

# Corporate Leadership and Creditor Recovery Rates: Evidence from Executive Gender

Clarissa Hauptmann  
Anywhere Sikochi

Working Paper 20-087



# Corporate Leadership and Creditor Recovery Rates: Evidence from Executive Gender

Clarissa Hauptmann  
Waterland Private Equity

Anywhere Sikochi  
Harvard Business School

**Working Paper 20-087**

Copyright © 2020 by Clarissa Hauptmann and Anywhere Sikochi.

Working papers are in draft form. This working paper is distributed for purposes of comment and discussion only. It may not be reproduced without permission of the copyright holder. Copies of working papers are available from the author.

Funding for this research was provided in part by Harvard Business School.

# Corporate Leadership and Creditor Recovery Rates: Evidence from Executive Gender\*

Clarissa Hauptmann<sup>†</sup> and Anywhere Sikochi<sup>‡</sup>

This version: February 16, 2020

## Abstract

We examine the relationship between the gender of executives and corporate creditor recovery rates. Using 2,288 defaulted debt instruments, we find that female executives are associated with higher creditor recovery rates. Our findings are robust to tests that correct for potential self-selection inherent in studies of executive gender. We find evidence suggesting that conservatism in financial reporting and risk taking are potential channels through which gender affects creditor recovery rates. In additional tests, we find that the effects of executive gender persists across default types and the 2008 global financial crisis. We also show that gender diversity on the board does not moderate the effect of executive gender.

**Keywords:** Executive Gender, Default, Recovery rates, Debt, Corporate bonds, Conservatism

**JEL Classifications:** G12, G33, J16, M4, M14

**Declarations of interest:** none

---

\*We acknowledge helpful comments and suggestions from Renée Adams, Dane Christensen, and participants at University of Oxford, Saïd Business School Research Seminars. We are grateful to Stephanie Pevehouse, Client Specialist for help with BoardEx database and Austin Lim for research assistance. Sikochi acknowledges financial support from the Division of Faculty Research and Development at Harvard Business School. Hauptmann conducted this research as a Research Fellow, University of Oxford, Saïd Business School and thus acknowledges financial support from the Saïd Business School and the Ford Foundation. All errors are our own.

<sup>†</sup>Clarissa Hauptmann, Investment Professional at Waterland Private Equity, Hamburg Area, Germany, Email: clarissa.hauptmann@gmail.com

<sup>‡</sup>Corresponding author. Anywhere Sikochi (Siko), Assistant Professor of Business Administration, Harvard Business School, 389 Morgan Hall, Boston, MA, 02163, USA, Phone: +1 617-496-3756, Email: ssikochi@hbs.edu

# 1 Introduction

The percent of female top executives in publicly traded companies in the United States has been steadily increasing in recent years (Huang and Kisgen, 2013; Faccio et al., 2016). Among major U.S. corporations in 2005, 1.5% of chief executive officers were female (Huang and Kisgen, 2013). This number grew to 6.4% in 2017.<sup>1</sup> This increase in female representation is driven by a global debate on achieving fairness and gender equality, as well as by the growing awareness that full efficiency cannot be achieved without drawing from the entire pool of managerial talent. Although about half of university graduates in developed countries are female, this does not yet persist throughout higher levels of the corporate hierarchy (Adams and Kirchmaier, 2016).

As executive gender diversity increases, it is important to understand the implications on corporate outcomes, especially on how gender affects creditor claims in the firm. Creditors are important stakeholders, providing the vast majority of corporate financing (Armstrong et al., 2010). In this paper, we examine whether the gender of an executive affects outcomes in corporate lending relationships. We test and find evidence consistent with the proposition that creditors of firms run by female executives receive higher recovery rates relative to firms with male executives. Creditor recovery rates refer to the proportion of outstanding debt that creditors recover if default occurs.

Existing literature documents differences in risk preferences between male and female executives (e.g., Jia et al., 2014; Carter et al., 2017), which can influence corporate decisions and outcomes. Malmendier and Tate (2008) provide evidence in a study of acquisitions suggesting that the differences in risk tolerance can explain the relationship between male CEO overconfidence and acquisition outcomes: over-payment for target companies and the likelihood of undertaking value-destroying mergers. Huang and Kisgen (2013) find that male executives undertake more acquisitions (often with negative announcement returns) and issue debt more often than female executives indicating that male executives are more

---

<sup>1</sup>See <http://fortune.com/2017/06/07/fortune-women-ceos>.

overconfident and risk seeking than female executives. Adhikari et al. (2018) use executive gender as a proxy for risk preferences and find evidence that gender is associated with less risky firm policies and fewer future lawsuits. This evidence suggests that female executives are more risk averse and less likely to undertake value-destroying corporate actions, which in turn can increase creditor recovery rates if default occurs.

Prior literature also establishes that there are differences between female and male executives in financial reporting conservatism (Francis et al., 2015; Barua et al., 2010). Conservatism in financial reporting, as characterized by the recognition of bad news on a more timely basis, provides lenders with more time to take actions that mitigate potential downside risk (Zhang, 2008). In line with this, Donovan et al. (2015) show that conservatism increases creditor recovery rates. Accordingly, if female executives are more conservative, we expect a positive relationship between female executives and creditor recovery rates when a default occurs.

It is not clear, however, that female executives are associated with higher creditor recovery rates. While risk aversion can facilitate preservation of firm value, it can also destroy firm value. Risk averse managers may hold on to assets and/or investments with deteriorating valuations, which would provide little to no liquidation value that can be used to pay off outstanding debt upon default of the firm (Huang and Kisgen, 2013). Moreover, differences in risk tolerance or personality traits between females and males in the general population may not exist among top executives, as females that ascend to a top management position may not be representative of females in the general population (Atkinson et al., 2003; Adams and Funk, 2012; Adams and Ragunathan, 2017). Furthermore, creditors have access to a firm's private information (Armstrong et al., 2010), such that differences in reporting conservatism between female and male executives may not lead to differences in creditor recovery rates.

To shed light on the research question, we empirically examine the relationship between executive gender and creditor recovery rates. We obtain data on executive gender – that is, chief executive officer (CEO) and chief financial officer (CFO) – from ExecuComp, BoardEx,

and corporate reports. Following prior studies (e.g., Altman et al., 2005; Metz et al., 2012; Jankowitsch et al., 2014), we measure recovery rates as debt price at default.<sup>2</sup>

We find evidence that female executives are associated with higher creditor recovery rates. The average creditor recovery rates for firms run by female executives (CEO and/or CFO) is 55.48 percent of par relative to 47.74 percent of par for male-run firms. Multivariate analyses confirm that female executives exhibit higher creditor recovery rates compared with male executives. Our baseline analyses across the gender classifications of top executives indicate that creditor recovery rates range from 11 to 13 percent of par higher for female-run firms.

Empirical tests on the effects of gender are subject to endogeneity concerns. The issue is that executive gender is not random, such that firms which are likely to hire female executives may also have higher recovery rates. To increase the likelihood for causal inferences, we employ the Heckman two-stage self-selection model following Francis et al. (2013). We also employ a two-stage model that first predicts executive gender and then uses the unexplained gender as the explanatory variable of interest, in line with Gul et al. (2011). Our findings are robust to these treatments of endogeneity.

Next, we suggest and examine potential channels through which executive gender affects creditor recovery rates. The channels we explore are executive conservatism in financial reporting and risk taking. First, we capture conservatism in financial reporting using measures of accruals and reporting skewness. Following the approach in Saunders and Steffen (2011), we augment our baseline equation with separate control variables for each measure of the channels and add interaction terms for each new separate control variable with executive gender to assess the differential effect of each mechanism on recovery rates for creditors of female and male-run firms. We find some evidence that the effect of gender on creditor recovery rates are more pronounced for higher conservatism firm-years. The coefficients on the interaction terms for gender and the measures of financial reporting are generally positive and significant, suggesting that female executives recognize bad news on a more timely ba-

---

<sup>2</sup>The price at default is a percent of par, ranging from 0 (no recovery) to 100 (full recovery). We obtain the data from Moody's Default and Recovery Database (DRD).

sis. Timeliness in bad news recognition allows lenders to take protective actions to mitigate downside risk (Zhang, 2008), which in turn can increase creditor recovery rates.

Second, we capture conservatism in risk taking using a novel measure based on the firm's debt usage. For this test, we examine whether executive gender is associated with debt use. Specifically, we test whether female executives issue debt that they are likely to use. Following Berg et al. (2016), we use loan fees to infer expected debt usage: (i) borrowers are likely to select into a contract with a higher commitment fee<sup>3</sup> if there is a high likelihood of future usage of the loan commitment, and (ii) utilization fees are lower for borrowers that expect to use loan commitments. Our findings reveal that commitment fees on loans are higher for female-run firms, suggesting that female executives seek access to credit lines if there is a higher likelihood of the firm using the loan. We also find that utilization fees are lower for firms run by female executives. We interpret these findings as evidence that female executives are more conservative in their approach to debt, borrowing the amount of debt that the firm needs.<sup>4</sup> Such conservatism can increase creditor recovery rates.

Seeking additional evidence, we examine whether differences in creditor recovery rates persist across different default types. We separate our baseline sample into the three default types, namely chapter 11 bankruptcy, distressed exchange, and missed payments. Our results indicate that the effect of executive gender on creditor recovery rates persists across the default types, but the impact is generally smaller for chapter 11 bankruptcy events. This may be consistent with leadership features mattering less when there is little room for executive influence; chapter 11 bankruptcy outcomes depend more on formal legal procedures (Franks and Torous, 1994). We also perform cross-sectional tests related to the timing of default, examining how the 2008 global financial crisis affects the relationship between executive gender and creditor recovery rates. We do not find evidence that the effects of executive gender are more or less pronounced in the crisis period.

---

<sup>3</sup>commitment fee is the fee paid by borrowers on the unused portion of loan commitment

<sup>4</sup>This evidence complements findings in Huang and Kisgen (2013) that male executives issue debt more often than female executives.

Finally, we examine a variety of factors that moderate or subsume the effects of gender on creditor recovery rates. Consistent with evidence that gender diversity at the corporate board level affects corporate outcomes (e.g., Carter et al., 2017), we examine whether and how gender diversity at the corporate board level affects the relationship between executive gender and creditor recovery rates.<sup>5</sup> We do not find evidence that the effect of executive gender is more or less pronounced as the proportion of female non-executive directors increases. We also find that the effect of executive gender is mostly not moderated by an increase in the proportion of closely-held shares, which are generally considered a sign of weak governance. However, we do find that the effect of executive gender on creditor recovery rates is more pronounced when the defaulting debt includes guarantors. This may indicate the willingness of female executives to facilitate creditor access to assets in subsidiaries or other related entities through loan guarantees. Our evidence do not support an alternative explanation that lenders may be more likely to demand debt guarantors when they issue debt to female-run firms. Overall, the baseline effect of gender on creditor recovery rates remains.

Our study contributes to the growing literature on managerial style and characteristics (Weisbach, 1995; Bertrand and Schoar, 2003; Kaplan et al., 2012). We focus on how a specific managerial characteristic, gender, relates to creditor recovery rates. We contribute to the existing literature investigating the effects of gender on corporate outcomes such as firm performance (e.g., Khan and Vieito, 2013), investment decisions and capital allocation efficiency (e.g., Huang and Kisgen, 2013; Kolev, 2012), and loan contracting (e.g., Francis et al., 2013). A focus on creditor recovery rates is important because they are a key component of credit risk and, in practice, expected recovery rates are an important ingredient in pricing financial contracts and developing regulatory frameworks such as the Basel Accords (Jankowitsch et al., 2014; Altman and Kalotay, 2014).

A benefit of our research setting is that creditor recovery rates are less subject to bias or discrimination than ex ante determined credit conditions at loan origination. Hauptmann

---

<sup>5</sup>Carter et al. (2017) find that there is a gender pay gap in executives positions and that this gap is moderated by the diversity of corporate boards.



et al. (2018) show that companies run by female executives attain lower bank loan spreads, however that this depends on the cultural attitude towards female top executives. They find that this relation reverses when there are strong biases against women in leadership positions. Gender biases are also recorded in other settings where subjective evaluations are required, such as auditions of musicians (Goldin and Rouse, 2000) or job performance ratings (Fang and Huang, 2017) and have been found to be difficult to overcome (Bohnet et al., 2015). Although recovery rate outcomes may be less exposed to subjective assessments, we note that any bias against female executives would work against our hypothesis and imply lower recovery rates.

Our findings also contribute to the empirical literature examining the determinants of creditor recovery rates. Existing studies explore a variety of firm and debt characteristics that are important determinants of creditor recovery rates. These characteristics include default event type (Altman and Karlin, 2009), accounting conservatism (Donovan et al., 2015), industry affiliation (Acharya et al., 2007; Altman and Kishore, 1996; Schuermann and Hanson, 2004; Shleifer and Vishny, 1992), and several other factors such as firm profitability, asset tangibility, and macroeconomic indicators (Jankowitsch et al., 2014). We extend the existing literature by providing evidence that characteristics of corporate leadership predict creditor recovery rates if default occurs.

## **2 Data and research design**

This section discusses our data sources and sample selection, empirical methodology, and the sample descriptive statistics.

### **2.1 Data**

Our primary sample consists of default events from Moody's Default and Recovery (DRD) database, which contains historical default and recovery data based on private and public

debt instruments. The initial sample comprises 6,768 observations of defaulted debt instruments with information on each debt instrument’s default price, which we use to capture creditor recovery rates (*RecoveryRate*). This is the trading price of defaulted debt, expressed as a percentage of par, as of the default date for distressed exchanges, or 30 days after default for all other types of default as reported in Moody’s DRD. Our analyses focus on the default events for US publicly traded firms; the DRD contains defaults events for all types of organizations, including municipalities, countries, and non-profits around the world.

The information on the gender of the executives comes from a combination of ExecuComp, BoardEx, and company annual filings. ExecuComp covers executive compensation and selected personal information for most Standard and Poors (S&P) 1,500 public companies. BoardEx provides compensation and executive profiles of more than 800,000 companies across the world. We also supplement our executive gender information by manually looking up biographical information presented in annual reports and Form 10-Ks.<sup>6</sup>

We match each default instrument to executive gender information and accounting data based on the most recent fiscal year in the Compustat annual files prior to the default date. Some firms are matched using a combination of six-digit CUSIP and ticker symbols, while the majority of firms in Moody’s DRD is matched to Compustat manually. After merging the gender information, default and recovery data, and accounting information, the final sample contains 2,288 observations for 503 unique firms covering the period from 1982 to 2015. Table 1 panel A presents the sample selection criteria and associated firm-year observations.

Table 1 panels B and C provide the frequency distribution of firm-year observations across industries and years. Notably, a significant proportion of defaults occurred around the global financial crisis. Roughly 27 percent (617 out of 2,288) of defaults in our sample are matched to the 2009 fiscal year. Later, we investigate the crisis period in more detail.

We present some of our analyses on a restricted sample consisting of firm-years when at least one default event is for female-run firms. As shown in Table 1 panel C, the final sample

---

<sup>6</sup>We manually checked the majority of the firms in all three data sources to increase the accuracy of the data collection.

of 2,288 observations covering the period from 1982 to 2015 contains firm-years in which the proportion default events for female-run firms is zero (i.e., 1982 - 1993, 1995, 1997, 2014, 2015). The sample excluding these firm-years contains 1,932 observations for 401 unique firms.

## 2.2 Empirical research design

Our primary proposition is that creditor recovery rates at default are higher for firms run by female executives relative to firms run by male executives. To test this, we empirically examine the relationship between indicator variables for executive gender and creditor recovery rates. Specifically, following existing studies (e.g., Acharya et al., 2007; Jankowitsch et al., 2014), we regress creditor recovery rates on our explanatory variable of interest using the ordinary least squares (OLS) regression as follows:

$$RecoveryRate_{it} = \delta_0 + \delta_1 * Gender_{it} + \sum \lambda_j Control_{j,it} + \varepsilon_{it} \quad (1)$$

where the dependent variable, *RecoveryRate*, reflects the price of debt instruments at default. *Gender* is our explanatory variable of interest, and alternatively takes one of three classifications of executive gender: indicator variable equal to one if the gender of the CEO and/or CFO is female and zero otherwise (*ExecGender*), indicator variable equal to one if the gender of the CEO is female and zero otherwise (*CEOGender*), and indicator variable equal to one if the gender of the CFO is female and zero otherwise (*CFOGender*). Consistent with our proposition that creditor recovery rates are higher for firms run by female executives than firms run by male executives, we expect a positive coefficient on the measures of *ExecGender* (i.e.,  $\delta_1 > 0$ ).

Control is a vector of selected independent variables that have been found to affect creditor recoveries in existing studies (e.g., Acharya et al., 2007; Jankowitsch et al., 2014). The control variables are selected to maximize sample size, while minimizing omitted variable

bias. The control variables include debt characteristics and firm characteristics. Debt characteristics include debt offer price (*OfferPrice*), coupon rate (*CouponRate*), default type (*Chapter11*, *DistressedExch*, *MissedPayment*), debt security (*SeniorSecured*), and default amount (*DefaultAmount*). We also add an indicator for bank loans (*BankLoan*) and regular bonds (*RegBonds*) as these debt type would affect the creditor recovery rates. Firm characteristics comprise measures of resources available or the ability of the firm to pay off debt claims upon default, such as firm size (*FirmSize*), profitability (*Profitability*), asset tangibility (*Intangibility*), receivables (*Receivables*), number of employees (*Employees*), long term debt ratio (*LTDebt*), and the default barrier (*DefaultBarrier*). We provide definitions of the variables in Appendix A.

We also include fixed effects for the year and industry to control for year and industry characteristics that may affect creditor recovery rates.<sup>7</sup> A defaulting firm may have multiple defaulted instruments per default event. Accordingly, all our empirical tests are based on standard errors corrected for clustering at the firm level. All continuous variables are winsorized at the bottom and top one percent.

## 2.3 Descriptive statistics

Table 2 presents the summary statistics for the main variables used in this study. Approximately 4 percent of our sample comprises female top executives, either as the CEO or the CFO (*ExecGender*). Female CEOs (*CEOGender*) make up about 1 percent of the sample, while female CFOs (*CFOGender*) comprise about 3 percent. The average *RecoveryRate* is 48.02 percent of par value, indicating that about half of outstanding debt is recovered at default. Most debt instruments are offered at an *OfferPrice* of 100 and a *CouponRate* that is on average at 10.98 percent. Of the debt instruments in our sample, 16 percent are senior secured (*SeniorSecured*) and have average default amount (*DefaultAmount*) of US\$248.06

---

<sup>7</sup>We do not employ firm-fixed effects design in our creditor recovery tests because the majority of firms in our sample do not appear more than once in the sample by year; defaults do not occur frequently for a given firm.

million.

The data distinguishes between three types of defaults: Distressed exchange (*DistressedExch*), chapter 11 bankruptcy (*Chapter11*), and missed payments (*MissedPayments*). In the case of a *DistressedExch*, the borrower proposes changes to the contractual agreement, to which the creditors can voluntarily agree. In a *Chapter11* bankruptcy, either the borrower or creditor can file bankruptcy with a federal court at which point the assets are liquidated or restructured (Jankowitsch et al., 2014). *MissedPayments* indicates the borrower missed a contractually obligated principal or coupon payment.

With regard to the firm characteristics, we note that companies in our sample have an average of US\$47 million in total assets. The average operating earnings scaled by total assets (*Profitability*) is 8.25 with a standard deviation of 2.26. Intangible assets to total assets (*Intangibility*) is one percent at the mean, with a maximum of 34 percent. Total receivables scaled by assets (*Receivables*) ranges from 0 to 65 percent, with an average of 9 percent. We document a large variation in the number of employees (*Employees*) at each firm, with an average of 42.31 and a standard deviation of 193.93. Long term debt to total debt (*LTDebt*) averages 64 percent and the distance to default (*DefaultBarrier*) is at 37 percent, measured as short-term debt plus one half long-term debt scaled by total assets.

Untabulated results show that correlations between the *RecoveryRate* and control variables are generally consistent with prior literature. For example, larger and more profitable firms tend to exhibit higher *RecoveryRate*. The highest correlations are found between our different measures of executive gender (*ExecGender*, *CEOGender*, and *CFOGender*), as expected by construction.

### 3 Results

This section presents our univariate and baseline multivariate results. We also present selection models and associated results to address endogeneity concerns.

### 3.1 Univariate differences

Table 3 provides initial evidence on differences in recovery rates across female and male-run firms. Panel A shows that, without yet controlling for any confounding factors, companies with female executives have an average default price of 55.48 while male-run companies exhibit a default price of 47.74 percent for a difference of 7.74 percent. The difference is statistically significant (i.e., greater than zero) with a t-statistic of 2.43. Panel B shows that the univariate difference for recovery rates do not hold in the univariate for CEO gender, possibly due to the small sample of female CEO. The mean recovery rates for firms run by male CEOs is 47.96 relative to 54.21 for female-run firms. The t-statistic for the test of the difference is insignificant at -1.08. Panel C shows that the difference in recovery rates strongly holds for the CFO gender. The mean recovery rates for firms run by male CFO is 47.73 and for firms with female CFO is 57.86 percent. These means are statistically different, with a t-statistic of -2.86. Overall, these results provide initial evidence that firms run by female executives (at least for the combined CEO and CFO sample and CFO sample) yield higher creditor recovery rates upon default.

The results in Table 2 also highlight differences between female-run and male-run firms in terms of firm characteristics and debt characteristics. For example, Panel A shows that female-run firms tend to have chapter 11 bankruptcies rather than distressed exchanges and that female-run firms are smaller in terms of total assets, have more intangible assets, have less receivables, and have a greater number of employees. Next, we perform various multivariate tests controlling for these factors in order to isolate the incremental effects of executive gender on creditor recovery rates.

### 3.2 Multivariate results: gender and creditor recovery rates

Table 4 presents the multivariate results from estimating equation 1 on the relationship between creditor recovery rates and executive gender, controlling for debt and firm characteristics along with year and industry fixed effects. We document higher creditor recovery

rates as evidenced by positive and significant coefficients across all specifications of executive gender. Column (1) shows positive and significant coefficients (coeff. = 11.35, t-stat = 3.13) for CEO or CFO gender (*ExecGender*), column (2) shows results for CEO gender (*CEOGender*) (coeff. = 11.36, t-stat = 2.04), and column (3) shows the results for CFO gender (*CFOGender*) (coeff. = 12.68, t-stat = 3.18). These results in column (1) to (3) are based on the full sample, from 1982 - 2015. We document consistent results in columns (4) to (6) when we restrict the sample to only those firm-years with at least one default event for female-run firms. The results are positive and significant in column (4) for *ExecGender* (coeff. = 11.05, t-stat = 2.85), in column (5) for *CEOGender* (coeff. = 11.58, t-stat = 1.91), and in column (6) for *CFOGender* (coeff. = 12.34, t-stat = 2.89).

The economic magnitudes are significant. The coefficient in column (1) for *ExecGender* (coeff. = 11.35) suggests that the creditors of firms run by female executives have recovery rates that are 11.35 percent of par higher than creditors of firms run by male executives. The interpretation of the results is that for every one dollar of outstanding debt, creditors can recover 11.35 cents more from firms run by female executives relative to firms run by male executives. The average default amount in our sample is \$248.06 million, which implies that creditors of firms run by female executives recover about \$28.15 million (i.e., 11.35 percent  $\times$  \$248.06 million) more than creditors of firms run by male executives.

The economic magnitude is similar for the CEO and slightly greater for the CFO. Using a similar interpretation as for column (1) above, the coefficient in column (3) for *CFOGender* (coeff: 12.68) suggests that creditors of firms run by female CFOs can receive about \$31.45 million (i.e., 12.68 percent  $\times$  \$248.06 million) more in recovery amounts than creditors of firms run by male CFOs. These results suggest an economically significant effect of gender on creditor recovery rates, which is also similar for the restricted sample based on the similarities in the magnitudes of the coefficients in columns (4) to (6) to the corresponding coefficients in columns (1) to (3).

Using the coefficients in column (1) as an example, the results on the control variables are

similar to those in existing studies. Creditor recovery rates are higher for distressed exchanges (*DistressedExch*) (coeff. = 27.12, t-stat = 10.81) and lower for chapter 11 bankruptcies (*Chapter11*) (coeff. = -4.95, t-stat = 1.88). Recovery rates are higher for secured debt (*SeniorSecured*) (coeff. = 29.37, t-stat = 11.37) as lenders can repossess underlying debt security. We also show that creditor recovery rates are greater for larger firms (*FirmSize*) (coeff. = 1.91, t-stat = 2.67) and more profitable firms (*Profitability*) (coeff. = 22.43, t-stat = 3.22). We also find that creditor recovery rates are decreasing in the number of employees (*Employees*) (coeff. = -1.64, t-stat = -3.39). Employee benefits and other obligations may lower resources available to pay off lenders. As expected, firms with a closer distance to default or higher default barrier exhibit lower recovery rates (*DefaultBarrier*) (coeff. = -8.74, t-stat = -3.28).

### 3.3 Endogeneity concerns

Consistent with existing literature (e.g., Huang and Kisgen, 2013; Francis et al., 2015), we acknowledge and address endogeneity concerns associated with executive gender. The issue is that the appointment of females to corporate leadership positions is non-random. For example, the board of directors hiring for CEO or CFO positions may discriminate based on gender. In this scenario, factors associated with the board of directors that choose to appoint a female executive could also be associated with the outcomes in our study (Carter et al., 2017). Furthermore, female executives may self-select into certain types of firms that are also associated with better creditor recovery outcomes irrespective of executive gender. As noted in Huang and Kisgen (2013), female representation is not uniform across all types of firms. Our data also supports this notion; some industries in our sample do not have female representation while others have considerable representation. For example, in our sample, there are no female representation in the agriculture, forestry and fishing industry. Within finance, insurance, and real estate only 1 percent of executives are female but female representation is at 12 percent for personal, business, and entertainment services. The firms



and industries that female executives select into might be associated with higher creditor recovery rates due to the nature of the business or other omitted factors.

Our empirical tests include a set of control variables to mitigate omitted variable bias arising from other factors driving our results. However, these may not fully address the endogeneity concerns. Accordingly, we rely on empirical techniques used in prior studies to address potential endogeneity concerns. We employ a Heckman two-stage self-selection model that uses the inverse mills ratio in the second stage regression (e.g., Francis, Hasan, and Wu, 2013) and a similar two-stage model that uses the residual from the first stage as the explanatory variable of interest in the second stage (e.g., Gul, Srinidhi, and Ng, 2011).

### 3.3.1 Heckman two-stage self-selection model

Following Francis et al. (2013), we employ a Heckman two-stage self-selection model. In the first stage, we use a probit model to predict the likelihood of female CEO or CFO. To ensure the second stage is not mechanically similar to the first stage, we run the probit regression of executive gender on a set of firm controls and alternatively on all baseline control variables (firm and debt characteristics in the primary regression, equation 1), and in each specification we include gender equality (*GenderEquality*) in the first stage but exclude it in the second stage. *GenderEquality* is associated with female executives in the first stage, but there is no reasonable basis for the variable to directly affect recovery rates in the second stage regressions. In the second stage we re-estimate our baseline empirical in equation 1, adding the inverse Mills Ratio computed from the first stage. The inverse Mills Ratio corrects for the endogeneity of the choice of executive gender. We specify the first stage model (equation 2) and second stage model (equation 3) as follows:

$$ExecGender_{it} = \delta_0 + \gamma_1 * GenderEquality_{it} + \sum \lambda_j Control_{j,it} + \varepsilon_{it} \quad (2)$$

$$RecoveryRate_{it} = \delta_0 + \delta_1 * ExecGender_{it} + \delta_2 * MillsRatio_{it} + \sum \lambda_j Control_{j,it} + \varepsilon_{it} \quad (3)$$

where, as described in equation 1, *RecoveryRate* is the price of debt instruments at default and *ExecGender* is an indicator variable equal to one if the firm has a female CEO or CFO, and zero otherwise. *GenderEquality* is a measure that captures variation in gender-role attitudes across states and over time. Koch and Thomsen (2017) created the time series data for the measure using two leading techniques for opinion estimation, multilevel regression and poststratification and survey aggregation, for the years 1972 - 2010. We fill in the missing data for the years after 2010 with data from 2010. *Control* is a vector of the same independent variables used in the primary regression (equation 1) and are as described in Appendix A. All the regressions include indicator variables for year and industry fixed effects, and the estimates are based on standard errors corrected for clustering at the firm level.

Table 5 reports the results from the first and second stage regressions. Column (1) shows the results for the first stage prediction of female gender based on gender equality and a set of firm characteristics and column (2) shows the results with all the baseline control variables included. We find that gender-role attitudes across states and over time are positively associated with executive gender (Column 1: coeff. = 0.08, t-stat = 3.33 and Column 2: coeff. = 0.08, t-stat = 3.19). Firms that are headquartered in states with favorable gender equality moods are more likely to hire female CEO or CFO.

Column (3) and (4) report the second stage OLS results including inverse Mills Ratio computed from Column (1) and Column (2), respectively. Consistent with our baseline findings, we document positive and significant coefficients on the indicator variables for executive gender (Column 3: coeff. = 10.70, t-stat = 2.74 and Column 4: coeff. = 10.67, t-stat = 2.74). These results are consistent with the proposition that creditors of firms

run by female executives have significantly higher recovery rates, even after controlling for endogeneity concerns.

### 3.3.2 Unexplained executive gender

To further increase the likelihood that our estimates provide a causal relation between executive gender and creditor recovery rates, we re-estimate our primary models with the unexplained executive gender following Gul et al. (2011). Similar to Gul et al. (2011), we first build a prediction model for executive gender, and then examine the relation between the unexplained executive gender and creditor recovery rates. On the one hand, if the factors used to predict executive gender also explain the variation in creditor recovery rates, then the indicator for female executives simply acts as an aggregate proxy for those factors, which are primarily firm characteristics. On the other hand, if the unexplained executive gender has a strong association with creditor recovery rates, it is more likely that executive gender is causally linked with creditor recovery rates (Gul et al., 2011).

We employ a first stage approach similar to equation 2 above: we include *GenderEquality* along with firm and all control variables, separately. In the second stage, we replace executive gender as our variable of interest with the unexplained component of executive gender computed as the residual from the first stage regression. The first stage and second stage models are specified as follows:

$$ExecGender_{it} = \delta_0 + \gamma_1 * GenderEquality_{it} + \sum \lambda_j Control_{j,it} + \varepsilon_{it} \quad (4)$$

$$RecoveryRate_{it} = \delta_0 + \delta_1 * UnexplainedExecGender_{it} + \sum \lambda_j Control_{j,it} + \varepsilon_{it} \quad (5)$$

where *ExecGender* is the dependent variable in the first stage and equals one for firm-years with female executives, and zero otherwise. *UnexplainedExecGender* is the explanatory

variable of interest in the second stage regression and is the residual from estimating the first stage model. *RecoveryRate* is the price of debt instruments at default. *Control* is a vector of the same independent variables used in the primary regression (equation 1) and are as described in Appendix A. As above, all regressions include indicator variables for year and industry fixed effects, and the estimates are based on standard errors corrected for clustering at the firm level.

Table ?? presents the results. Column (1) shows the results for the first stage prediction of female gender based on gender equality and a set of firm characteristics and column (2) shows the results with all the baseline control variables included. Column (3) and (4) report the second stage OLS results using the unexplained component of executive computed from residuals on the regressions in Column (1) and Column (2), respectively. We find that the unexplained executive gender has a positive and significant association with creditor recovery rates Consistent with our baseline findings, we document positive and significant coefficients on the indicator variables for executive gender (Column 3: coeff. = 2.53, t-stat = 3.80 and Column 4: coeff. = 3.76, t-stat = 2.50), thereby increasing the likelihood that executive gender is causally linked with creditor recovery rates.

## 4 Investigating the mechanisms

In this section, we suggest and examine potential channels through which executive gender may affect creditor recovery rates in the event of a default. We examine whether the effects of gender are more pronounced across measures of conservatism in financial reporting and whether executive gender, in our sample, is associated with risk taking behavior.

### 4.1 Conservatism in financial reporting

We expect conservatism to be a potential channel through which gender affect creditor recovery rates based on prior findings that female executives are more conservative in their

financial reporting (Francis et al., 2015). Financial reporting conservatism recognizes bad news on a more timely basis. Such timeliness in the recognition of bad news allows lenders to take protective actions to mitigate downside risk (Zhang, 2008), which in turn can increase creditor recovery rates. Donovan et al. (2015) show that accounting conservatism is associated with higher creditor recovery rates.

To determine whether conservatism in financial reporting is a channel through which gender can affect the creditor recovery rates, we follow the approach in Saunders and Steffen (2011) and augment our baseline equation with separate control variables for each measure of conservatism and add interaction terms for each measure with executive gender. We use the interaction terms to assess the differential effect of each measure on recovery rates for creditors of female and male-run firms. We use two measures of conservatism that are closely related to reporting policies regarding expected future losses. The first measure is the negative non-operating accruals (*Accruals*). This measure estimates the extent to which a firm reports anticipated losses through write-offs and other negative non-operating accruals. The second measure is the difference between the skewness in the operating cash flows and the earnings of the firm (*Skewness*). A lower value of skewness indicates a greater alignment between cash flows and earnings, suggesting more conservative reporting. These measures are based on prior literature (see Donovan, Frankel, and Martin, 2015; Beatty, Weber, and Yu, 2008) and proxy for the timely recognition of bad news.<sup>8</sup> We transformed the measures such that higher values indicate more conservatism in financial reporting and expect a positive coefficient on the interaction terms between conservatism and executive gender.

Table 7 presents the findings on conservatism. With non-operating accruals as the measure of conservatism, the coefficient on executive gender continues to be positive and significant in column (1) for *ExecGender* (coeff. = 11.07, t-stat = 3.13), column (3) for *CEO Gender* (coeff. = 7.08, t-stat = 2.00), and column (5) for *CFO gender* (coeff. = 12.64, t-stat

---

<sup>8</sup>Following Beatty, Weber, and Yu (2008), we also use market-to-book as proxy for conservatism. We find some consistent results, but opt not to discuss or tabulate because market-to-book is based on the stock market, which can reflect several other factors unrelated to reporting policies of the firm.

= 2.98). Importantly, the coefficients on the respective interaction terms are also positive and significant in column (1) for *ExecGender \* Accrual* (coeff. = 10.12, t-stat = 3.61), column (3) for *CEO Gender \* Accrual* (coeff. = 13.93, t-stat = 3.49), and column (5) for *CFO gender \* Accrual* (coeff. = 8.33, t-stat = 2.83).

With *Skewness* as the measure of conservatism, we find that the coefficients on executive gender continue to be positive and significant across all specifications of gender in column (2), (4), and (6). However, the interaction terms are not statistically significant in column (2) for *ExecGender \* Skewness* (coeff. = 2.60, t-stat = 0.73) and column (4) for *CEO Gender \* Skewness* (coeff. = -1.37, t-stat = 0.22). Yet the results are statistically significant in column (6) for *CFO gender \* Skewness* (coeff. = 6.17, t-stat = 1.79). The proportion of female executives is much higher for CFOs than for CEOs, which may explain the significant results for CFO rather than CEO.

Overall, we interpret these findings as evidence that conservatism in financial reporting explains, at least in part, the relation between executive gender and creditor recovery rates.

## 4.2 Conservatism in Debt usage: a proxy for risk taking behavior

We also explore conservatism of the executives in risk taking. We capture conservatism in risk taking using a novel approach based on the firm's debt usage. Specifically, we test whether female executives issue debt that they are likely to use on the premise that access to excess financial resources could cause executives to take unnecessary risks (Jensen, 1986).

Following Berg et al. (2016), we use loan fees to infer expected debt usage. First, we use commitment fee structure which represents the fee paid by borrowers on the unused portion of a loan commitment. Berg et al. (2016) highlight that borrowers are likely to select into a contract with a higher commitment fee if there is a high likelihood of future usage of the loan commitment. Accordingly, if female executives are more conservative in their approach to debt usage, we expect female executives to self-select into contracts with higher commitment fees on the premise that the conservative female executives borrow only what the firms needs

and thus will not need to pay a fee on unused portion of loan commitment. Second, we use utilization fees which represents fee payable if utilization exceeds a certain percentage of the credit line. Berg et al. (2016) suggest that borrowers self-select into contracts that carry low utilization fees if there is a higher likelihood the borrowers would use loan commitments in the future. Accordingly, if female executives borrow what they expect to use then we expect female executives to select into contracts with low utilization fees.

To tests these propositions we estimate a regression of loan fees on executive gender and control variables. We specify the following regression model:

$$LoanFees = \delta_0 + \delta_1 * ExecGender_{it} + \sum \lambda_j Control_{j,it} + \varepsilon_{it} \quad (6)$$

where the dependent variable, *LoanFees*, takes on the values of commitment fees and utilization fees in separate regressions. The loan fees data is added to the sample of defaults such that we are estimating fees at bank loan origination on characteristics at default. We expect a positive coefficient on commitment fees and a negative coefficient on utilization fees consistent with female executives self-selecting into contracts indicative of their high expected use of borrowed debt.

Table 8 reports the results on debt usage analyses. Consistent with our expectations, our findings reveal that commitment fees on loans are higher for female-run firms. The coefficients on executive gender variables are positive and significant in the regressions of commitment fees in columns (1) to (3). We also find that utilization fees are lower for firms run by female executives as evidenced by the negative and significant coefficients on executive gender in the regressions of utilization fees in column (4) to (6).

We interpret these findings as evidence that female executives are more conservative in their approach to debt, borrowing the amount of debt that the firm needs.<sup>9</sup> A conservative and prudent approach to debt usage can manifest in managers entering into debt contracts

---

<sup>9</sup>This evidence complements findings in Huang and Kisgen (2013) that male executives issue debt more often than female executives.

with the debt amount that the firm is expected to use and not subject the firm to excessive debt levels. Such conservatism can increase creditor recovery rates in the event of default.

## 5 Cross-sectional Analyses

This section presents additional analyses to shed light on whether the effect of executive gender persists across default types and the financial crisis. We also provide cross-sectional tests of factors that attenuate or enhance the effect of executive gender on creditor recovery rates. These tests also serve to rule out potential alternative explanations, such as whether executive gender simply proxy for overall corporate governance.

### 5.1 Default type

Seeking additional evidence, we examine whether the effects of executive gender on creditor recovery rates persist across different default types. We split our data into three samples based on Moody's DRD default type: Chapter 11 defaults (*Chapter11*), distressed exchanges (*DistressedExch*), and missed payments (*MissedPayment*).

Table 9 reports the results from the regression of creditor recovery rates on executive gender and control variables for each of the three default type samples. We note that the samples for each default type are of similar size - that is, 745, 686, and 857, respectively.<sup>10</sup> The results show that the coefficient on *ExecGender* is positive and insignificant for chapter 11 defaults (coeff. = 3.89, t-stat = 1.10) in column (1), positive and significant for distressed exchanges (coeff. = 18.43, t-stat = 2.43) in column (3), and positive and significant for missed payments (coeff. = 13.70, t-stat = 1.97) in column (5). The coefficient on CFO Gender is positive and significant across all the default types: chapter 11 (coeff. = 6.78, t-stat = 1.79) in column (2), distressed exchanges (coeff. = 18.43, t-stat = 2.43) in column (4), and missed payments (coeff. = 15.59, t-stat = 1.90) in column (6). In untabulated results, we find that

---

<sup>10</sup>Table 2 also shows these default types are 33 percent, 30 percent, and 37 percent of the sample, respectively.



the coefficients on *CEOGender* are positive but statistically insignificant across all default types. This is possibly due to low power of the tests from the small proportion of female CEO in each default type sample. In fact, we dropped the distressed exchanges analyses because there are no female CEOs in the distressed exchange sample.

Overall, where we have a sufficient sample size for female executives, we document that the effects of executive gender on creditor recovery rates persists across all the default types. However, the results indicate that the magnitude of effect of executive gender on creditor recovery rates is generally smaller for chapter 11 bankruptcy events (and insignificant for *ExecGender*). This may be consistent with leadership features mattering less when there is little room for executive influence as chapter 11 bankruptcy outcomes depend more on formal legal procedures (Franks and Torous, 1994).

## 5.2 The effect of the global financial crisis

Next, we perform cross-sectional tests related to the timing of default. A significant portion of defaults occurred in the fiscal year immediately following the 2008 global financial crisis. Prominent figures such as Christine Lagarde, the Managing Director of the International Monetary Fund, famously claimed that the crisis might have looked quite different if Lehman Brothers had been "Lehman Sisters" (Adams and Rangunathan, 2017). To determine whether and how the effects of executive gender on creditor recovery rates change during the financial crisis we present two sets of findings. First, we look at the changes in the frequency of defaults. Second, we re-estimate our baseline tests on the sample of crisis and non-crisis firm-years. We introduce an indicator variable equal to one for the crisis period (2008 and 2009) and zero otherwise (*Crisis*).

Table ?? presents the findings. Panel A shows the sample characteristics of crisis and non-crisis period. There are 761 observations in the crisis period and female executives make up about 2.89 percent for CEO or CFO combined, 0.53 percent for CEOs, and 2.37 percent for CFOs. While these percentages drop from the proportion of female executives in the

non-crisis period, the differences are not statistically significant or are weakly significant. Accordingly, it is not clear that the risks between female and male executives are more or less pronounced in the extreme event of a global crisis.

Nonetheless, the effect of executive gender on creditor recovery rates persists in the non-crisis and crisis periods. Table ?? Panel B shows that there are no statistically significant differences in the creditor recovery rates for female executives in the non-crisis and crisis period. The coefficients on *ExecGender* are generally positive and significant for the non-crisis period (coeff. = 13.28, t-stat = 3.28) in column (1) and the crisis period (coeff. = 8.73, t-stat = 1.53) in column (2). The coefficient on the interaction term between *ExecGender* and *Crisis* in column (3) is not different than zero (coeff. = -5.05, t-stat = -0.79). Moreover, the coefficients on *CFOGender* are strongly positive and significant for the non-crisis period (coeff. = 14.02, t-stat = 3.03) in column (4) and the crisis period (coeff. = 14.47, t-stat = 2.44) in column (5). The coefficient on the interaction term between *CFOGender* and *Crisis* in column (6) is also not different than zero (coeff. = -0.77, t-stat = -0.11).<sup>11</sup>

Altogether, these findings suggest that extreme events, such as the global financial crisis, do not necessarily alter the relation between executive gender and recovery rates. Executive gender continues to have a positive association with creditor recovery rates and these findings are not more or less pronounced during the financial crisis. These findings also rule out the possibility that the effects of gender could be driven by the global financial crisis, which intensified creditor losses and capital market losses which would disproportionately impact male-run firms as there are more such firms.

### 5.3 The effects of governance

In line with ruling out alternative explanations, we also explore whether and how the firm's governance moderate the relationship between executive gender and creditor recovery rates.

---

<sup>11</sup>We dropped the analyses for *CEOGender* because the % female CEOs in the crisis period is very small to make reasonable inferences. Overall, sample sizes are a limitation in the studies of the top executives because there are very few female top executives as a whole and let alone in the default sample.

We consider three forms of governance, namely diversity of the board, concentrated share-ownership, and creditor protection by means of guarantors.

### 5.3.1 Board diversity and closely-held shares

We measure gender diversity on the corporate board of directors as the percentage of female non-executive directors on the board of directors. A higher female representation on the board can enhance the effect that a female executive has on creditor recovery rates. It can also substitute this effect, such that the effect of female executives is subsumed by that of female directors. Adams and Ferreira (2009) show that women on boards are more likely to join monitoring committees. This can facilitate greater conservatism in reporting and corporate decisions which can improve corporate outcomes. A diverse board may also allow female executives greater freedoms in decision making more so than when the board is dominated by male directors that are possibly "egocentric" (Jia et al., 2014).

We also examine the effect of closely held shares on the relationship between executive gender and creditor recovery rates. Closely held shares may be indicative of generally less effective governance (Nagar et al., 2011). Accordingly, if the effect of executive gender documented in this study is a proxy for overall governance of the firms, then the results would be less pronounced as the percent of closely-held shares increase.

Table 11 Panel A reports the results on these governance measures. We do not find evidence that diversity on the board moderates the relationship between executive gender and creditor recovery rates. The coefficient on the interaction terms between *Gender* \* *FemaleNED* are not statistically significant across all specifications of gender: *ExecGender* (coeff. = 0.73, t-stat = 0.09) in column (1), *CEOGender* (coeff. = -5.62, t-stat = -0.36) in column (3), and *CFOGender* (coeff. = -2.07, t-stat = -0.25) in column (5). While the significance of the main effect on *ExecGender* weakens (coeff. = 10.81, t-stat = 1.55), a joint test of the main effect and the interaction term in column (1) indicates that the effects of executive gender continues to be positive. More clearly, the coefficient on *CFOGender*

in column (5) remains positive and significant (coeff. = 14.40, t-stat = 2.03). The point estimates are consistent with the baseline results.

With respect to closely-held shares as a governance measure, we find that the main effect of executive gender continues to be positive and significant in column (2), (4), and (6). We document negative coefficients on the interaction terms between *Gender \* CloselyHeld* suggesting that the effect of executive on creditor recovery may be less pronounced when a greater percentage of shares is closely held. However, the negative coefficients are only significant for *CEOGender* (coeff. = -0.72, t-stat = -3.48) in column (4) but not statistically significant on *ExecGender* (coeff. = -0.20, t-stat = -1.34) in column (3) and *CFOGender* (coeff. = -0.15, t-stat = -0.89) in column (6).

Overall, these results suggests that our measures of governance do not attenuate or enhance the effect of executive gender on creditor recovery rates. These findings can also be interpreted as evidence that executive gender diversity does not simply proxy for overall corporate gender diversity at the board level or the influence of a few powerful shareholders.

### 5.3.2 Creditor protection through loan guarantors

For creditor protection by means of guarantors, we examine whether and how the relationship between executive gender and recovery rates changes by having a guarantor on the debt instruments. Having a guarantor distributes credit risk across multiple entities and can increase creditor recovery rates if default occurs as creditors can seek compensation from more than one entity (Whittred, 1987). However, Squire (2011) highlight that firms can overuse guarantees which undermine transparency, complicate debt negotiations or bankruptcy proceedings, and introduce other distortions inherent in dealing across legal entities. These factors may lower recoveries.

Table 11 Panel B reports the results of our analyses on loan guarantors. In the first three columns, we present the results of estimating our baseline regression with additional variables for loan guarantors. We find that the effect of executive gender is more pronounced

for cases where loan guarantors exist. The coefficient on *Gender \* Guarantor* is positive and significant for *ExecGender* (coeff. = 12.42, t-stat = 1.85) in column (1) and *CFOGender* (coeff. = 17.62, t-stat = 2.26) in column (3). The coefficient is also positive for *CEOGender* in column (2) but it is not significant (coeff. = 6.46, t-stat = 0.77). The coefficients on the main effects continue to be positive and significant for *ExecGender* (coeff. = 5.91, t-stat = 1.81) in column (1) and *CFOGender* (coeff. = 7.22, t-stat = 2.39) in column (3), and positive but insignificant for *CEOGender* (coeff. = 5.81, t-stat = 0.81) in column (2).

Taken together, the findings show that executive gender, especially CFO gender, continues to matter for creditor recovery rates but having a loan guarantor further improves recovery rates for creditors of female-run companies. A potential explanation is that female executives are more willing to facilitate creditor access to assets in subsidiaries or other related entities through loan guarantees. For the results where loan guarantor matter, we do not find evidence that loans to female executives are simply more likely to have loan guarantors; the coefficients on *Gender* in column (4) and (6) are not statistically significant indicating that the likelihood of loan guarantors is not statistically different for female executives. Overall, the baseline effect remains that executive gender has a positive association with creditor recovery rates.

## 6 Conclusion

In this paper, we examine the relationship between executive gender and creditor recovery rates and show that creditors to female-run firms have higher recovery rates in the event of default. Our baseline results show that creditors of firms run by female executives can recover up to 12.68 cents more per every dollar of outstanding debt than creditors to male-run firms if default occurs.

To increase the likelihood that our findings are causal, we employ a set of econometric techniques to address endogeneity concerns. We first control for observable characteristics,

and then employ a Heckman two-stage selection model to correct for potential self-selection bias. We also estimate the unexplained gender effect which removes partial correlations between gender and observable firm characteristics. Our results continue to hold.

In seeking additional evidence, we perform a battery of cross-sectional tests. We find that the effect of executive gender on creditor recovery rates persists across different default types, but with smaller magnitude or weaker significance on chapter 11 bankruptcy. We also find that the effects of executive gender does not vary between crisis and non-crisis period based on the 2008 global financial crisis. Our findings also suggests that corporate governance, in the form of corporate board diversity and closely-held shares, does not moderate the effects of executive gender on creditor recovery rates. We interpret these findings as evidence that the effects of executive gender do not simply proxy for strong corporate governance.

A host of existing studies examines the role of gender in firm value creation through its effects on operating performance, investment decisions, and capital allocation efficiency. Other studies also investigate the effects of gender on borrowing costs. We extend the existing literature by showing that executive gender affects creditor recovery rates if default occurs. These findings add to the evidence on the role of gender in capital markets as the issue of gender diversity becomes increasingly salient. Overall, gender is an important characteristic of executives and has a nontrivial influence on corporate decisions and outcomes.

Our results have important implications for credit risk assessments. With a rising global debt burden and many analysts concerned about the “corporate debt bubble”<sup>12</sup>, it is of paramount importance to understand the factors that drive creditor recovery rates, which form a key component of the cost of debt.

---

<sup>12</sup>See [www.mckinsey.com/mgi/overview/in-the-news/are-we-in-a-corporate-debt-bubble](http://www.mckinsey.com/mgi/overview/in-the-news/are-we-in-a-corporate-debt-bubble), last accessed July 31, 2018

## References

- Acharya, V. V., S. T. Bharath, and A. Srinivasan (2007). Does industry-wide distress affect defaulted firms? Evidence from creditor recoveries. *Journal of Financial Economics* 85(3), 787–821.
- Adams, R. B. and D. Ferreira (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics* 94(2), 291–309.
- Adams, R. B. and P. Funk (2012). Beyond the glass ceiling: Does gender matter? *Management Science* 58(2), 219–235.
- Adams, R. B. and T. Kirchmaier (2016). Women on boards in finance and stem industries. *American Economic Review* 106(5), 277–81.
- Adams, R. B. and V. Raganathan (2017). Lehman sisters. *Working Paper*.
- Adhikari, B. K., A. Agrawal, and J. Malm (2018). Do women managers keep firms out of trouble? evidence from corporate litigation and policies. *Journal of Accounting and Economics*.
- Altman, E., B. Brady, A. Resti, and A. Sironi (2005). The link between default and recovery rates: Theory, empirical evidence, and implications. *The Journal of Business* 78(6), 2203–2228.
- Altman, E. I. and E. A. Kalotay (2014). Ultimate recovery mixtures. *Journal of Banking & Finance* 40, 116–129.
- Altman, E. I. and B. Karlin (2009). The re-emergence of distressed exchanges in corporate restructurings. *Working Paper*.
- Altman, E. I. and V. M. Kishore (1996). Almost everything you wanted to know about recoveries on defaulted bonds. *Financial Analysts Journal* 52(6), 57–64.
- Armstrong, C. S., W. R. Guay, and J. P. Weber (2010). The role of information and financial reporting in corporate governance and debt contracting. *Journal of Accounting and Economics* 50(2), 179–234.
- Atkinson, S. M., S. B. Baird, and M. B. Frye (2003). Do female mutual fund managers manage differently? *Journal of Financial Research* 26(1), 1–18.
- Barua, A., L. F. Davidson, D. V. Rama, and S. Thiruvadi (2010). CFO gender and accruals quality. *Accounting Horizons* 24(1), 25–39.
- Beatty, A., J. Weber, and J. J. Yu (2008). Conservatism and debt. *Journal of Accounting and Economics* 45(2-3), 154–174.
- Berg, T., A. Saunders, and S. Steffen (2016). The total cost of corporate borrowing in the loan market: Don’t ignore the fees. *The Journal of Finance* 71(3), 1357–1392.

- Bertrand, M. and A. Schoar (2003). Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics* 118(4), 1169–1208.
- Bohnet, I., A. Van Geen, and M. Bazerman (2015). When performance trumps gender bias: Joint vs. separate evaluation. *Management Science* 62(5), 1225–1234.
- Carter, M. E., F. Franco, and M. Gine (2017). Executive gender pay gaps: The roles of female risk aversion and board representation. *Contemporary Accounting Research* 34(2), 1232–1264.
- Donovan, J., R. M. Frankel, and X. Martin (2015). Accounting conservatism and creditor recovery rate. *The Accounting Review* 90(6), 2267–2303.
- Faccio, M., M.-T. Marchica, and R. Mura (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance* 39, 193–209.
- Fang, L. H. and S. Huang (2017). Gender and connections among wall street analysts. *The Review of Financial Studies* 30(9), 3305–3335.
- Francis, B., I. Hasan, J. C. Park, and Q. Wu (2015). Gender differences in financial reporting decision making: Evidence from accounting conservatism. *Contemporary Accounting Research* 32(3), 1285–1318.
- Francis, B., I. Hasan, and Q. Wu (2013). The impact of cfo gender on bank loan contracting. *Journal of Accounting, Auditing & Finance* 28(1), 53–78.
- Franks, J. R. and W. N. Torous (1994). A comparison of financial restructuring in distressed exchanges and chapter 11 reorganizations. *Journal of Financial Economics* 35(3), 349–370.
- Goldin, C. and C. Rouse (2000). Orchestrating impartiality: The impact of "blind" auditions on female musicians. *American Economic Review* 90(4), 715–741.
- Gul, F. A., B. Srinidhi, and A. C. Ng (2011). Does board gender diversity improve the informativeness of stock prices? *Journal of Accounting and Economics* 51(3), 314–338.
- Hauptmann, C., S. Kleimeier, and S. Straetmans (2018). Bank loan pricing and top executive gender: Cross-cultural evidence on the loan price gap. *Working Paper*.
- Huang, J. and D. J. Kisgen (2013). Gender and corporate finance: Are male executives overconfident relative to female executives? *Journal of Financial Economics* 108(3), 822–839.
- Jankowitsch, R., F. Nagler, and M. G. Subrahmanyam (2014). The determinants of recovery rates in the us corporate bond market. *Journal of Financial Economics* 114(1), 155–177.
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review* 76(2), 323–329.



- Jia, Y., L. v. Lent, and Y. Zeng (2014). Masculinity, testosterone, and financial misreporting. *Journal of Accounting Research* 52(5), 1195–1246.
- Kaplan, S. N., M. M. Klebanov, and M. Sorensen (2012). Which CEO characteristics and abilities matter? *The Journal of Finance* 67(3), 973–1007.
- Khan, W. A. and J. P. Vieito (2013). CEO gender and firm performance. *Journal of Economics and Business* 67, 55–66.
- Koch, J. and D. M. Thomsen (2017). Gender equality mood across states and over time. *State Politics & Policy Quarterly* 17(4), 351–360.
- Kolev, G. I. (2012). Underperformance by female CEOs: A more powerful test. *Economics Letters* 117(2), 436–440.
- Malmendier, U. and G. Tate (2008). Who makes acquisitions? ceo overconfidence and the market’s reaction. *Journal of Financial Economics* 89(1), 20–43.
- Metz, A., S. Sorensen, D. Keisman, and D. Chiu (2012). Special comment: Trading prices as predictors of ultimate corporate recovery rates. *Moody’s Investors Services*, 1–39.
- Nagar, V., K. Petroni, and D. Wolfenzon (2011). Governance problems in closely held corporations. *Journal of Financial and Quantitative Analysis* 46(4), 943–966.
- Saunders, A. and S. Steffen (2011). The costs of being private: Evidence from the loan market. *The Review of Financial Studies* 24(12), 4091–4122.
- Schuermann, T. and S. G. Hanson (2004). Estimating probabilities of default. Technical report, Staff Report, Federal Reserve Bank of New York.
- Shleifer, A. and R. W. Vishny (1992). Liquidation values and debt capacity: A market equilibrium approach. *The Journal of Finance* 47(4), 1343–1366.
- Squire, R. (2011). Strategic liability in the corporate group. *The University of Chicago Law Review* 78(2), 605–669.
- Weisbach, M. (1995). Ceo turnover and the firm’s investment decisions. *Journal of Financial Economics* 37, 159–188.
- Whittred, G. (1987). The derived demand for consolidated financial reporting. *Journal of Accounting and Economics* 9(3), 259–285.
- Zhang, J. (2008). The contracting benefits of accounting conservatism to lenders and borrowers. *Journal of Accounting and Economics* 45(1), 27–54.

## Appendix A Variable definitions and sources

| Variable   | Definition (sources)  |
|--|---|
| <b>Executive gender variables</b>                          |   |
| <i>ExecGender</i>  | An indicator variable equal to one if the gender of the CEO and/or CFO is female, and zero otherwise (ExecuComp, BoardEx, and company annual lings).  |
| <i>CEOGender</i>   | An indicator variable equal to one if the gender of the CEO is female, and zero otherwise (ExecuComp, BoardEx, and company annual lings).   |
| <i>CFOGender</i>   | An indicator variable equal to one if the gender of the CFO is female, and zero otherwise (ExecuComp, BoardEx, and company annual lings).   |
| <b>Recovery and debt characteristics</b>                   |   |
| <i>RecoveryRate</i>  | Trading price of defaulted debt, expressed as a percentage of par, at the date of distressed exchanges, or 30 days after default for chapter 11 bankruptcy and missed payments ( <i>DEF_PRICE</i> , Moody's Default and Recovery Database [DRD]). |
| <i>OfferPrice</i>  | Offering price expressed as a percent of par ( <i>OFFR_PRC_PCT</i> , [DRD]).  |
| <i>CouponRate</i>  | The initial annual payment for a bond expressed as a percentage of the face amount ( <i>COUP_RATE</i> , [DRD]).   |
| <i>SeniorSecured</i>                                       | An indicator variable equal to one if the default type is distressed exchange, and zero otherwise ( <i>DEF_TYP_CD</i> , [DRD]).   |
| <i>DefaultAmount</i>                                       | An indicator variable equal to one if the default type is Chapter 11 bankruptcy, and zero otherwise ( <i>DEF_TYP_CD</i> , [DRD]).   |
| <i>Chapter11</i>   | An indicator variable equal to one if the default type is Missed Payments, and zero otherwise ( <i>DEF_TYP_CD</i> , [DRD]).   |
| <i>DistressedExch</i>                                      | An indicator variable equal to one if the debt instrument is senior and secured, and zero otherwise ( <i>DEBT_SENR_CD</i> , [DRD]).   |
| <i>MissedPayment</i>                                       | The natural logarithm of the loan default amount ( <i>DEF_AMNT</i> , [DRD]).  |
| <i>BankLoan</i>  | Indicator variable equal to one if the debt obligation is Bank Loan or Bank Credit Facility and zero otherwise ( <i>DEBT_CLASS_CD</i> , [DRD]).   |
| <i>RegBonds</i>  | Indicator variable equal to one if the debt obligation is Regular Bond/Debenture and zero otherwise ( <i>DEBT_CLASS_CD</i> , [DRD]).  |
| <b>Firm characteristics</b>                                |   |
| <i>FirmSize</i>  | The natural logarithm of firm total assets ( <i>AT</i> , Compustat).  |
| <i>Profitability</i>                                       | Earnings before interest and depreciation ( <i>EBITDA</i> ), scaled by total assets ( <i>AT</i> ) (Compustat).  |
| <i>Intangibility</i>                                       | Intangible assets divided by total assets ( <i>INTAN / AT</i> , Compustat).   |
| <i>Receivables</i>   | Total receivables (RECT) divided by total assets (AT) (Compustat).  |
| <i>Employees</i>   | The natural logarithm of the number of employees (EMP) (Compustat).   |
| <i>LTDebt</i>  | The ratio of long-term debt (DLTT) to total debt (DLTT + DLC) (Compustat).  |
| <i>DefaultBarrier</i>                                      | An assessment of distance to default, measured as short-term debt (DLC) plus one half long-term debt (0.5*DLTT), scaled by total assets (AT) (Compustat).   |
| <b>Variables in endogeneity tests and additional tests</b> |   |
| <i>GenderEquality</i>                                      | Variations in gender- role attitudes across states and over time from Koch and Thomsen (2017) for the years 1972 - 2010. The years after 2010 filled in with data from 2010.  |

---

**Appendix A** (*continued*)

---

| Variable              | Definition (sources)  |
|-----------------------|---|
| <i>Accruals</i>       | Negative non-operating accruals (Compustat).  |
| <i>Skewness</i>       | The difference between the skewness in the operating cash flows and the earnings of the firm (Compustat). |
| <i>Commitmentfee</i>  | The fee paid by borrowers on the unused portion of a loan commitment (Dealscan).                          |
| <i>Utilizationfee</i> | The fee payable if utilization of the loan exceeds a certain percentage of the credit line (Dealscan).    |
| <i>FemaleNED</i>      | The percent of female non-executive directors (BoardEx).  |
| <i>CloselyHeld</i>    | The percent of the firm's closely- held shares (Worldscope).  |
| <i>Guarantor</i>      | An indicator variable equal to one if the debt has a guarantor and zero otherwise ([DRD]).                |

---

Table 1: Sample selection and frequency distributions

## Panel A: Sample selection

|  |              |
|--|--------------|
| Moody's DRD with default price information     | 6,768        |
| Less: Missing gender and financial information | (4,480)      |
| <b>Total</b>                                   | <b>2,288</b> |

## Panel B: Industry frequency distribution of executive gender

| SIC          | Industry classification  | Mean (Female) | Total        |
|--------------|--|---------------|--------------|
| 0            | Agriculture, Forestry and Fishing                                | 0.00          | 9            |
| 1            | Mining and construction  | 0.02          | 194          |
| 2            | Manuf. food, textile, lumber, publishing, chemicals, petroleum   | 0.09          | 172          |
| 3            | Manuf. plastics, leather, concrete, metal, machinery, equipment  | 0.04          | 368          |
| 4            | Transportation, communications, electric, gas, sanitary services | 0.03          | 627          |
| 5            | Trade  | 0.03          | 187          |
| 6            | Finance, insurance, real estate                                  | 0.01          | 509          |
| 7            | Personal, business, and entertainment services                   | 0.12          | 134          |
| 8            | Professional services  | 0.03          | 68           |
| 9            | Public Administration  | 0.00          | 20           |
| <b>Total</b> |  | <b>0.04</b>   | <b>2,288</b> |

## Panel C: Year frequency distribution of executive gender

| Year | Mean (Female) | Total | Year         | Mean (Female) | Total        |
|------|---------------|-------|--------------|---------------|--------------|
| 1982 | 0.00          | 1     | 1999         | 0.01          | 68           |
| 1983 | 0.00          | 1     | 2000         | 0.10          | 89           |
| 1984 | 0.00          | 0     | 2001         | 0.02          | 231          |
| 1985 | 0.00          | 3     | 2002         | 0.01          | 255          |
| 1986 | 0.00          | 0     | 2003         | 0.05          | 67           |
| 1987 | 0.00          | 4     | 2004         | 0.05          | 164          |
| 1988 | 0.00          | 8     | 2005         | 0.09          | 67           |
| 1989 | 0.00          | 21    | 2006         | 0.12          | 26           |
| 1990 | 0.00          | 53    | 2007         | 0.00          | 11           |
| 1991 | 0.00          | 68    | 2008         | 0.04          | 144          |
| 1992 | 0.00          | 67    | 2009         | 0.03          | 617          |
| 1993 | 0.00          | 14    | 2010         | 0.30          | 20           |
| 1994 | 0.11          | 18    | 2011         | 0.07          | 56           |
| 1995 | 0.00          | 44    | 2012         | 0.21          | 33           |
| 1996 | 0.13          | 23    | 2013         | 0.25          | 12           |
| 1997 | 0.00          | 26    | 2014         | 0.00          | 25           |
| 1998 | 0.05          | 42    | 2015         | 0.00          | 10           |
|      |               |       | <b>Total</b> | <b>0.04</b>   | <b>2,288</b> |

Table 1, Panel A provides an overview of the sample selection. The sample period covers 1982 - 2015. The sample is restricted by the availability of necessary firm-specific control variables and executive gender information. Panel B provides an overview of the frequency distribution of observations by industry and Panel C provide distribution by year.

Table 2: Summary Statistics

| VARIABLES             | N     | Mean   | Std. Dev. | p25    | p50    | p75    | Max .   |
|-----------------------|-------|--------|-----------|--------|--------|--------|---------|
| <i>ExecGender</i>     | 2,288 | 0.04   | 0.19      | 0.00   | 0.00   | 0.00   | 1.00    |
| <i>CEOGender</i>      | 2,288 | 0.01   | 0.10      | 0.00   | 0.00   | 0.00   | 1.00    |
| <i>CFOGender</i>      | 2,288 | 0.03   | 0.17      | 0.00   | 0.00   | 0.00   | 1.00    |
| <i>RecoveryRate</i>   | 2,288 | 48.02  | 28.76     | 24.00  | 48.00  | 71.07  | 104.50  |
| <i>OfferPrice</i>     | 2,288 | 98.93  | 5.98      | 100.00 | 100.00 | 100.00 | 100.00  |
| <i>CouponRate</i>     | 2,288 | 10.98  | 8.90      | 0.00   | 11.75  | 18.75  | 29.50   |
| <i>SeniorSecured</i>  | 2,288 | 0.16   | 0.37      | 0.00   | 0.00   | 0.00   | 1.00    |
| <i>DefaultAmount</i>  | 2,288 | 248.06 | 459.85    | 24.40  | 101.00 | 251.00 | 2,851   |
| <i>Chapter11</i>      | 2,288 | 0.33   | 0.47      | 0.00   | 0.00   | 1.00   | 1.00    |
| <i>DistressedExch</i> | 2,288 | 0.30   | 0.46      | 0.00   | 0.00   | 1.00   | 1.00    |
| <i>MissedPayment</i>  | 2,288 | 0.37   | 0.48      | 0.00   | 0.00   | 1.00   | 1.00    |
| <i>BankLoan</i>       | 2,288 | 0.10   | 0.30      | 0.00   | 0.00   | 0.00   | 1.00    |
| <i>RegBonds</i>       | 2,288 | 0.53   | 0.50      | 0.00   | 1.00   | 1.00   | 1.00    |
| <i>FirmSize</i>       | 2,288 | 46,713 | 158,498   | 852    | 2,262  | 28,979 | 912,404 |
| <i>Profitability</i>  | 2,288 | 0.01   | 0.14      | -0.00  | 0.03   | 0.07   | 0.34    |
| <i>Intangibility</i>  | 2,288 | 0.09   | 0.15      | 0.00   | 0.01   | 0.12   | 0.65    |
| <i>Receivables</i>    | 2,288 | 0.19   | 0.20      | 0.05   | 0.10   | 0.24   | 0.67    |
| <i>Employees</i>      | 2,288 | 42.31  | 193.93    | 1.80   | 4.29   | 13.76  | 1,840   |
| <i>LTDebt</i>         | 2,288 | 0.64   | 0.39      | 0.22   | 0.85   | 0.95   | 1.00    |
| <i>DefaultBarrier</i> | 2,288 | 0.37   | 0.34      | 0.15   | 0.32   | 0.44   | 1.80    |

Table 2 presents the descriptive statistics for the variables employed in the primary analyses in this paper. The sample period covers 1982 - 2015. Variable descriptions are provided in Appendix A. The variables for default amount, firm size, and number of employees are reported prior to taking the natural logarithm.

Table 3: Univariate Results: Comparison of means

Panel A: Comparison of means across *ExecGender*

|                       | Male   |           | Female |           | Male vs. Female |         |
|-----------------------|--------|-----------|--------|-----------|-----------------|---------|
|                       | Mean   | Std. Dev. | Mean   | Std. Dev. | Diff.           | t-stat  |
| <i>RecoveryRate</i>   | 47.74  | 28.69     | 55.48  | 31.08     | -7.74**         | (-2.43) |
| <i>OfferPrice</i>     | 98.98  | 5.84      | 97.82  | 8.89      | 1.15*           | (1.75)  |
| <i>CouponRate</i>     | 11.09  | 8.88      | 8.17   | 8.78      | 2.91***         | (2.97)  |
| <i>SeniorSecured</i>  | 0.31   | 0.46      | 0.13   | 0.34      | 0.18***         | (3.50)  |
| <i>DefaultAmount</i>  | 0.32   | 0.47      | 0.49   | 0.50      | -0.18***        | (-3.39) |
| <i>Chapter11</i>      | 0.37   | 0.48      | 0.38   | 0.49      | -0.01           | (-0.04) |
| <i>DistressedExch</i> | 0.15   | 0.36      | 0.38   | 0.49      | -0.23***        | (-5.66) |
| <i>MissedPayment</i>  | 245.40 | 455.94    | 317.04 | 550.20    | -71.64          | (-1.41) |
| <i>BankLoan</i>       | 0.10   | 0.01      | 0.28   | 0.05      | -0.18***        | (-5.57) |
| <i>RegBonds</i>       | 0.54   | 0.01      | 0.40   | 0.05      | 0.14**          | (2.48)  |
| <i>FirmSize</i>       | 48,390 | 161,290   | 3,236  | 5,468     | 45,154**        | (2.58)  |
| <i>Profitability</i>  | 0.01   | 0.14      | 0.03   | 0.14      | -0.02           | (-1.28) |
| <i>Intangibility</i>  | 0.09   | 0.15      | 0.16   | 0.20      | -0.07***        | (-4.00) |
| <i>Receivables</i>    | 0.19   | 0.21      | 0.12   | 0.11      | 0.07***         | (3.11)  |
| <i>Employees</i>      | 38.56  | 174.41    | 139.53 | 465.42    | -100.97***      | (-4.73) |
| <i>LTDebt</i>         | 0.64   | 0.38      | 0.59   | 0.42      | 0.05            | (1.20)  |
| <i>DefaultBarrier</i> | 0.38   | 0.34      | 0.33   | 0.29      | 0.04            | (1.11)  |

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Panel B: Comparison of means across *CEOGender*

|                       | Male   |           | Female |           | Male vs. Female |         |
|-----------------------|--------|-----------|--------|-----------|-----------------|---------|
|                       | Mean   | Std. Dev. | Mean   | Std. Dev. | Diff.           | t-stat  |
| <i>RecoveryRate</i>   | 47.96  | 28.74     | 54.21  | 34.10     | -6.25           | (-1.08) |
| <i>OfferPrice</i>     | 99.00  | 5.76      | 93.20  | 15.61     | 5.80***         | (4.84)  |
| <i>CouponRate</i>     | 11.01  | 8.88      | 8.02   | 9.66      | 2.99*           | (1.67)  |
| <i>SeniorSecured</i>  | 0.30   | 0.46      | 0.00   | 0.00      | 0.30***         | (3.30)  |
| <i>DefaultAmount</i>  | 0.32   | 0.47      | 0.48   | 0.51      | -0.16*          | (-1.66) |
| <i>Chapter11</i>      | 0.37   | 0.48      | 0.52   | 0.51      | -0.15           | (-1.51) |
| <i>DistressedExch</i> | 0.16   | 0.36      | 0.36   | 0.49      | -0.20**         | (-2.78) |
| <i>MissedPayment</i>  | 245.73 | 454.91    | 459.13 | 774.03    | -213.40**       | (-2.31) |
| <i>BankLoan</i>       | 0.10   | 0.30      | 0.40   | 0.50      | -0.30***        | (-4.93) |
| <i>RegBonds</i>       | 0.53   | 0.50      | 0.44   | 0.51      | 0.09            | (0.92)  |
| <i>FirmSize</i>       | 47,209 | 159,300   | 1,759  | 1,153     | 45,451          | (1.43)  |
| <i>Profitability</i>  | 0.01   | 0.14      | 0.04   | 0.15      | -0.03           | (-0.99) |
| <i>Intangibility</i>  | 0.09   | 0.15      | 0.17   | 0.26      | -0.08**         | (-2.44) |
| <i>Receivables</i>    | 0.19   | 0.20      | 0.11   | 0.09      | 0.08*           | (1.85)  |
| <i>Employees</i>      | 41.10  | 187.49    | 152.08 | 508.02    | -110.99**       | (-2.85) |
| <i>LTDebt</i>         | 0.63   | 0.39      | 0.88   | 0.23      | -0.25**         | (-3.22) |
| <i>DefaultBarrier</i> | 0.38   | 0.34      | 0.25   | 0.08      | 0.13*           | (1.90)  |

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 3 (continued)

Panel C: Comparison of means across *CFOGender*

|                       | Male   |           | Female |           | Male vs. Female |         |
|-----------------------|--------|-----------|--------|-----------|-----------------|---------|
|                       | Mean   | Std. Dev. | Mean   | Std. Dev. | Diff.           | t-stat  |
| <i>RecoveryRate</i>   | 47.73  | 28.74     | 57.86  | 29.34     | -10.13**        | (-2.86) |
| <i>OfferPrice</i>     | 98.96  | 5.89      | 97.99  | 8.40      | 0.98            | (1.33)  |
| <i>CouponRate</i>     | 11.05  | 8.89      | 8.47   | 8.74      | 2.58**          | (2.36)  |
| <i>SeniorSecured</i>  | 0.30   | 0.46      | 0.16   | 0.37      | 0.14**          | (2.52)  |
| <i>DefaultAmount</i>  | 0.32   | 0.47      | 0.49   | 0.50      | -0.16**         | (-2.86) |
| <i>Chapter11</i>      | 0.38   | 0.48      | 0.35   | 0.48      | 0.02            | (0.37)  |
| <i>DistressedExch</i> | 0.15   | 0.36      | 0.38   | 0.49      | -0.23***        | (-5.17) |
| <i>MissedPayment</i>  | 247.86 | 461.77    | 254.48 | 394.98    | -6.62           | (-0.12) |
| <i>BankLoan</i>       | 0.10   | 0.30      | 0.25   | 0.44      | -0.15***        | (-4.05) |
| <i>RegBonds</i>       | 0.54   | 0.50      | 0.41   | 0.50      | 0.12**          | (2.01)  |
| <i>FirmSize</i>       | 48,034 | 160,722   | 3,563  | 6,041     | 44,471**        | (2.28)  |
| <i>Profitability</i>  | 0.01   | 0.14      | 0.03   | 0.13      | -0.02           | (-1.03) |
| <i>Intangibility</i>  | 0.09   | 0.15      | 0.14   | 0.17      | -0.04**         | (-2.36) |
| <i>Receivables</i>    | 0.19   | 0.21      | 0.11   | 0.11      | 0.08**          | (3.06)  |
| <i>Employees</i>      | 39.97  | 181.98    | 118.75 | 425.30    | -78.79***       | (-3.31) |
| <i>LTDebt</i>         | 0.64   | 0.38      | 0.52   | 0.43      | 0.11**          | (2.40)  |
| <i>DefaultBarrier</i> | 0.38   | 0.34      | 0.35   | 0.32      | 0.03            | (0.66)  |

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 3 presents the comparisons of means of male and female executives for each of the variables used in the primary analyses. Panel A shows the means for *ExecGender*, Panel B for *CEOGender*, and Panel C for *CFOGender*. The t-statistic is based on two tailed t-test that the difference (Diff.) between the means for each variable is significantly different from zero. Variable descriptions are provided in Appendix A. The variables for default amount, firm size, and number of employees are reported prior to taking the natural logarithm.

Table 4: Executive Gender and Creditor Recovery Rates: Baseline Results

|                       | <i>Predicted<br/>Sign</i> | Full Sample         |                     |                     | Restricted Sample    |                      |                      |
|-----------------------|---------------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
|                       |                           | (1)                 | (2)                 | (3)                 | (4)                  | (5)                  | (6)                  |
| <i>ExecGender</i>     | (+)                       | 11.35***<br>(3.13)  |                     |                     | 11.05***<br>(2.85)   |                      |                      |
| <i>CEOGender</i>      | (+)                       |                     | 11.36**<br>(2.04)   |                     |                      | 11.58*<br>(1.91)     |                      |
| <i>CFOGender</i>      | (+)                       |                     |                     | 12.68***<br>(3.18)  |                      |                      | 12.34***<br>(2.89)   |
| <i>OfferPrice</i>     | (+)                       | 0.47***<br>(4.53)   | 0.47***<br>(4.58)   | 0.46***<br>(4.51)   | 0.45***<br>(4.08)    | 0.45***<br>(4.14)    | 0.44***<br>(4.06)    |
| <i>CouponRate</i>     | (-)                       | -0.33**<br>(-2.23)  | -0.34**<br>(-2.26)  | -0.33**<br>(-2.21)  | -0.29*<br>(-1.69)    | -0.30*<br>(-1.72)    | -0.29*<br>(-1.67)    |
| <i>SeniorSecured</i>  | (+)                       | 29.37***<br>(11.37) | 29.69***<br>(11.35) | 29.14***<br>(11.25) | 29.95***<br>(11.29)  | 30.35***<br>(11.24)  | 29.65***<br>(11.11)  |
| <i>DefaultAmount</i>  | (-)                       | -2.93***<br>(-4.68) | -2.94***<br>(-4.66) | -2.92***<br>(-4.68) | -2.82***<br>(-4.21)  | -2.83***<br>(-4.19)  | -2.80***<br>(-4.20)  |
| <i>Chapter11</i>      | (-)                       | -4.95*<br>(-1.88)   | -4.75*<br>(-1.80)   | -5.02*<br>(-1.90)   | -2.56<br>(-0.86)     | -2.28<br>(-0.77)     | -2.64<br>(-0.89)     |
| <i>DistressedExch</i> | (+)                       | 27.12***<br>(10.81) | 26.94***<br>(10.67) | 26.86***<br>(10.65) | 28.99***<br>(10.55)  | 28.85***<br>(10.39)  | 28.69***<br>(10.36)  |
| <i>BankLoan</i>       | (+)                       | 11.68***<br>(3.59)  | 11.50***<br>(3.49)  | 12.01***<br>(3.70)  | 11.41***<br>(3.21)   | 11.14***<br>(3.07)   | 11.79***<br>(3.32)   |
| <i>RegBonds</i>       | (?)                       | 10.50***<br>(5.13)  | 10.45***<br>(5.10)  | 10.45***<br>(5.09)  | 7.90***<br>(3.76)    | 7.82***<br>(3.72)    | 7.82***<br>(3.72)    |
| <i>FirmSize</i>       | (+)                       | 1.91***<br>(2.67)   | 1.75**<br>(2.47)    | 1.88***<br>(2.63)   | 1.62**<br>(2.23)     | 1.44**<br>(2.01)     | 1.59**<br>(2.19)     |
| <i>Profitability</i>  | (+)                       | 22.43***<br>(3.22)  | 22.42***<br>(3.22)  | 22.37***<br>(3.21)  | 29.91***<br>(3.83)   | 29.91***<br>(3.85)   | 29.84***<br>(3.83)   |
| <i>Intangibility</i>  | (-)                       | -8.48<br>(-1.57)    | -8.68<br>(-1.57)    | -8.09<br>(-1.49)    | -12.17**<br>(-2.12)  | -12.42**<br>(-2.12)  | -11.71**<br>(-2.03)  |
| <i>Receivables</i>    | (+)                       | 0.14<br>(0.02)      | -0.30<br>(-0.05)    | 0.44<br>(0.07)      | -1.12<br>(-0.16)     | -1.61<br>(-0.24)     | -0.68<br>(-0.10)     |
| <i>Employees</i>      | (-)                       | -1.64***<br>(-3.39) | -1.55***<br>(-3.25) | -1.60***<br>(-3.31) | -2.08***<br>(-3.92)  | -1.98***<br>(-3.78)  | -2.04***<br>(-3.84)  |
| <i>LTDebt</i>         | (-)                       | 1.14<br>(0.49)      | 0.98<br>(0.42)      | 1.51<br>(0.66)      | 2.64<br>(1.06)       | 2.46<br>(0.97)       | 3.10<br>(1.27)       |
| <i>DefaultBarrier</i> | (-)                       | -8.74***<br>(-3.28) | -8.66***<br>(-3.23) | -8.68***<br>(-3.26) | -11.69***<br>(-4.67) | -11.51***<br>(-4.57) | -11.62***<br>(-4.66) |
| Year FE               |                           | Yes                 | Yes                 | Yes                 | Yes                  | Yes                  | Yes                  |
| Industry FE           |                           | Yes                 | Yes                 | Yes                 | Yes                  | Yes                  | Yes                  |
| Observations          |                           | 2,288               | 2,288               | 2,288               | 1,932                | 1,932                | 1,932                |
| Adjusted R-squared    |                           | 0.44                | 0.43                | 0.44                | 0.47                 | 0.47                 | 0.47                 |

Robust t-statistics in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 4 presents the primary multivariate results on the relation between executive gender and creditor recovery rates. Columns (1) to (3) are based on the full default sample covering the period 1982 to 2015. Columns (4) to (6) cover the same period but consists only of the years with at least one default occurring at a firm run by a female executive (CEO or CFO). The dependent variable is *RecoveryRate*. All variables are described in Appendix A. Industry fixed effects are based on the industry classifications in the Moody's Default and Recovery Database. Standard errors are clustered by firm.



Table 5: Executive Gender and Creditor Recovery Rates: Heckman Selection Model Results

| Dep. Variable:            | First-Stage Probit  |                     | Second-Stage OLS     |                      |
|---------------------------|---------------------|---------------------|----------------------|----------------------|
|                           | <i>ExecGender</i>   |                     | <i>RecoveryRate</i>  |                      |
|                           | (1)                 | (2)                 | (3)                  | (4)                  |
| <i>ExecGender</i>         |                     |                     | 10.70***<br>(2.74)   | 10.67***<br>(2.74)   |
| <i>GenderEquality</i>     | 0.08***<br>(3.33)   | 0.08***<br>(3.19)   |                      |                      |
| <i>MillsRatio</i>         |                     |                     | 3.63<br>(0.87)       | 3.98<br>(0.91)       |
| <i>OfferPrice</i>         |                     | -0.01<br>(-0.70)    | 0.43***<br>(4.01)    | 0.40***<br>(3.77)    |
| <i>CouponRate</i>         |                     | -0.02**<br>(-2.28)  | -0.28*<br>(-1.65)    | -0.37*<br>(-1.70)    |
| <i>SeniorSecured</i>      |                     | 0.05<br>(0.25)      | 29.83***<br>(11.11)  | 29.98***<br>(11.15)  |
| <i>DefaultAmount</i>      |                     | 0.06<br>(0.89)      | -2.52***<br>(-3.76)  | -2.32***<br>(-3.48)  |
| <i>Chapter11</i>          |                     | -0.05<br>(-0.22)    | -3.46<br>(-1.17)     | -3.62<br>(-1.20)     |
| <i>DistressedExch</i>     |                     | -0.74***<br>(-3.05) | 26.92***<br>(9.21)   | 24.36***<br>(5.31)   |
| <i>BankLoan</i>           |                     | 0.12<br>(0.50)      | 10.41***<br>(2.84)   | 10.80***<br>(3.00)   |
| <i>RegBonds</i>           |                     | 0.11<br>(0.62)      | 6.54***<br>(3.02)    | 6.91***<br>(3.11)    |
| <i>FirmSize</i>           | -0.23***<br>(-5.46) | -0.26***<br>(-5.64) | 1.04<br>(1.13)       | 0.89<br>(0.87)       |
| <i>Profitability</i>      | 0.49<br>(0.96)      | 0.16<br>(0.33)      | 30.95***<br>(3.90)   | 29.92***<br>(3.91)   |
| <i>Intangibility</i>      | -0.10<br>(-0.23)    | -0.23<br>(-0.47)    | -12.15**<br>(-2.14)  | -12.52**<br>(-2.20)  |
| <i>Receivables</i>        | -1.13<br>(-1.50)    | -0.47<br>(-0.63)    | 1.11<br>(0.13)       | 3.04<br>(0.38)       |
| <i>Employees</i>          | 0.08**<br>(2.34)    | 0.09**<br>(2.56)    | -1.80***<br>(-3.06)  | -1.74***<br>(-2.84)  |
| <i>LTDebt</i>             | 0.13<br>(0.69)      | 0.37*<br>(1.67)     | 3.23<br>(1.28)       | 4.10<br>(1.45)       |
| <i>DefaultBarrier</i>     | -0.10<br>(-0.56)    | 0.06<br>(0.27)      | -11.62***<br>(-4.43) | -11.09***<br>(-4.45) |
| Year FE                   | Yes                 | Yes                 | Yes                  | Yes                  |
| Industry FE               | Yes                 | Yes                 | Yes                  | Yes                  |
| Observations              | 1,859               | 1,859               | 1,859                | 1,859                |
| Pseudo/Adjusted R-squared | 0.21                | 0.26                | 0.45                 | 0.45                 |

Robust z-statistics (first-stage) and t-statistics (second-stage) in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 5 presents results of the Heckman two-stage self-selection model. Results of the first stage probit regressions of *ExecGender* on a set of firm controls are in Column (1) and on all baseline control variables in Column (2). The first stage regressions include and the second stage regressions exclude *GenderEquality*. Column (3) and (4) report the second stage ordinary least squares (OLS) results including inverse Mills Ratio computed from Column (1) and Column (2), respectively. All variables are described in Appendix A. Industry fixed effects are based on the industry classifications in the Moody's Default and Recovery Database. Standard errors are clustered by firm.

Table 7: Investigating Potential Mechanisms: Financial Reporting Conservatism

|                          | <i>ExecGender</i>   |                      | <i>CEOGender</i>    |                     | <i>CFOGender</i>    |                      |
|--------------------------|---------------------|----------------------|---------------------|---------------------|---------------------|----------------------|
|                          | <i>Accruals</i>     | <i>Skewness</i>      | <i>Accruals</i>     | <i>Skewness</i>     | <i>Accruals</i>     | <i>Skewness</i>      |
|                          | (1)                 | (2)                  | (3)                 | (4)                 | (5)                 | (6)                  |
| <i>Gender</i>            | 11.07***<br>(3.13)  | 11.86***<br>(3.70)   | 7.08**<br>(2.00)    | 14.59**<br>(1.97)   | 12.64***<br>(2.98)  | 10.80***<br>(3.44)   |
| <i>Accruals</i>          | -4.10***<br>(-4.29) |                      | -3.90***<br>(-4.15) |                     | -4.01***<br>(-4.17) |                      |
| <i>Gender * Accruals</i> | 10.12***<br>(3.61)  |                      | 13.93***<br>(3.49)  |                     | 8.33***<br>(2.83)   |                      |
| <i>Skewness</i>          |                     | -1.56*<br>(-1.79)    |                     | -1.30<br>(-1.48)    |                     | -1.67*<br>(-1.92)    |
| <i>Gender * Skewness</i> |                     | 2.60<br>(0.73)       |                     | -1.37<br>(-0.22)    |                     | 6.17*<br>(1.79)      |
| <i>OfferPrice</i>        | 0.44***<br>(4.39)   | 0.47***<br>(4.39)    | 0.46***<br>(4.47)   | 0.48***<br>(4.40)   | 0.43***<br>(4.25)   | 0.47***<br>(4.41)    |
| <i>CouponRate</i>        | -0.30**<br>(-2.12)  | -0.31**<br>(-2.17)   | -0.30**<br>(-2.11)  | -0.32**<br>(-2.26)  | -0.31**<br>(-2.18)  | -0.30**<br>(-2.11)   |
| <i>SeniorSecured</i>     | 29.23***<br>(11.20) | 29.57***<br>(10.75)  | 29.89***<br>(11.19) | 30.03***<br>(10.82) | 28.96***<br>(11.06) | 29.26***<br>(10.63)  |
| <i>DefaultAmount</i>     | -2.55***<br>(-4.05) | -2.89***<br>(-4.51)  | -2.56***<br>(-4.02) | -2.86***<br>(-4.45) | -2.55***<br>(-4.07) | -2.89***<br>(-4.54)  |
| <i>Chapter11</i>         | -4.45*<br>(-1.67)   | -5.51**<br>(-1.98)   | -4.07<br>(-1.51)    | -5.16*<br>(-1.83)   | -4.72*<br>(-1.77)   | -5.48**<br>(-1.97)   |
| <i>DistressedExch</i>    | 27.51***<br>(10.57) | 26.84***<br>(10.00)  | 27.27***<br>(10.30) | 26.62***<br>(9.91)  | 27.35***<br>(10.43) | 26.63***<br>(9.83)   |
| <i>BankLoan</i>          | 10.96***<br>(3.40)  | 10.97***<br>(3.30)   | 10.27***<br>(3.11)  | 10.60***<br>(3.12)  | 11.20***<br>(3.48)  | 11.38***<br>(3.43)   |
| <i>RegBonds</i>          | 9.51***<br>(4.68)   | 10.11***<br>(5.05)   | 9.44***<br>(4.60)   | 10.13***<br>(5.03)  | 9.61***<br>(4.73)   | 10.01***<br>(4.98)   |
| <i>FirmSize</i>          | 1.08<br>(1.31)      | 1.45*<br>(1.67)      | 0.93<br>(1.13)      | 1.30<br>(1.50)      | 0.98<br>(1.20)      | 1.38<br>(1.59)       |
| <i>Profitability</i>     | 9.92<br>(1.32)      | 19.85***<br>(2.80)   | 9.38<br>(1.25)      | 19.79***<br>(2.79)  | 8.88<br>(1.19)      | 19.90***<br>(2.82)   |
| <i>Intangibility</i>     | -2.88<br>(-0.55)    | -7.35<br>(-1.33)     | -3.64<br>(-0.67)    | -7.60<br>(-1.35)    | -3.43<br>(-0.65)    | -6.84<br>(-1.24)     |
| <i>Receivables</i>       | -0.21<br>(-0.03)    | 1.70<br>(0.26)       | 0.59<br>(0.09)      | 1.43<br>(0.22)      | -0.22<br>(-0.03)    | 2.08<br>(0.32)       |
| <i>Employees</i>         | -1.15*<br>(-1.80)   | -1.14*<br>(-1.76)    | -1.11*<br>(-1.74)   | -1.11*<br>(-1.70)   | -1.02<br>(-1.60)    | -1.08*<br>(-1.66)    |
| <i>LTDebt</i>            | -0.35<br>(-0.14)    | 0.21<br>(0.08)       | -0.22<br>(-0.08)    | 0.19<br>(0.08)      | -0.13<br>(-0.05)    | 0.49<br>(0.20)       |
| <i>DefaultBarrier</i>    | -8.91***<br>(-3.19) | -10.12***<br>(-3.56) | -8.84***<br>(-3.16) | -9.80***<br>(-3.42) | -9.01***<br>(-3.25) | -10.12***<br>(-3.57) |
| Year FE                  | Yes                 | Yes                  | Yes                 | Yes                 | Yes                 | Yes                  |
| Industry FE              | Yes                 | Yes                  | Yes                 | Yes                 | Yes                 | Yes                  |
| Observations             | 2,231               | 2,231                | 2,231               | 2,231               | 2,231               | 2,231                |
| Adjusted R-squared       | 0.45                | 0.44                 | 0.44                | 0.43                | 0.45                | 0.44                 |

Robust t-statistics in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 7 presents the results on conservatism in financial reporting as a mechanism through which executive gender affects creditor recovery rates. *Accruals* and *Skewness* are measured such that higher values indicate more conservatism in financial reporting. The dependent variable is *RecoveryRate*. The independent variable *Gender* refers to the CEO or CFO gender as noted under each column. All variables are described in Appendix A. Industry fixed effects are based on the 29 industry classifications in the Moody's Default and Recovery Database. Standard errors are clustered by firm.

Table 8: Investigating Potential Mechanisms: Debt Usage

|                       | <i>CommitmentFee</i> |                    |                   | <i>UtilizationFee</i> |                    |                    |
|-----------------------|----------------------|--------------------|-------------------|-----------------------|--------------------|--------------------|
|                       | (1)                  | (2)                | (3)               | (4)                   | (5)                | (6)                |
| <i>ExecGender</i>     | 6.55**<br>(2.02)     |                    |                   | -1.25**<br>(-2.40)    |                    |                    |
| <i>CEOGender</i>      |                      | 9.14*<br>(1.66)    |                   |                       | -1.61**<br>(-2.15) |                    |
| <i>CFOGender</i>      |                      |                    | 6.16*<br>(1.77)   |                       |                    | -1.08**<br>(-1.98) |
| <i>OfferPrice</i>     | 0.04<br>(0.41)       | 0.04<br>(0.39)     | 0.04<br>(0.41)    | 0.02<br>(0.54)        | 0.02<br>(0.55)     | 0.02<br>(0.53)     |
| <i>CouponRate</i>     | -0.19*<br>(-1.70)    | -0.19*<br>(-1.68)  | -0.20*<br>(-1.71) | -0.02<br>(-0.53)      | -0.02<br>(-0.54)   | -0.02<br>(-0.52)   |
| <i>SeniorSecured</i>  | 1.39<br>(0.78)       | 1.78<br>(0.98)     | 1.30<br>(0.72)    | -0.19<br>(-0.39)      | -0.26<br>(-0.54)   | -0.17<br>(-0.37)   |
| <i>DefaultAmount</i>  | -0.14<br>(-0.30)     | -0.14<br>(-0.30)   | -0.15<br>(-0.33)  | 0.67***<br>(6.31)     | 0.67***<br>(6.29)  | 0.67***<br>(6.31)  |
| <i>Chapter11</i>      | 0.17<br>(0.10)       | 0.39<br>(0.23)     | 0.06<br>(0.04)    | 0.51<br>(1.03)        | 0.47<br>(0.95)     | 0.53<br>(1.06)     |
| <i>DistressedExch</i> | 1.31<br>(0.75)       | 1.32<br>(0.74)     | 1.13<br>(0.64)    | -0.01<br>(-0.02)      | -0.01<br>(-0.02)   | 0.02<br>(0.04)     |
| <i>BankLoan</i>       | -5.81**<br>(-2.00)   | -6.21**<br>(-2.11) | -5.64*<br>(-1.93) | -0.62<br>(-0.90)      | -0.55<br>(-0.80)   | -0.65<br>(-0.94)   |
| <i>RegBonds</i>       | 0.73<br>(0.37)       | 0.61<br>(0.31)     | 0.74<br>(0.38)    | -0.45<br>(-0.75)      | -0.43<br>(-0.72)   | -0.45<br>(-0.76)   |
| <i>FirmSize</i>       | -0.61<br>(-1.35)     | -0.70<br>(-1.58)   | -0.64<br>(-1.42)  | 0.11<br>(0.90)        | 0.13<br>(1.04)     | 0.12<br>(0.95)     |
| <i>Profitability</i>  | -0.01<br>(-0.00)     | 0.02<br>(0.00)     | -0.12<br>(-0.02)  | 1.47<br>(0.57)        | 1.47<br>(0.57)     | 1.49<br>(0.58)     |
| <i>Intangibility</i>  | 3.30<br>(0.88)       | 3.22<br>(0.86)     | 3.34<br>(0.88)    | 1.43<br>(1.11)        | 1.45<br>(1.12)     | 1.43<br>(1.11)     |
| <i>Receivables</i>    | 7.85<br>(1.60)       | 7.77<br>(1.60)     | 7.87<br>(1.61)    | 1.12<br>(0.71)        | 1.14<br>(0.72)     | 1.12<br>(0.71)     |
| <i>Employees</i>      | -0.59<br>(-1.55)     | -0.55<br>(-1.43)   | -0.58<br>(-1.50)  | -0.17<br>(-1.23)      | -0.18<br>(-1.29)   | -0.18<br>(-1.26)   |
| <i>LTDebt</i>         | -1.05<br>(-0.61)     | -1.19<br>(-0.67)   | -0.88<br>(-0.50)  | 0.58<br>(1.46)        | 0.60<br>(1.48)     | 0.55<br>(1.38)     |
| <i>DefaultBarrier</i> | -3.25*<br>(-1.69)    | -3.22*<br>(-1.65)  | -3.28*<br>(-1.70) | -0.34<br>(-0.82)      | -0.35<br>(-0.83)   | -0.33<br>(-0.81)   |
| Year FE               | Yes                  | Yes                | Yes               | Yes                   | Yes                | Yes                |
| Industry FE           | Yes                  | Yes                | Yes               | Yes                   | Yes                | Yes                |
| Observations          | 1,529                | 1,529              | 1,529             | 1,529                 | 1,529              | 1,529              |
| Adjusted R-squared    | 0.08                 | 0.08               | 0.08              | 0.07                  | 0.07               | 0.07               |

Robust t-statistics in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 8 presents the results on conservatism in risk taking as proxied by approach to debt usage based on loan fees data from Thomson Reuter's DealScan matched to our sample of defaulting firms. The dependent variables are *Commitmentfee* and *Utilizationfee*. All variables are described in Appendix A. Industry fixed effects are based on the industry classifications in the Moody's Default and Recovery Database. Standard errors are clustered by firm.

Table 9: Creditor Recovery Rates Across Default Types

|                       | <i>Chapter11</i>    |                     | <i>DistressedExch</i> |                      | <i>MissedPayment</i> |                     |
|-----------------------|---------------------|---------------------|-----------------------|----------------------|----------------------|---------------------|
|                       | (1)                 | (2)                 | (3)                   | (4)                  | (5)                  | (6)                 |
| <i>ExecGender</i>     | 3.89<br>(1.10)      |                     | 18.43**<br>(2.43)     |                      | 13.70**<br>(1.97)    |                     |
| <i>CFOGender</i>      |                     | 6.78*<br>(1.79)     |                       | 18.43**<br>(2.43)    |                      | 15.59*<br>(1.90)    |
| <i>OfferPrice</i>     | 0.59***<br>(3.15)   | 0.59***<br>(3.09)   | 0.35**<br>(2.29)      | 0.35**<br>(2.29)     | 0.40***<br>(3.33)    | 0.41***<br>(3.35)   |
| <i>CouponRate</i>     | -0.49**<br>(-2.29)  | -0.49**<br>(-2.28)  | 0.39**<br>(2.29)      | 0.39**<br>(2.29)     | -0.16<br>(-0.75)     | -0.16<br>(-0.76)    |
| <i>SeniorSecured</i>  | 36.36***<br>(7.50)  | 35.99***<br>(7.37)  | 32.79***<br>(8.29)    | 32.79***<br>(8.29)   | 24.52***<br>(6.16)   | 24.33***<br>(6.17)  |
| <i>DefaultAmount</i>  | -2.43**<br>(-2.48)  | -2.44**<br>(-2.49)  | 0.42<br>(1.27)        | 0.42<br>(1.27)       | -6.30***<br>(-6.31)  | -6.29***<br>(-6.35) |
| <i>BankLoan</i>       | 4.24<br>(0.89)      | 4.40<br>(0.92)      | -4.50<br>(-0.91)      | -4.50<br>(-0.91)     | 20.04***<br>(3.61)   | 20.58***<br>(3.77)  |
| <i>RegBonds</i>       | 2.90<br>(1.02)      | 2.74<br>(0.97)      | -2.80<br>(-0.90)      | -2.80<br>(-0.90)     | 15.08***<br>(4.74)   | 15.23***<br>(4.81)  |
| <i>FirmSize</i>       | 2.46**<br>(2.43)    | 2.44**<br>(2.47)    | -1.27<br>(-0.85)      | -1.27<br>(-0.85)     | 4.04***<br>(3.38)    | 4.11***<br>(3.39)   |
| <i>Profitability</i>  | 9.24<br>(0.89)      | 9.81<br>(0.93)      | 1.01<br>(0.12)        | 1.01<br>(0.12)       | 28.38***<br>(2.96)   | 27.18***<br>(2.82)  |
| <i>Intangibility</i>  | -4.60<br>(-0.64)    | -4.39<br>(-0.62)    | -34.83***<br>(-3.17)  | -34.83***<br>(-3.17) | -8.24<br>(-0.95)     | -8.87<br>(-1.02)    |
| <i>Receivables</i>    | -30.18*<br>(-1.91)  | -29.75*<br>(-1.89)  | -33.78***<br>(-2.71)  | -33.78***<br>(-2.71) | -1.31<br>(-0.19)     | -1.25<br>(-0.18)    |
| <i>Employees</i>      | -2.59***<br>(-3.63) | -2.62***<br>(-3.73) | -2.28<br>(-1.56)      | -2.28<br>(-1.56)     | -1.50**<br>(-2.03)   | -1.53**<br>(-2.05)  |
| <i>LTDebt</i>         | -3.74<br>(-1.03)    | -3.49<br>(-0.98)    | 13.47***<br>(2.61)    | 13.47***<br>(2.61)   | 4.59<br>(1.40)       | 5.18<br>(1.61)      |
| <i>DefaultBarrier</i> | -1.64<br>(-0.19)    | -1.69<br>(-0.19)    | -5.94<br>(-1.35)      | -5.94<br>(-1.35)     | -8.00***<br>(-2.78)  | -7.89***<br>(-2.73) |
| Year FE               | Yes                 | Yes                 | Yes                   | Yes                  | Yes                  | Yes                 |
| Industry FE           | Yes                 | Yes                 | Yes                   | Yes                  | Yes                  | Yes                 |
| Observations          | 745                 | 745                 | 686                   | 686                  | 857                  | 857                 |
| Percent Female        | 5.6%                | 4.4%                | 1.6%                  | 1.6%                 | 3.7%                 | 2.8%                |
| Adjusted R-squared    | 0.57                | 0.57                | 0.47                  | 0.47                 | 0.46                 | 0.46                |

Robust t-statistics in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 9 presents results on the effect of executive gender on creditor recovery rates across the three default types: Chapter 11 bankruptcy (*Chapter11*), distressed exchanges (*DistressedExch*), and missed payments (*MissedPayment*). Results for *CEOGender* are not statistically significant across all default types (possibly due to small sample of female CEO; there are no female CEO in distressed exchange sample) and are excluded from this table for brevity. The dependent variable in all the columns is *RecoveryRate*. All variables are described in Appendix A. Industry fixed effects are based on the industry classifications in the Moody's Default and Recovery Database. Standard errors are clustered by firm.

Table 11: The Moderating Effects of Governance

|                             | <i>ExecGender</i>   |                     | <i>CEOGender</i>    |                     | <i>CFOGender</i>    |                     |
|-----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                             | (1)                 | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 |
| <i>Gender</i>               | 10.81<br>(1.55)     | 12.92***<br>(2.99)  | 16.03<br>(1.08)     | 14.08**<br>(2.45)   | 14.40**<br>(2.03)   | 13.91***<br>(2.85)  |
| <i>FemaleNED</i>            | 1.25<br>(0.62)      |                     | 1.36<br>(0.69)      |                     | 1.39<br>(0.69)      |                     |
| <i>Gender * FemaleNED</i>   | 0.73<br>(0.09)      |                     | -5.62<br>(-0.36)    |                     | -2.07<br>(-0.25)    |                     |
| <i>CloselyHeld</i>          |                     | -0.04<br>(-0.89)    |                     | -0.04<br>(-0.90)    |                     | -0.04<br>(-1.01)    |
| <i>Gender * CloselyHeld</i> |                     | -0.20<br>(-1.34)    |                     | -0.72***<br>(-3.48) |                     | -0.15<br>(-0.89)    |
| <i>OfferPrice</i>           | 0.47***<br>(4.51)   | 0.47***<br>(4.65)   | 0.48***<br>(4.70)   | 0.48***<br>(4.75)   | 0.47***<br>(4.53)   | 0.47***<br>(4.60)   |
| <i>CouponRate</i>           | -0.33**<br>(-2.24)  | -0.32**<br>(-2.23)  | -0.34**<br>(-2.28)  | -0.33**<br>(-2.25)  | -0.33**<br>(-2.23)  | -0.32**<br>(-2.20)  |
| <i>SeniorSecured</i>        | 29.41***<br>(11.40) | 29.29***<br>(11.26) | 29.75***<br>(11.38) | 29.60***<br>(11.22) | 29.18***<br>(11.28) | 29.07***<br>(11.14) |
| <i>DefaultAmount</i>        | -2.95***<br>(-4.66) | -2.98***<br>(-4.70) | -2.96***<br>(-4.65) | -2.98***<br>(-4.66) | -2.95***<br>(-4.67) | -2.97***<br>(-4.70) |
| <i>Chapter11</i>            | -4.96*<br>(-1.88)   | -4.98*<br>(-1.89)   | -4.75*<br>(-1.80)   | -4.73*<br>(-1.79)   | -5.05*<br>(-1.91)   | -5.08*<br>(-1.92)   |
| <i>DistressedExch</i>       | 27.26***<br>(10.99) | 27.11***<br>(10.88) | 27.10***<br>(10.86) | 27.01***<br>(10.81) | 27.03***<br>(10.86) | 26.84***<br>(10.74) |
| <i>BankLoan</i>             | 11.60***<br>(3.56)  | 11.59***<br>(3.55)  | 11.45***<br>(3.47)  | 11.31***<br>(3.42)  | 11.96***<br>(3.68)  | 11.93***<br>(3.65)  |
| <i>RegBonds</i>             | 10.52***<br>(5.10)  | 10.35***<br>(5.08)  | 10.47***<br>(5.09)  | 10.28***<br>(5.04)  | 10.48***<br>(5.07)  | 10.25***<br>(5.02)  |
| <i>FirmSize</i>             | 1.90***<br>(2.67)   | 1.85***<br>(2.60)   | 1.74**<br>(2.47)    | 1.71**<br>(2.45)    | 1.87***<br>(2.63)   | 1.83**<br>(2.58)    |
| <i>Profitability</i>        | 22.24***<br>(3.20)  | 22.14***<br>(3.20)  | 22.19***<br>(3.19)  | 22.14***<br>(3.22)  | 22.18***<br>(3.19)  | 22.08***<br>(3.20)  |
| <i>Intangibility</i>        | -8.43<br>(-1.57)    | -9.04*<br>(-1.66)   | -8.50<br>(-1.54)    | -9.35*<br>(-1.68)   | -7.95<br>(-1.47)    | -8.52<br>(-1.56)    |
| <i>Receivables</i>          | 0.14<br>(0.02)      | -0.90<br>(-0.14)    | -0.30<br>(-0.05)    | -1.22<br>(-0.19)    | 0.39<br>(0.06)      | -0.63<br>(-0.10)    |
| <i>Employees</i>            | -1.64***<br>(-3.39) | -1.63***<br>(-3.35) | -1.54***<br>(-3.24) | -1.56***<br>(-3.26) | -1.60***<br>(-3.30) | -1.60***<br>(-3.27) |
| <i>LTDebt</i>               | 1.14<br>(0.50)      | 1.07<br>(0.46)      | 0.99<br>(0.42)      | 1.01<br>(0.43)      | 1.50<br>(0.66)      | 1.44<br>(0.63)      |
| <i>DefaultBarrier</i>       | -8.71***<br>(-3.26) | -8.59***<br>(-3.23) | -8.60***<br>(-3.20) | -8.55***<br>(-3.20) | -8.65***<br>(-3.24) | -8.55***<br>(-3.22) |
| Year FE                     | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 |
| Industry FE                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 |
| Observations                | 2,288               | 2,288               | 2,288               | 2,288               | 2,288               | 2,288               |
| Adjusted R-squared          | 0.43                | 0.44                | 0.43                | 0.43                | 0.43                | 0.44                |

Robust t-statistics in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 11 presents results on the moderating effects of governance, captured by board diversity (*FemaleNED*) and closely-held shares (*CloselyHeld*). The independent variable *Gender* refers to CEO or CFO gender noted under each column. All variables are described in Appendix A. Industry fixed effects are based on industry classifications in the Moody's Default and Recovery Database. Standard errors are clustered by firm.

Table 12: The Effects of Loan Guarantors and the Likelihood of a Guarantor

|                           | Creditor Recovery Rates |            |            | Likelihood of Loan Guarantors |            |            |
|---------------------------|-------------------------|------------|------------|-------------------------------|------------|------------|
|                           | <i>Exec</i>             | <i>CEO</i> | <i>CFO</i> | <i>Exec</i>                   | <i>CEO</i> | <i>CFO</i> |
|                           | (1)                     | (2)        | (3)        | (4)                           | (5)        | (6)        |
| <i>Gender</i>             | 5.91*                   | 5.81       | 7.22**     | 0.18                          | 0.82**     | -0.05      |
|                           | (1.81)                  | (0.81)     | (2.39)     | (0.74)                        | (2.29)     | (-0.20)    |
| <i>Guarantor</i>          | -3.35*                  | -2.92      | -3.12      |                               |            |            |
|                           | (-1.66)                 | (-1.47)    | (-1.59)    |                               |            |            |
| <i>Gender * Guarantor</i> | 12.42*                  | 6.46       | 17.62**    |                               |            |            |
|                           | (1.85)                  | (0.77)     | (2.26)     |                               |            |            |
| <i>OfferPrice</i>         | 0.40***                 | 0.40***    | 0.39***    | 0.02*                         | 0.02*      | 0.02*      |
|                           | (4.09)                  | (4.09)     | (4.05)     | (1.67)                        | (1.74)     | (1.68)     |
| <i>CouponRate</i>         | -0.05                   | -0.06      | -0.04      | 0.01*                         | 0.01*      | 0.01*      |
|                           | (-0.47)                 | (-0.56)    | (-0.42)    | (1.73)                        | (1.73)     | (1.67)     |
| <i>SeniorSecured</i>      | 32.89***                | 33.28***   | 32.60***   | 0.52***                       | 0.54***    | 0.52***    |
|                           | (11.83)                 | (11.77)    | (11.73)    | (3.20)                        | (3.32)     | (3.24)     |
| <i>DefaultAmount</i>      | -1.88***                | -1.85***   | -1.89***   | 0.08**                        | 0.08**     | 0.08**     |
|                           | (-4.64)                 | (-4.56)    | (-4.68)    | (2.13)                        | (2.14)     | (2.16)     |
| <i>Chapter11</i>          | -6.80***                | -6.74***   | -7.05***   | -0.16                         | -0.14      | -0.15      |
|                           | (-3.27)                 | (-3.25)    | (-3.40)    | (-1.29)                       | (-1.17)    | (-1.24)    |
| <i>DistressedExch</i>     | 25.46***                | 25.28***   | 25.24***   | 0.12                          | 0.15       | 0.12       |
|                           | (10.93)                 | (10.94)    | (10.80)    | (0.86)                        | (1.10)     | (0.86)     |
| <i>BankLoan</i>           | 17.29***                | 17.13***   | 17.75***   | 0.40                          | 0.33       | 0.41       |
|                           | (4.67)                  | (4.52)     | (4.81)     | (1.53)                        | (1.23)     | (1.56)     |
| <i>RegBonds</i>           | 13.38***                | 13.35***   | 13.21***   | 0.33**                        | 0.32**     | 0.33**     |
|                           | (6.18)                  | (6.14)     | (6.07)     | (2.42)                        | (2.37)     | (2.45)     |
| <i>FirmSize</i>           | 0.33                    | 0.23       | 0.32       | 0.05                          | 0.05       | 0.05       |
|                           | (0.58)                  | (0.41)     | (0.55)     | (1.20)                        | (1.19)     | (1.16)     |
| <i>Profitability</i>      | 23.97***                | 24.03***   | 24.05***   | -0.45                         | -0.44      | -0.45      |
|                           | (3.97)                  | (3.98)     | (3.99)     | (-1.34)                       | (-1.32)    | (-1.33)    |
| <i>Intangibility</i>      | -6.79                   | -7.06      | -6.58      | -0.36                         | -0.35      | -0.36      |
|                           | (-1.42)                 | (-1.47)    | (-1.38)    | (-1.21)                       | (-1.15)    | (-1.20)    |
| <i>Receivables</i>        | 3.40                    | 3.11       | 3.74       | -0.80*                        | -0.86**    | -0.81*     |
|                           | (0.67)                  | (0.61)     | (0.74)     | (-1.86)                       | (-1.98)    | (-1.88)    |
| <i>Employees</i>          | -1.57***                | -1.51***   | -1.55***   | -0.12**                       | -0.11**    | -0.11**    |
|                           | (-3.29)                 | (-3.15)    | (-3.23)    | (-2.52)                       | (-2.45)    | (-2.49)    |
| <i>LTDebt</i>             | 3.06                    | 3.15       | 3.34       | 0.35***                       | 0.30**     | 0.36***    |
|                           | (1.35)                  | (1.38)     | (1.48)     | (2.66)                        | (2.26)     | (2.71)     |
| <i>DefaultBarrier</i>     | -10.80***               | -10.82***  | -10.92***  | -0.03                         | -0.03      | -0.03      |
|                           | (-3.77)                 | (-3.76)    | (-3.82)    | (-0.19)                       | (-0.19)    | (-0.18)    |
| Year FE                   | Yes                     | Yes        | Yes        | No                            | No         | No         |
| Industry FE               | Yes                     | Yes        | Yes        | Yes                           | Yes        | Yes        |
| Observations              | 1,861                   | 1,861      | 1,861      | 1,861                         | 1,861      | 1,861      |
| Adjusted R-squared        | 0.52                    | 0.52       | 0.52       |                               |            |            |
| Pseudo R-squared          |                         |            |            | 0.112                         | 0.117      | 0.111      |

Robust t-statistics in parentheses

Robust z-statistics in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 12 presents results on the moderating effects of debt guarantors as well as the likelihood that a guarantor exists. *RecoveryRates* is the dependent variable in (1) to (3) and *Guarantor* is the dependent variable in (4) to (6). The independent variable *Gender* refers to CEO or CFO gender noted under each column. All variables are described in Appendix A. Industry fixed effects are based on the industry classifications in the Moody's Default and Recovery Database. Standard errors are clustered by firm.