Section 5.1). We also find that the interlocked director in the treated firm has been on the board for an average of 6 years (median 5 years), and this experience likely ensures that she has a significant voice on the board.

To further bolster our interpretation that a shift in advice drives our results, we examine the heterogeneity of our effects by differentiating directors based on their likely influence over the board. In columns (4) - (6) of Table 13, we differentiate directors based on the size of their social network and find that the increase in risk is confined to instances when the interlocked director has an above-median-sized social network.[13] It is likely that directors with a larger social network have greater influence over the board as compared to directors with a smaller social network. In columns (7) - (9), we differentiate firms that share one director with the bankrupt firm and those that share more than one director. Within Boardex, 7.2% of all interlocked firms share more than one director, and this occurs in 83 of our 718 treated firms, which includes both Boardex and non-Boardex firms. We find that our point estimates are larger in the subsample with multiple common directors. To the extent multiple directors with similar experiences are likely to exert a greater influence on the board than a single director, this again is consistent with the change in risk-taking being driven by directors' experience and advisory capacity.[14]

Directors are also more likely to influence others if they attend the board meetings regularly. We examine the attendance behavior of directors who experience bankruptcy

[13]Director network size is provided by BoardEx and represents the number of overlaps for an individual through employment, education, and other activities.

[14]Our main findings are also robust to dropping these 83 treated firms that share more than one director with the bankrupt firm. An example of this is provided in Appendix Table A9.

in our sample and find that only 3.75% of these directors attend less than 75% of the meetings during the bankruptcy year and only 3.02% directors attend less than 75% meetings during the five years following bankruptcy experience. These statistics suggest that directors in our sample attend meetings regularly such that they should be able to influence others. We also examine the heterogeneity in our findings based on whether or not the director experiencing bankruptcy attends at least 75% meetings and report the results in Table 14. Our findings are concentrated on those who attend at least 75% meetings. However, a caveat for this finding is that it could be an artifact of the low number of observations associated with directors who attend less than 75% of meetings.

Overall, these results suggest that the shift in advice provided by directors likely drive the change in risk that we detect following director bankruptcy experiences.

5.4. *Other robustness tests*

The residual differences between the treated and control firms in their pre-bankruptcy acquisition behavior does not drive our findings (see Table 3). This is shown in Appendix Table A10, where we expand our matching criteria to include the outcome variable in year t - 1 as a matching covariate and repeat our tests. We do not simultaneously include all the outcome variables as covariates in our matching procedure because having too many matching covariates reduces the quality of the match.

Finally, our lack of findings for prolonged and most costly bankruptcies is not driven by when we define treatment as beginning. In Appendix Table A11, we redefine treatment as corresponding to bankruptcy resolution of an interlocked firm as opposed to bankruptcy filing and find that our results are robust to this alternate definition. We also find similar heterogeneity in our effects based on bankruptcy costs, especially as measured by time spent in bankruptcy. This helps assuage the concern that our baseline definition is not able to capture the effects for longer bankruptcies because we don't allow for sufficient time for the directors to update their beliefs from their experience.

6. Conclusion

Firms often state that directors' experience plays an important role in their effectiveness as a board member and the quality of their advice. Because of this, firms consider directors' personal experiences a key factor in their decision of which directors to hire. This focus on firsthand experience when hiring directors is puzzling given that corporate events are prominently covered in the press and there is ample opportunity for firms and directors to learn from their peers. In other words, what makes the firsthand experience of directors and the advice they provide special? In this paper, we evaluate the potential importance of a director's personal experience by analyzing how corporate policies shift when one of a firms' directors experiences corporate bankruptcy at another firm.

Our findings illustrate that individual directors' personal experiences do seem to matter for a wide-range of corporate policy choices. In particular, we find that risk-taking, as measured using leverage, cash holdings, distress events, volatility, and acquisition choices, increases in firms following the bankruptcy experience of a director. This increase occurs when directors participate in less expensive bankruptcies but not when they participate in expensive, lengthy bankruptcies that tend to adversely affect their future careers as a director. These findings are consistent with personal experiences shaping directors' risk attitudes (e.g. Choi, Laibson, Madrian, and Metrick, 2009; Malmendier and Nagel, 2011; Malmendier et al., 2011; Cameron and Shah, 2015; Callen, Isaqzadeh, Long, and Sprenger, 2014; Koudijs and Voth, 2016; Bernile et al., 2017; Knupfer, Rantapuska, and Sarvimaki, 2017; Kalda, 2020) and with individual director risk assessments influencing many corporate policies.

We further find that the change in risk-taking occurs if the primary role of the interlocked director is to provide advice and in instances when the director is likely to exert a greater influence. Our findings also survive a battery of robustness tests and do not appear to be driven by a common shock to the interlocked firms or confounding events for other directors. Overall, our results suggest that directors actively learn from the bank-

ruptcy experience and that, on average, they reduce their assessment of distress costs and change the advice they provide other firms that they are directors in.

Our findings help explain why firms focus on hiring directors with experiences they believe will contribute to boardroom deliberations. Individuals' traits, including risk attitudes, are not time-invariant or solely determined by early-life events and fixed characteristics like gender. Instead, they are partly shaped by personal experiences, and because of this, it is important for firms to hire directors with experiences that yield a risk tolerance the firm views as appropriate. Additionally, our findings indicate that individual directors, not just board-level characteristics (like size, diversity, and independence), matter for corporate outcomes. Our findings also highlight how some experiences, like bankruptcy, can have wide-ranging implications. While past papers provide evidence that directors with experience in firing CEOs or completing acquisitions influencing similar such decisions at other firms in which they serve as a director, our findings show that experiences that influence risk attitudes can affect policy choices in many dimensions.

Another implication of our findings is that directors play an important advisory role. A likely reason boards play a special role in conveying advice is that they are the designated gatekeepers for many company decisions. Diversified shareholders often lack the motive or information necessary to monitor or advise managers, and because of this, board members are elected to do so on their behalf. Managers must run their financing and investment decisions by the board, and hence, the board's input and advice is likely to be influential. Our findings also bolster evidence from the psychology literature that personal experiences influence decisions even when descriptive information is available from other sources (e.g., Weber, Bockenholt, Hilton, and Wallace, 1993; Hertwig, Barron, Weber, and Erev, 2004). Individuals' reliance on personal experience and their ability to learn from them also helps explain why boards and their culmination of experiences act a special source of advice. Even if information about bankruptcy costs is readily available to firms from other sources, it is not a perfect substitute for firsthand experience.

Finally, our findings might offer an additional explanation for the long standing puzzle of why firms appear underleveraged. Given that bankruptcies are relatively uncommon events, the average director is unlikely to have firsthand experience with corporate bankruptcy. If the lack of such experience leads directors to overestimate bankruptcy costs, firms could take on too little debt relative to the available tax benefits.

Appendix: Variable definitions

- *Above*: Dummy variable that takes value of 1 for treated firms where the heterogeneity measure takes a value greater than median value.

- *Any Acquisition Indicator*: Dummy variable that takes a value of 1 during the years when the firm makes at least one acquisition.

- *Below*: Dummy variable that takes value of 1 for treated firms where the heterogeneity measure takes a value lower than median value.

- *Board Size*: Total number of members on the board.

- *Cash/Assets*: Cash holdings of the firm scaled by lagged value of total assets *(Compustat items: $che/l1.at$).*

- *Cash Flow Volatility*: Calculated from Compustat using the annual standard deviation of firms' quarterly ratio of cash flow to assets *(Compustat items: $(oiadp - accruals)/at$, where $accruals = (act - l1.act) - (che - l1.che) - (lct - l1.lct) - (dlc - l1.dlc) - dp$).*

- *CEO Ownership*: Fraction of total shares held by the CEO.

- *Distress*: Dummy variable that takes value of 1 if a firm's stock gets delisted due to performance-related reasons in a given year (i.e., during the years when *CRSP item: dlstcd* takes a value between 400 & 700).

- *Director Network Size*: Network size computed by BoardEx as the number of overlaps for an individual through employment, education, and other activities.

- *Dividend Indicator*: Dummy variable that takes value of 1 for firm-years where dividend paid is greater than zero.

- *Equity Issuance*: Difference between equity issuance minus equity repurchases scaled by lagged value of total assets *(Compustat items: $(sstk - prstkc)/l1.at$).*

- *Expected Default Frequency (EDF)*: Measures the probability that the firm will default in that year based on distance to default (DD), i.e. $EDF = N(-DD)$ where N refers to the standard normal distribution. We follow Bharath and Shumway (2008) to create a measure for DD as $DD = \frac{ln[\frac{E+F}{F}]+(r_{i,t-1}-0.5\sigma_V^2)T}{\sigma_V\sqrt{T}}$ where E is the market value of equity, F book value of debt, r stock return, and $\sigma_V = \frac{E}{E+F}\sigma_E + \frac{F}{E+F}(0.05 + 0.25 * \sigma_E)$. See Section 2.3 in Bharath and Shumway (2008) for details.

- *Institutional shareholding*: Fraction of total shares held by institutions.

- *Interlocked Bankruptcy*: Dummy variable that takes a value of 1 for firms that share at least one director with another firm that files for bankruptcy during the years following that interlocked bankruptcy filing.

- *Log(total assets)*: Natural logarithm of total assets *(Compustat items: $ln(at)$).*

- *MTB*: The ratio of market value and book value of assets.

- *Net Leverage*: Total debt less cash holdings scaled by lagged value of total assets *(Compustat items: $(dlc + dltt - che)/l1.at$).*

- *Number of Acquisitions*: Total number of completed acquisitions in a firm year.

- *Number of Diversifying Acquisitions*: Total number of completed diversifying acquisitions in a firm year.. Diversifying acquisitions are described in Section 3.3.

- *Post Bankruptcy*: Dummy variable that takes a value of one following bankruptcy.

- *ROA*: Earnings before interest, taxes, depreciation and amortization (EBITDA) scaled by lagged value of total assets *(Compustat items: $oibdp/l1.at$).*

- *Stock Volatility*: Standard deviation of daily stock returns calculated at yearly level.

- *Tangibility*: Fraction of tangible assets *(Compustat items: $\frac{ppent}{at}$).*

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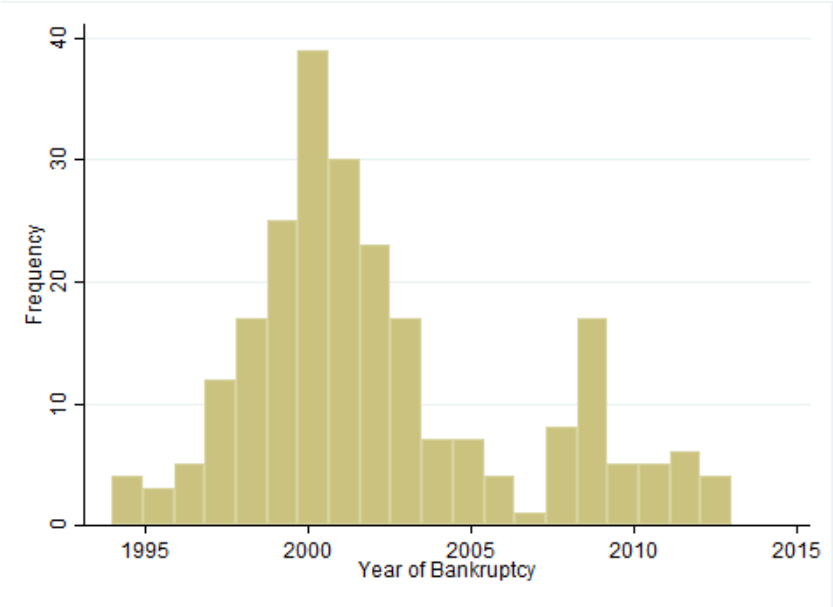
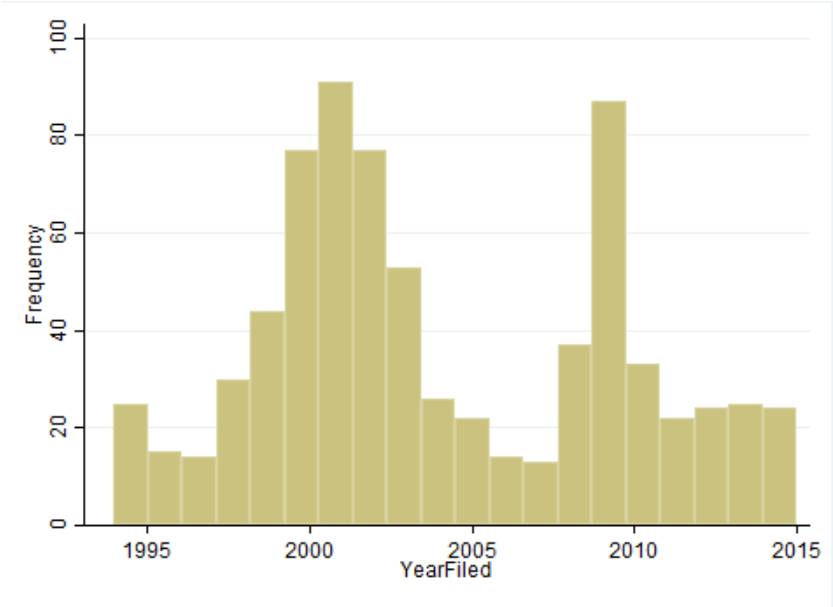
Figure 1: Year-wise distribution of bankruptcies

This figure plots the distribution of bankruptcies by year. Panel A plots bankruptcies for firms that have at least one interlocked firm while Panel B plots all bankruptcies.



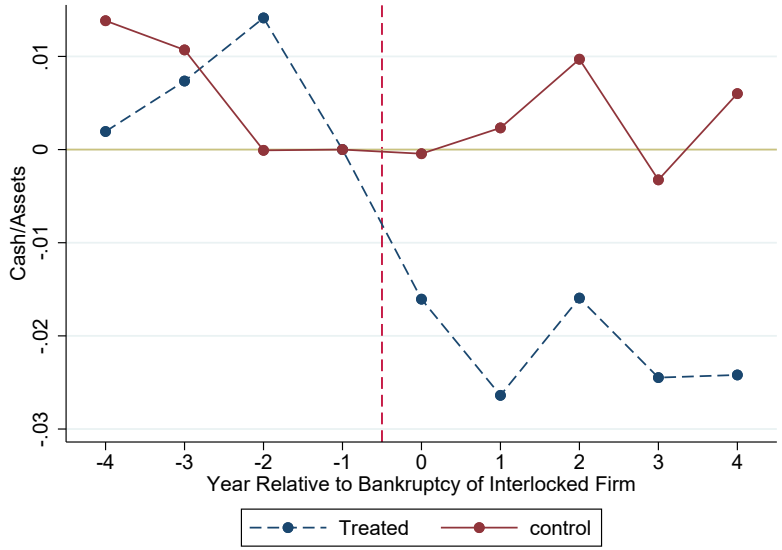
Panel A: Interlocked bankruptcies



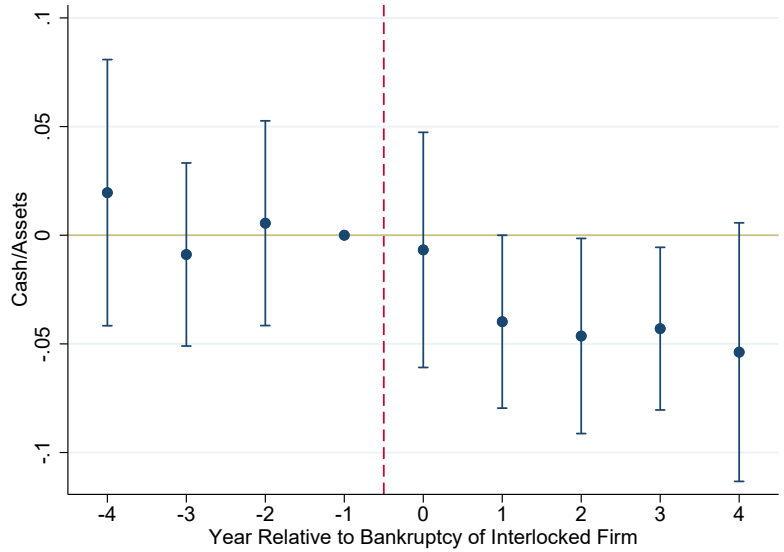
Panel B: All bankruptcies

Figure 2: Timing of change in financial policies

Panel A plots the average *Cash/Assets* separately for treated and control firms in event time after partialling out firm and year dummies. Panel B plots the coefficients for the dynamic difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on *Cash/Assets*. The horizontal axis represents time in years relative to treatment while the vertical axis represents the averages or estimates. Each point in panel B corresponds to the difference in outcome variable for treated firms between the given year and the mean during the year preceding bankruptcy relative to the same difference for control firms. The specification includes the firm-level controls, firm fixed effects, state×year fixed effects and industry×year fixed effects. Vertical bars represent 90% confidence intervals based on double-clustered standard errors at the firm and year level.



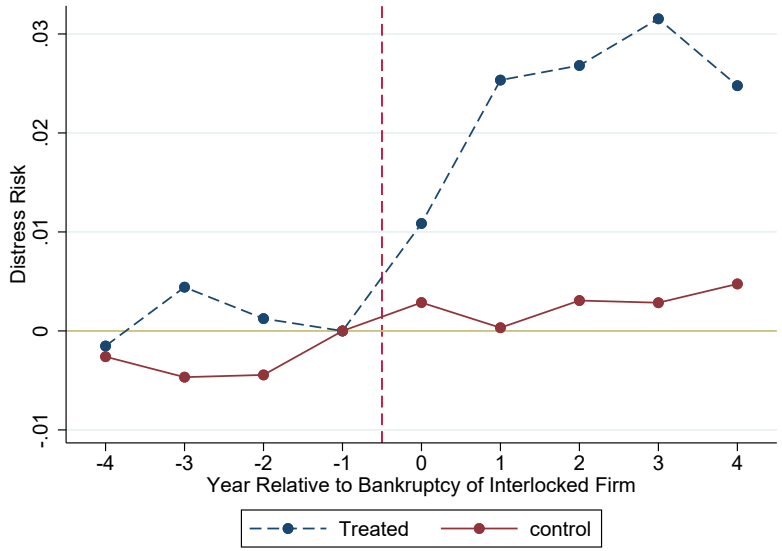
Panel A



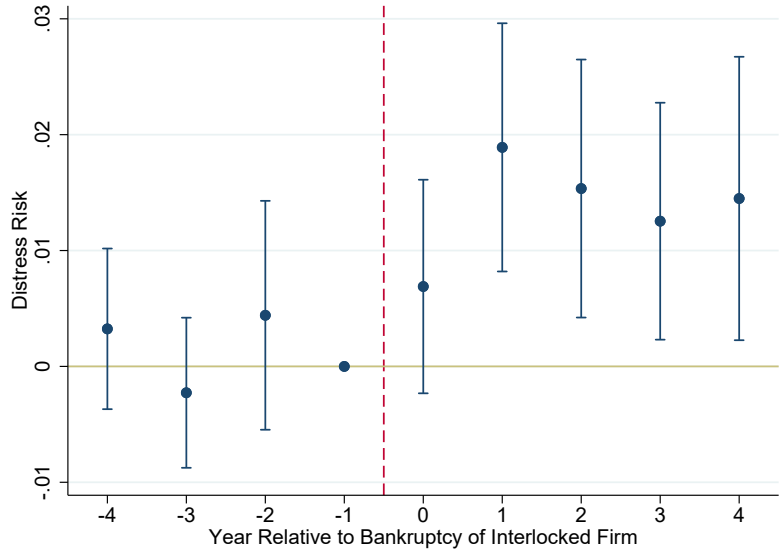
Panel B

Figure 3: Timing of increase in distress risk

Panel A plots the average likelihood of distress separately for treated and control firms in event time after partialling out firm and year dummies. Panel B plots the coefficients for the dynamic difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on *Distress*. The horizontal axis represents time in years relative to treatment while the vertical axis represents the averages or estimates. Each point in panel B corresponds to the difference in outcome variable for treated firms between the given year and the mean during the year preceding bankruptcy relative to the same difference for control firms. The specification includes the firm-level controls, firm fixed effects, state×year fixed effects and industry×year fixed effects. Vertical bars represent 90% confidence intervals based on double-clustered standard errors at the firm and year level.



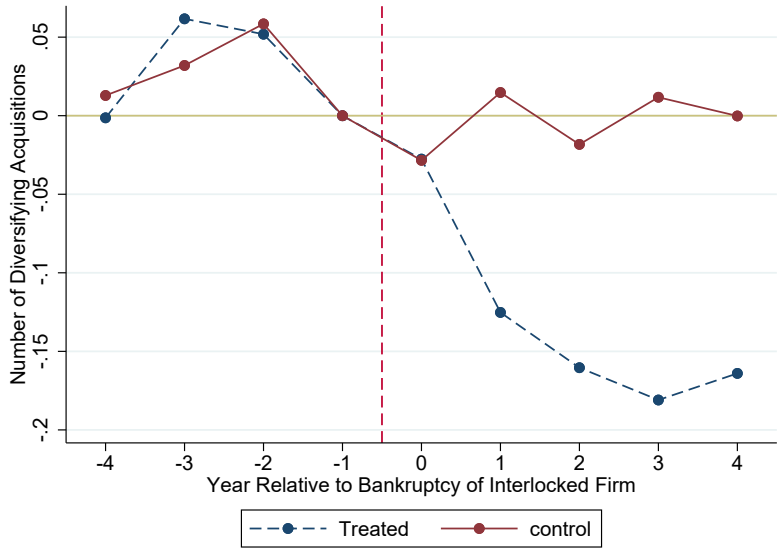
Panel A



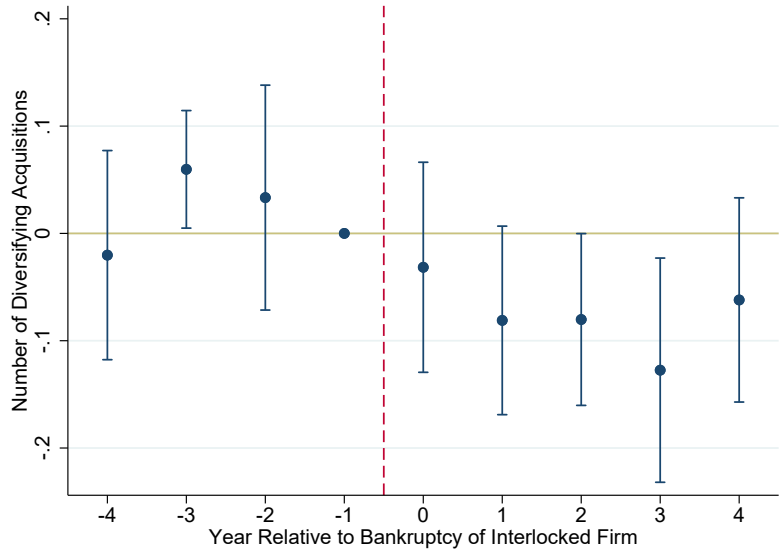
Panel B

Figure 4: Timing of decrease in acquisitions

Panel A plots the average number of diversifying acquisitions separately for treated and control firms in event time after partialling out firm and year dummies. Panel B plots the coefficients for the dynamic difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on diversifying acquisitions. The horizontal axis represents time in years relative to treatment while the vertical axis represents the averages or estimates. Each point in panel B corresponds to the difference in outcome variable for treated firms between the given year and the mean during the year preceding bankruptcy relative to the same difference for control firms. The specification includes the firm-level controls, firm fixed effects, state×year fixed effects and industry×year fixed effects. Vertical bars represent 90% confidence intervals based on double-clustered standard errors at the firm and year level.



Panel A



Panel B

Table 1: Industry classification of interlocked firms

This table reports the distribution of treated firms based on the Fama-French 48-industry classification.

Industry Name	Frequency	Percentage	% same industry as the bankrupt firm
Agriculture	3	0.42	0
Aircraft	3	0.42	0
Apparel	5	0.70	0
Automobiles & Trucks	12	1.67	16.67
Beer & Liquor	1	0.14	0
Business Services	126	17.55	14.50
Business Supplies	11	1.53	0
Candy & Soda	5	0.70	0
Chemicals	7	0.97	0
Communication	75	10.45	48
Computers	32	4.46	6.25
Construction	9	1.25	0
Construction Materials	6	0.84	0
Consumer Goods	11	1.53	18.18
Electrical Equipment	7	0.97	0
Electronic Equipment	59	8.22	8.47
Entertainment	13	1.81	0
Food Products	3	0.42	0
Healthcare	11	1.53	9.09
Machinery	22	3.06	4.55
Measuring and Control Equipment	10	1.39	0
Medical Equipment	14	1.95	0
Non-Metallic & Industrial Metal Mining	3	0.42	0
Other	4	0.56	50
Personal Services	5	0.70	0
Petroleum & Natural Gas	56	7.80	16.07
Pharmaceutical Products	31	4.32	6.45
Precious Metals	6	0.84	33.33
Printing & Publishing	3	0.42	0
Recreation	4	0.56	0
Restaurants, Hotels & Motels	19	2.65	10.53
Retail	42	5.85	28.57
Rubber & Plastic Products	7	0.97	0
Shipbuilding & Railroad Equipment	1	0.14	0
Shipping Containers	1	0.14	0
Steel Works	9	1.25	11.11
Textiles	2	0.28	0
Transportation	24	3.34	8.33
Utilities	37	5.15	0
Wholesale	19	2.65	15.79
Total	718	100.00	13.91

Table 2: Summary statistics

This table reports summary statistics for the matched and and nonmatched samples.

	Matched sample			Full sample		
	Mean	Median	SD	Mean	Median	SD
Dependent variables						
Net Leverage	0.12	0.17	0.64	0.06	0.13	0.70
Cash	0.19	0.08	0.40	0.23	0.09	0.50
Equity Issuance	0.06	0.00	0.57	0.10	0.00	0.56
Distress	0.01	0.00	0.08	0.01	0.00	0.09
Expected Default Freq.	0.06	0.00	0.23	0.06	0.00	0.22
Stock Volatility	0.03	0.02	0.03	0.03	0.03	0.03
Cash Flow Volatility	0.04	0.03	0.09	0.06	0.03	0.14
# of Acquisitions	0.37	0.00	1.17	0.27	0.00	0.92
Acquisition Indicator	0.19	0.00	0.39	0.15	0.00	0.35
# of Diversifying Acq.	0.19	0.00	0.76	0.14	0.00	0.60
Control variables						
Board Size	8.05	8.00	3.08	7.88	8.00	3.04
CEO Ownership (%)	2.56	0.00	10.69	2.41	0.00	8.93
log(Total Assets)	6.64	6.57	2.00	5.62	5.36	2.06
MTB	1.94	1.42	2.49	2.02	1.43	2.24
ROA	0.10	0.12	0.16	0.05	0.10	0.25
Tangibility	0.33	0.25	0.26	0.32	0.24	0.27
Dividend Indicator	0.42	0.00	0.49	0.32	0.00	0.47
Director Event	0.44	0.00	0.50			
Heterogeneity variables (used in matched sample)						
Professional Fees (10,000's)	104.78	40.70	122.32			
Time in Bankruptcy (Days)	524.48	425.00	483.98			
Stock Price Reaction (%)	17.70	8.59	28.60			
Independent (%)	53.61	100	47.24			
Executive (%)	11.35	0.00	31.73			
Gray (%)	35.04	0.00	49.38			
Monitoring Committee Member (%)	6.81	0.00	25.20			
Director Network	711.65	613.00	502.72			
Multiple Interlocked Directors (%)	10.68	0.00	30.89			

Table 3: Comparison of treated and matched control firms

This table reports summary statistics (mean, median, and standard deviation) for the matching variables and measures of risk-taking for both treated firms and their matched controls in the year prior to treatment. The sample comprises 718 *Treated* firms, and up to thrice the number of control firms matched on industry, Log(Total Assets), and ROA for the year prior to treatment. The last column reports the difference between treated and control firms. ***, ** and * represent significance at 1%, 5% and 10% levels. All variables are defined in Appendix A.

	Treated sample			Control sample			Treated-Control
	Mean	Median	SD	Mean	Median	SD	
Matching variables							
log(Total Assets)	6.52	6.47	1.97	6.41	6.37	1.87	0.113
ROA	0.07	0.11	0.20	0.08	0.11	0.16	-0.009
Outcome variables							
Net Leverage	0.12	0.18	0.51	0.13	0.18	0.57	-0.01
Cash/Assets	0.21	0.08	0.31	0.19	0.07	0.27	0.016
Equity Issuance	0.07	0.00	0.26	0.06	0.00	0.24	0.008
Distress	0.01	0.00	0.10	0.01	0.00	0.07	-0.001
Stock Volatility	0.04	0.03	0.04	0.03	0.03	0.02	0.01
# of Diversify. Acq.	0.33	0.00	1.03	0.22	0.00	0.73	0.11***

Table 4: Director bankruptcy experience and financial policies

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on corporate financial policies. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Net Leverage is total debt net of cash, Cash includes cash and cash equivalents, and Equity Issuance is the net equity issuance; all scaled by lagged book value of total assets. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Matched sample			Full sample		
	Net Leverage	Cash / Assets	Equity Issuance	Net Leverage	Cash / Assets	Equity Issuance
	(1)	(2)	(3)	(4)	(5)	(6)
Interlocked Bankruptcy	0.041**	-0.034***	-0.077***	0.011	-0.023***	-0.046***
	(2.22)	(-2.77)	(-3.01)	(0.82)	(-3.07)	(-2.93)
Board Size	-0.001	-0.003	-0.000	-0.002	-0.005***	-0.002
	(-0.63)	(-1.22)	(-0.10)	(-1.16)	(-4.61)	(-1.64)
CEO Ownership	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.42)	(-0.51)	(-0.98)	(-0.43)	(-0.50)	(-1.04)
log(Total Assets)	0.058***	0.007	-0.010	0.037**	0.051***	0.034**
	(3.14)	(0.55)	(-0.82)	(2.07)	(3.12)	(2.12)
MTB	-0.034**	0.027**	0.034*	-0.040***	0.034***	0.047***
	(-2.21)	(2.24)	(1.80)	(-4.27)	(4.13)	(3.73)
ROA	-0.149**	0.125**	-0.100	-0.271***	0.209***	0.041*
	(-2.61)	(2.16)	(-1.20)	(-4.94)	(5.97)	(1.99)
Tangibility	0.905***	-0.811***	-0.509***	1.025***	-0.914***	-0.576***
	(8.19)	(-8.76)	(-5.08)	(13.75)	(-14.06)	(-9.31)
Dividend Indicator	-0.022	-0.002	0.008	-0.028***	-0.009*	0.010
	(-1.17)	(-0.24)	(0.61)	(-2.87)	(-1.78)	(1.60)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21,692	20,652	19,621	96,878	89,867	87,904
R^2	0.612	0.512	0.355	0.591	0.498	0.358

Table 5: Director bankruptcy experience, distress risk, and volatility

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on distress risk and volatility measures. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Expected Default Frequency captures the likelihood of default based on distance-to-default measure. Stock Volatility is the volatility of daily stock returns. Cash Flow Volatility is the volatility of quarterly ratios of cash flow to assets. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Matched sample				Full sample			
	Distress	Expected Default Frequency	Stock Volatility	Cash Flow Volatility	Distress	Expected Default Frequency	Stock Volatility	Cash Flow Volatility
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Interlocked Bankruptcy	0.011***	0.016*	0.002*	0.009**	0.008**	0.014**	0.001*	0.003
	(2.95)	(1.67)	(1.82)	(2.06)	(2.59)	(2.78)	(1.72)	(1.07)
Board Size	-0.001**	-0.004**	0.000	-0.000	-0.001***	-0.004***	0.000	-0.000**
	(-2.67)	(-2.65)	(0.94)	(-1.73)	(-5.71)	(-3.11)	(-0.81)	(-2.26)
CEO Ownership	0.000	-0.000	-0.000	-0.000	0.000	-0.001**	0.000	0.000
	(0.24)	(-1.06)	(-0.85)	(-1.20)	(-0.82)	(-2.33)	(0.7)	(-0.96)
log(Total Assets)	-0.012***	-0.017**	0.008***	-0.004***	-0.014***	-0.012**	0.009***	-0.005***
	(-4.92)	(-2.43)	(3.10)	(-3.38)	(-7.07)	(-2.33)	-4.75	(-8.77)
MTB	0.000	-0.000	-0.004*	0.000	-0.001***	-0.001*	-0.005***	0.000
	(0.28)	(-0.43)	(-1.89)	(1.43)	(-2.90)	(-1.96)	(-5.64)	(-1.72)
ROA	-0.052***	-0.056*	0.013	-0.021***	-0.032***	-0.059***	0.014	-0.017***
	(-3.08)	(-1.85)	(1.54)	(-7.20)	(-5.90)	(-5.44)	(1.59)	(-9.34)
Tangibility	0.021	0.000	0.071***	-0.005	0.013	0.047*	0.092***	0.010***
	(0.98)	(0.00)	(3.42)	(-0.84)	(1.63)	(1.97)	(10.03)	(2.77)
Dividend Indicator	-0.001	-0.054***	-0.010***	-0.006**	-0.007***	-0.040***	-0.009***	-0.005***
	(-0.51)	(-3.96)	(-2.86)	(-2.22)	(-3.35)	(-4.49)	(-4.12)	(-3.64)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	18,585	10,337	15,753	19,058	78,212	39,780	64,970	87,864
R^2	0.355	0.560	0.567	0.373	0.286	0.478	0.541	0.362

Table 6: Director bankruptcy experience and acquisition behavior

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on acquisition behavior. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Any Acquisition Indicator is a dummy variable that takes a value of one during the year that the firm makes an acquisition and zero otherwise. Number of acquisitions is the total number of acquisitions completed by a firm in a given year. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Matched sample			Full sample		
	# of Acquisitions	Any Acquisition Indicator	# of Diversifying Acquisitions	# of Acquisitions	Any Acquisition Indicator	# of Diversifying Acquisitions
	(1)	(2)	(3)	(4)	(5)	(6)
Interlocked Bankruptcy	-0.152***	-0.029**	-0.050*	-0.155***	-0.029***	-0.068**
	(-2.42)	(-2.18)	(-1.74)	(-3.52)	(-2.82)	(-1.98)
Board Size	-0.003	0.001	-0.001	0.001	0.003	0.000
	(-0.42)	(0.67)	(-0.15)	(0.12)	(1.63)	(0.16)
CEO Ownership	0.002***	0.001***	0.002***	0.002***	0.001***	0.002***
	(2.45)	(3.85)	(3.95)	(2.66)	(2.41)	(3.98)
log(Total Assets)	0.135***	0.046***	0.083***	0.100***	0.038***	0.056***
	(4.27)	(4.28)	(4.67)	(4.88)	(5.49)	(4.71)
MTB	0.002	0.001	0.003	0.003	0.001	0.003*
	(0.72)	(0.88)	(1.27)	(1.71)	(1.57)	(1.95)
ROA	0.149*	0.093***	0.069	0.029**	0.023***	0.008
	(1.84)	(3.51)	(1.46)	(2.72)	(4.35)	(1.09)
Tangibility	-0.135	-0.041	-0.123*	-0.173***	-0.065***	-0.102***
	(-1.35)	(-0.97)	(-1.79)	(-4.66)	(-4.32)	(-4.68)
Dividend Indicator	-0.105**	-0.024*	-0.049	-0.017	-0.012	0.004
	(-2.12)	(-1.87)	(-1.31)	(-0.77)	(-1.54)	(0.29)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	22,066	22,066	22,066	101,287	101,287	101,287
R^2	0.521	0.508	0.485	0.472	0.431	0.426

Table 7: Heterogeneity based on likelihood of economic linkage

Panel A reports results from the analysis that estimate the effect of bankruptcy of an interlocked firm belonging to a non-related industry on different risk measures. Non-related industries are identified as industries on which the supply chain dependence for treated firms is below 0.1%. Panel B reports results from triple interaction analysis that estimates the heterogeneous effects for firms with varying levels of economic linkages with the bankrupt firm. Economic linkages are measured using pairwise vertical relatedness measure constructed in Fresard et al. (2019). *InterlockedBankruptcy* is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. All estimations include firm fixed effects, state×year fixed effects and industry×year fixed effects. They also include a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. *Above* (*Below*) is a dummy variable that takes a value one for firms with above (below) median levels of economic linkages with the bankrupt firm during the year of bankruptcy filing. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

Panel A: Firms belonging to non-related industry

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy	-0.051***	0.015***	-0.031*
	(-2.49)	(3.68)	(-1.68)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	19,343	17,289	20,714
R-squared	0.508	0.360	0.497

Table 7 (Continued)

Panel B: Heterogeneity by likelihood of economic linkages between interlocked firms

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy×*Above*	-0.025*	0.008**	-0.040
	(-1.70)	(1.97)	(-1.40)
Interlocked Bankruptcy×*Below*	-0.038**	0.012**	-0.055
	(-2.20)	(2.29)	(-1.23)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	20,652	18,585	22,066
R-squared	0.512	0.355	0.485
p-value of difference	0.583	0.547	0.494

Table 8: Controlling for confounding director events

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on different firm outcomes after controlling for confounding director events. *InterlockedBankruptcy* is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. *DirectorEvent* is a dummy variable that takes a value of one when other directors experience confounding CEO turnover, declining firm performance, M&A deals and divestitures, financial misconduct and financial distress at other interlocked firms. All estimations include firm fixed effects, state×year fixed effects and industry×year fixed effects. They also include a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)	(4)	(5)	(6)
Interlocked Bankruptcy	-0.031**	0.013***	-0.045	-0.080**	0.009*	-0.069*
	(-2.43)	(3.66)	(-0.92)	(-2.37)	(1.91)	(-1.68)
Director Event				0.078*	0.006	0.039
				(2.06)	(1.09)	(0.47)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,477	15,751	17,335	16,477	15,751	17,335
R-squared	0.520	0.360	0.500	0.520	0.360	0.500

Table 9: Placebo analysis

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of a previously interlocked firm on different risk measures. First three columns estimate the effect on firms that shared a director with bankrupt firm prior to filing but not during filing because the director finished her term at the bankrupt firm at least a year before filing. Last three columns estimate the effect on firms where at least one of the directors from the bankrupt firm was employed at the interlocked firm prior to bankruptcy filing but not during filing. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state$\times$year fixed effects and $\delta_{j,t}$ represents industry$\times$year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Placebo I			Placebo II		
	Cash / Assets	Distress	# of Diversifying Acquisitions	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)	(4)	(5)	(6)
Interlocked Bankruptcy	-0.015	-0.001	-0.111	0.122	0.000	-0.068
	(-1.18)	(-0.38)	(-0.83)	(1.40)	(0.009)	(-0.31)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
State$\times$ Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry$\times$ Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,612	12,188	17,128	8,112	7,010	8,762
R-squared	0.845	0.628	0.806	0.792	0.541	0.778

Table 10: Heterogeneity by bankruptcy costs

This table reports results from regressions that estimate the heterogeneous effects of bankruptcy of an interlocked firm on corporate risk-taking based on different levels of bankruptcy costs. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_1 \times InterlockedBankruptcy_{i,t} \times Above + \beta_2 \times InterlockedBankruptcy_{i,t} \times Below + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. *Above* (*Below*) is a dummy that takes a value of one for firms whose interlocked firms experience higher (lower) than the median cost of bankruptcy in the sample. The measure used for bankruptcy cost is reported as the cross-sectional variable in each column.δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions	Cash / Assets	Distress	# of Diversifying Acquisitions	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Interlocked Bankruptcy×*Above*	-0.015	-0.003	0.264*	-0.01	0.005	0.075	-0.021	0.01	-0.021
	(-0.59)	(-0.33)	-1.93	(-0.66)	(0.85)	-1.54	(-1.64)	(1.03)	(-0.43)
Interlocked Bankruptcy×*Below*	-0.031*	0.030**	-0.093	-0.060**	0.017***	-0.184**	-0.032**	0.013***	-0.168*
	(-1.67)	(2.37)	(-1.39)	(-2.51)	(3.36)	(-2.29)	(-2.20)	(3.51)	(-1.79)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cross-Sectional Variable	Professional Fees			Time in Bankruptcy			Stock Price Decline Around Filing		
Observations	17,628	15,639	18,902	20,652	18,585	22,066	20,652	18,585	22,066
R-squared	0.525	0.38	0.51	0.512	0.355	0.486	0.512	0.355	0.485
p-value of difference	0.364	0.043	0.03	0.348	0.094	0.014	0.575	0.652	0.181

Table 11: Bankruptcy and directors' careers

This table reports results from regressions estimating the effect of bankruptcy of a firm on number of directorships held by it's directors. We estimate the following single difference regression equation with 'number of directorships' as the dependent variable ($y_{i,t}$):

$$y_{i,t} = \beta_1 \times Post\ Bankruptcy \times Above + \beta_2 \times Post\ Bankruptcy \times Below + \delta_t + \epsilon_{i,t}$$

Post Bankruptcy is a dummy variable that takes a value of one following bankruptcy, *Above* (*Below*) is a dummy that takes a value of one for bankruptcies where the cost of bankruptcy was higher (lower) than the median cost of bankruptcy in the sample. The measure used for bankruptcy cost is reported as the cross-sectional variable in each column. We estimate this model for two time periods - year before and after bankruptcy. t-statistics are reported in parentheses, and *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Number of Directorships			
	(1)	(2)	(3)	(4)
Post Bankruptcy$_t$	-0.180**			
	(-2.14)			
Post Bankruptcy$_t \times$*Above*		-0.131*	-0.235**	-0.310**
		(-1.69)	(-2.33)	(-1.96)
Post Bankruptcy$_t \times$*Below*		-0.001	-0.098	-0.140
		(-0.81)	(-0.91)	(-1.14)
Cross-Sectional Variable		Professional Fees	Time in Bankruptcy	Stock Returns Around Filing
Filing-Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	1,218	1,218	1,218	1,218
R-squared	0.032	0.035	0.033	0.032
p-value of difference		0.472	0.267	0.359

Table 12: Heterogeneity by type of director

This table reports results from regressions that estimate the heterogeneous effects of bankruptcy of an interlocked firm on corporate risk-taking based on the type of director they share. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_1 \times InterlockedBankruptcy_{i,t} \times Independent_i + \beta_2 \times InterlockedBankruptcy_{i,t} \times Executive_i + \beta_3 \times InterlockedBankruptcy_{i,t} \times Gray_i + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. Independent (Executive) is a dummy variable that takes a value of one for firms who share at least one independent (executive) board of director with firms filing for bankruptcy. Gray is a dummy variable that takes a value of one for firms that neither share an independent nor executive director with firms filing for bankruptcy. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy×*Independent*	-0.018	0.006	0.106*
	(-1.26)	(1.42)	(1.76)
Interlocked Bankruptcy×*Executive*	-0.04	0.013	-0.129
	(-1.48)	(1.05)	(-1.01)
Interlocked Bankruptcy×*Gray*	-0.095*	0.021**	-0.173*
	(-2.05)	(2.32)	(-2.03)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	20,652	18,585	22,066
R-squared	0.512	0.355	0.486
p-value of difference (Independent - Gray)	0.432	0.288	0.021
p-value of difference (Executive - Gray)	0.381	0.727	0.804

Table 13: Heterogeneity by director characteristics

This table reports results from regressions that estimate the heterogeneous effects of bankruptcy of an interlocked firm on corporate risk-taking based on different characteristics of the shared director. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_1 \times InterlockedBankruptcy_{i,t} \times Above_i + \beta_2 \times InterlockedBankruptcy_{i,t} \times Below_i + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. Above (Below) is a dummy variable that takes a value of one for firms that share directors with higher (lower) value than the median based on the cross sectional variable listed in each column. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions	Cash / Assets	Distress	# of Diversifying Acquisitions	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Interlocked Bankruptcy×*Above*	0.007	0.006	0.061	-0.034*	0.011*	0.063	-0.065*	0.026**	-0.059
	(0.39)	(1.26)	(1.14)	(-1.71)	(1.68)	(1.00)	(-1.78)	(2.05)	(-0.87)
Interlocked Bankruptcy×*Below*	-0.109**	0.010**	-0.025	0.011	0.003	0.045	-0.030*	0.009**	-0.049
	(-2.18)	(2.40)	(-1.15)	(0.67)	(0.56)	(0.63)	(-2.02)	(2.35)	(-1.03)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cross-Sectional Variable	Monitoring Committee Member			Director Network			# of Interlocked Directors		
Observations	17,718	15,756	18,959	17,718	15,756	18,959	20,652	18,585	22,066
R-squared	0.525	0.378	0.5	0.718	0.378	0.5	0.512	0.355	0.485
p-value of difference	0.044	0.516	0.543	0.045	0.364	0.855	0.457	0.194	0.805

Table 14: Heterogeneity by director attendance

This table reports results from regressions that estimate the heterogeneous effects of bankruptcy of an interlocked firm on corporate risk-taking based whether the shared common director attends at least 75% of the meetings. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_1 \times InterlockedBankruptcy_{i,t} \times Above75 + \beta_2 \times InterlockedBankruptcy_{i,t} \times Below75 + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. Above75 (Below75) is a dummy variable that takes a value of one for bankruptcies where the shared common director attends more (less) than 75% meetings. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy×*Above75*	-0.026***	0.009**	-0.080
	(-2.65)	(2.05)	(-1.57)
Interlocked Bankruptcy×*Below75*	0.067	-0.007	-0.065
	(1.61)	(-0.45)	(-0.43)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	20,028	17,950	21,424
R-squared	0.529	0.36	0.488
p-value of difference	0.008	0.283	0.939

Appendix Tables

Table A1: Heterogeneity by whether director leaves or stays

This table reports results from regressions that estimate the heterogeneous effects of bankruptcy of an interlocked firm on corporate risk-taking based whether the shared common director leaves within one year of bankruptcy filing or stays longer. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_1 \times InterlockedBankruptcy_{i,t} \times Stays + \beta_2 \times InterlockedBankruptcy_{i,t} \times Leaves + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. Stays (Leaves) is a dummy variable that takes a value of one for bankruptcies where the shared common director stays (does not stay) on the board of the bankrupt firm at least a year following bankruptcy filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy×*Stays*	-0.016**	0.035**	-0.055*
	(-1.99)	(2.29)	(-1.69)
Interlocked Bankruptcy×*Leaves*	-0.021	0.008**	-0.005
	(-1.14)	(2.16)	(-0.06)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	20,652	18,585	22,066
R-squared	0.722	0.355	0.485
p-value of difference	0.801	0.099	0.625

Table A2: Robustness to not including time-varying, firm-level controls

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on different risk measures without including firm-level control variables. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy	-0.018**	0.012***	-0.049*
	(-2.20)	(3.34)	(-1.74)
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	22,643	18,931	24,629
R-squared	0.689	0.342	0.508

Table A3: Robustness to winsorizing outcome variables

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on different risk measures after winsorizing outcome variables. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy	-0.015**	0.009***	-0.046*
	(-2.01)	(2.47)	(-1.83)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	19,850	16,743	19,851
R-squared	0.725	0.372	0.508

Table A4: Robustness to dropping different bankruptcy years

This table reports *t*-stats from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on different risk measures dropping one year at a time. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Excluding 1994	-2.74	2.76	-1.81
Excluding 1995	-2.76	2.92	-1.83
Excluding 1996	-2.74	2.93	-1.99
Excluding 1997	-2.63	2.82	-2
Excluding 1998	-2.77	2.95	-1.94
Excluding 1999	-3.08	3.55	-1.47
Excluding 2000	-2.39	2.52	-1.64
Excluding 2001	-1.71	3.00	-2.2
Excluding 2002	-1.85	2.62	-1.64
Excluding 2003	-2.92	2.56	-2.04
Excluding 2004	-2.76	3.31	-1.77
Excluding 2005	-2.5	2.63	-2.01
Excluding 2006	-2.65	2.93	-1.99
Excluding 2007	-2.84	2.93	-1.97
Excluding 2008	-2.77	2.52	-1.94
Excluding 2009	-3.03	2.68	-2.04
Excluding 2010	-2.69	2.97	-2.05
Excluding 2011	-2.85	2.85	-1.96
Excluding 2012	-2.83	2.93	-2.02
Excluding 2013	-2.79	2.95	-1.93

Table A5: Robustness to dropping different industries

This table reports *t*-stats from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on different risk measures dropping one 2-digit SIC industry at a time. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions		Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)		(4)	(5)	(6)
Excluding 10	-2.06	2.96	-1.74	Excluding 42	-2.09	2.97	-1.77
Excluding 12	-2.08	2.93	-1.74	Excluding 44	-2.01	2.98	-1.74
Excluding 13	-2.16	2.87	-1.88	Excluding 45	-2.02	3.4	-1.81
Excluding 14	-2.12	2.92	-1.8	Excluding 48	-1.59	2.39	-0.91
Excluding 15	-2.14	2.99	-1.54	Excluding 49	-1.95	3.45	-1.72
Excluding 17	-2.11	2.95	-1.72	Excluding 50	-2.25	2.73	-1.46
Excluding 20	-2.08	2.94	-1.75	Excluding 51	-1.9	2.94	-1.78
Excluding 22	-2.00	2.86	-1.67	Excluding 52	-2.08	2.87	-1.73
Excluding 23	-1.98	2.84	-1.63	Excluding 53	-2.12	2.84	-1.76
Excluding 24	-2.16	2.67	-1.65	Excluding 54	-1.85	2.69	-1.68
Excluding 25	-2.1	2.92	-1.74	Excluding 56	-2.18	2.96	-1.68
Excluding 26	-2.4	3.09	-1.55	Excluding 57	-2.06	2.95	-1.77
Excluding 27	-2.12	2.87	-1.78	Excluding 58	-2.19	2.84	-1.59
Excluding 28	-2.09	2.84	-1.96	Excluding 59	-2.11	3.21	-1.87
Excluding 29	-2.12	2.94	-1.72	Excluding 72	-2.07	2.94	-1.67
Excluding 30	-2.11	2.98	-1.74	Excluding 73	-1.7	2.82	-1.72
Excluding 32	-2.07	3.03	-1.88	Excluding 76	-1.99	2.87	-1.75
Excluding 33	-2.14	2.86	-1.66	Excluding 78	-2.24	2.81	-1.85
Excluding 34	-2.12	2.97	-1.76	Excluding 79	-2.11	2.88	-1.64
Excluding 35	-2.09	2.71	-1.66	Excluding 80	-1.89	3.13	-1.67
Excluding 36	-2.33	2.93	-1.7	Excluding 83	-2.11	2.95	-1.74
Excluding 37	-2.08	2.86	-1.8	Excluding 87	-2.27	3.00	-1.68
Excluding 38	-2.26	3.1	-1.73				

Table A6: Robustness to including financial and utility firms

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on different risk measures after including financial and utility firms. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy	-0.043*	0.010***	-0.022
	(-1.85)	(4.12)	(-0.61)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	22,675	20,331	24,204
R-squared	0.437	0.349	0.483

Table A7: Robustness to including small firms

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on different risk measures without dropping firms with less than $10 million in assets. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy	-0.042**	0.012***	-0.050
	(-2.33)	(3.16)	(-1.13)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	21,298	18,902	22,595
R-squared	0.423	0.344	0.480

Table A8: Heterogeneity by bankruptcy costs using quartiles

This table reports results from regressions that estimate the heterogeneous effects of bankruptcy of an interlocked firm on corporate risk-taking based on different levels of bankruptcy costs. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \sum_{k=1}^{4} \beta_k \times InterlockedBankruptcy_{i,t} \times Quart_k + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. $Quart_k$ is a dummy that takes a value of one for firms where the level of bankruptcy cost experienced by interlocked firms belongs to kth quartile in the sample. The measure used for bankruptcy cost is reported as the cross-sectional variable in each column.δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash /Assets	Distress	# of Diversifying Acquisitions	Cash /Assets	Distress	# of Diversifying Acquisitions	Cash /Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Interlocked Bankruptcy×$Quart_1$	-0.049	0.043***	-0.103*	-0.053**	0.018**	-0.258**	-0.048*	0.022**	-0.341*
	(-1.16)	(2.57)	(-1.67)	(-2.33)	(2.07)	(-1.99)	(-1.66)	(2.25)	(-2.07)
Interlocked Bankruptcy×$Quart_2$	-0.018	0.016	-0.06	-0.051*	0.011	-0.077	-0.030	0.022	-0.227
	(-0.54)	(1.21)	(-0.73)	(-1.84)	(1.58)	(-1.57)	(-0.53)	(1.33)	(-1.01)
Interlocked Bankruptcy×$Quart_3$	0.000	-0.004	-0.014	-0.035	0.006	0.09	-0.076	0.008	0.025
	(0.02)	(-0.33)	(-0.15)	(-1.36)	(0.96)	(1.53)	(-1.36)	(0.60)	(0.26)
Interlocked Bankruptcy×$Quart_4$	0.011	-0.005	0.510*	0.007	0.005	0.073	-0.005	0.001	0.047
	(0.53)	(-0.57)	(1.97)	(0.36)	(0.54)	(0.80)	(-0.16)	(0.06)	(0.66)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cross-Sectional Variable	Professional Fees			Time in Bankruptcy			Stock Returns Around Filing		
Observations	19,176	15,222	20,114	21,189	18,111	23,917	19,842	15,989	21,121
R-squared	0.511	0.355	0.486	0.512	0.355	0.486	0.473	0.362	0.467
p-value of difference	0.611	0.025	0.03	0.056	0.308	0.018	0.665	0.140	0.048

Table A9: Robustness to dropping firms with multiple shared directors

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on different risk measures after dropping treated firms that share multiple directors with bankrupt firms. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy	-0.030**	0.009***	-0.048*
	(-2.02)	(2.45)	(-1.70)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	20,223	18,146	21,623
R-squared	0.509	0.352	0.485

Table A10: Robustness to using alternative matching criteria

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on different risk measures for different samples that are constructed using the respective outcome variable as one of the matching co-variates. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state$\times$year fixed effects and $\delta_{j,t}$ represents industry$\times$year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(2)	(3)
Interlocked Bankruptcy	-0.021***	0.014***	-0.061*
	(2.55)	(3.09)	(-1.77)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State$\times$ Year FE	Yes	Yes	Yes
Industry$\times$ Year FE	Yes	Yes	Yes
Observations	20,689	17,476	22,178
R-squared	0.711	0.388	0.489

Table A11: Robustness to defining treatment using bankruptcy resolution

This table reports results from difference-in-differences regressions that estimate the effect of bankruptcy of an interlocked firm on different risk measures where treatment is defined relative to bankruptcy resolution instead of filing. We estimate the following regression equation for different dependent variables ($y_{i,j,s,t}$):

$$y_{i,j,s,t} = \beta_0 \times InterlockedBankruptcy_{i,t} + \Gamma \times X_{i,t} + \delta_i + \delta_{s,t} + \delta_{j,t} + \epsilon_{i,j,s,t}$$

InterlockedBankruptcy is a dummy variable that takes a value one for firms that share a director with a firm that files for bankruptcy during the years post filing. δ_i represents firm fixed effects, $\delta_{s,t}$ represents state×year fixed effects and $\delta_{j,t}$ represents industry×year fixed effects. $X_{i,t}$ represents a vector of control variables that include size of the board, the CEO's ownership stake, log of total assets, market-to-book ratio, ROA, tangibility and indicator for dividend payout. Cash includes cash and cash equivalents scaled by lagged book value of total assets. Distress is a dummy variable that takes a value of one during the year when the firm's stock gets delisted due to performance related reasons and zero otherwise. Number of Diversifying Acquisitions captures the number of acquisitions where target firms belong to a different industry than the acquirer. Standard errors are double-clustered at firm and year level, and t-statistics are reported in parentheses. *, ** and *** represent significance at 10%, 5% and 1% level respectively.

	Cash / Assets	Distress	# of Diversifying Acquisitions
	(1)	(3)	(5)
Interlocked Bankruptcy	-0.015*	0.011***	-0.081*
	(-1.79)	(2.59)	(-1.72)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
State× Year FE	Yes	Yes	Yes
Industry× Year FE	Yes	Yes	Yes
Observations	20,431	18,309	21,788
R-squared	0.724	0.370	0.495

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