She Means Business: From Courtroom Biases to Post-Bankruptcy Triumphs*

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Abstract

We hypothesize that gender plays an important role in determining outcomes in business bankruptcy outcomes. We rely on the random assignment of cases among judges within a given jurisdiction to draw causal inference from our empirical analysis. Using a comprehensive dataset of individual sole proprietor and single-owner LLC bankruptcy petitions, we find that female business owners are 26 percent more likely to have their cases dismissed or converted to Chapter 7 compared to their male counterparts. The results are stronger if the presiding judge is a male and have less courtroom or industry-specific experience. We find that post-reorganization businesses owned by women are less likely to fail and show stronger sales growth compared to those owned by men. Finally, the occurrence of less favorable rulings towards women in bankruptcy court cases results in a reduction of female business start-ups by nine percent when compared to their male counterparts, with stronger effects in districts characterized by a higher degree of egalitarian values and where access to banking finance is more stringent.

1 Introduction

Despite women constituting roughly half of the workforce, they are significantly underrepresented and underfunded in the entrepreneurial sphere.[1] The disparity in entrepreneurship between genders can be attributed to several factors, such as societal perceptions of women in the workforce, more pronounced and numerous hurdles in obtaining credit and venture capital due to biases in the financial sector. Additionally, women may face institutional barriers, including difficulties in dealing with regulatory frameworks and limited access to essential business networks for growth and support. Therefore, the way the judicial system addresses the needs of various types of debtors plays a critical role in the prospects of businesses led by women. Our study utilizes bankruptcy filings as a testing ground to examine whether women-led businesses are granted more or less advantageous decisions in bankruptcy courts compared to male-led businesses in similar circumstances, and examines the subsequent effects on the women-led business dynamics. However, investigating the presence of a gender-based bias, whether positive or negative, poses both conceptual and empirical challenges.

Conceptually, if the role of a bankruptcy judge is primarily to oversee the bankruptcy process and ensure that it adheres to the law, then gender should not affect the court outcome. In reality, however, judges do have the role of interpreting these laws and making rulings that can shape outcomes. For example, they may determine if an asset is legally exempt or decide on the validity of secured and unsecured creditors' claims, influencing asset distribution. While they do not directly decide on asset seizure amounts, their legal interpretations can significantly impact the outcome within legal limits. A judge who leans in favor of women might rule in ways that safeguard more assets for female debtors or business

[1] For instance, women own 36% of all companies in the U.S. and yet, only 2.3% of venture capital funding went to women in 2020.

owners. These decisions could offer immediate help to female business owners but might also lead to increased caution among creditors, who could view women as a higher credit risk. As a result, this perception could hinder women's future credit access, with banks possibly cutting credit supply due to the moral hazard issue. Conversely, female entrepreneurs may be more willing to take calculated risks, like investing in business expansion, if they perceive the bankruptcy system to be more lenient. Overall, the potential gender bias in the judicial system and its effect on women's business ventures is a significant empirical matter. It has the potential to influence female-led business startups and their performance, which, in turn, could impact job creation and overall economic activity.

Empirically, there is the challenge of identifying the independent role of gender on court outcomes and subsequent female-led business dynamism. By law, a business can only file for bankruptcy in the districts where it operates. Most small businesses operating solely in one district, don't have the option to choose their district for filing bankruptcy. This stands in contrast to large firms with operations spread across various states and districts, potentially enabling them to opt for a favorable jurisdiction, a practice known as forum shopping. While a large literature has shown that there seems to be significant forum shopping across jurisdictions, judge shopping is widely condemned and actively discouraged. More importantly, US bankruptcy courts employ a blind rotation system for the assignment of cases to judges. This method effectively randomizes the allocation of filers to judges within each court division, overcoming the endogenous matching of judges and filers.

Similar to a substantial body of research on entrepreneurs (Katz, 1990; Parker, 2009), this study employs self-employment as an indicator of entrepreneurial activity.[2] We compile

[2]The concepts of self-employment and entrepreneurship often used interchangeably because the self-employment demands entrepreneurial competencies, given that self-employed individuals take on the risks and rewards of working independently. The self-employed also fill market niches (gaps) and usually respond to the needs of customers more flexibly, quickly, and better than the large companies do.

a comprehensive dataset of individual sole proprietors and single-owner LLCs that filed bankruptcy protection from 2010 to 2020. Each record in this dataset includes several key elements such as the filing date, judgment date, case resolution, the names of the businesses and their owners, and the names of presiding judges, allowing us to identify the gender of both the debtor and the judge.

Our first set of results show that any differences in bankruptcy outcomes related to gender are unlikely to be driven by within-jurisdiction self-selection of judges into cases based on debtor or company attributes. We find that judge-specific characteristics– such as gender, race, caseload, party affiliation, courtroom and industry experience– do not predict the assignment of bankruptcy cases. Utilizing this random asignment of judges, we then investigate the presence of any gender-related differences in judicial outcomes. In general, owners of small businesses opt for either liquidation (Chapter 7) or reorganization (Chapter 13 or Chapter 11). The dismissal or conversion of Chapter 11 or Chapter 13 reorganization filings into a different Chapter, typically Chapter 7, is commonly viewed as a negative outcome for the reorganization attempt. Using a rich set of controls and fixed effects, we find that female business owners are 2.2 percentage points more likely to have their cases being dismissed or converted to Chapter 7. The treatment effect is economically significant, implying 26 percent higher than the average Chapter 11 and Chapter 13 dismissal and case conversion rates for male-owned business filers. In the event of a Chapter 7 bankruptcy filing, filers often seek a bankruptcy discharge, which releases the debtor from personal liability for most debts, effectively preventing creditors from taking any collection actions. In contrast, a dismissal ends the bankruptcy process without any debt relief, leaving the debtor still responsible for all debts. In Chapter 7, we find that female business owners have a probability of dismissal that is 67 percent higher than that of their male counterparts.

Next, we investigate the underlying factors that may contribute to these findings, begin-

ning with an analysis of the judges' courtroom expertise and industry-specific knowledge. Judges with limited experience may find it more challenging to navigate the complexities of the reorganization process, for example, resulting in less favorable court outcomes. Additionally, the unique challenges presented by bankruptcy cases in different industries could be more adeptly handled by judges who have specialized industry knowledge or who have a history of adjudicating similar cases (Iverson, 2019). We also examine the relationship between gender disparities in bankruptcy resolutions and the gender of the judges overseeing these cases. Research indicates that the personal characteristics of judges, including gender, race, and social background (Butcher et al., 2017; Knepper, 2018; Yang, 2015; George and Weaver, 2017), can influence their rulings. It is hypothesized that this effect stems from judges' propensity to empathize with individuals who possess traits akin to their own. The findings indicate that judges with greater experience are less likely to issue unfavorable rulings against female business owners in both reorganization and Chapter 7 cases. We also find that female judges are 24% and 33% less likely to rule against female business owners in reorganization and Chapter 7 cases involving female business owners, respectively, which is in line with homophily effects.

Furthermore, we offer a unique insight into the performance of female-owned businesses after reorganization under Chapter 11 or Chapter 13, contrasting this with the performance of male-owned firms. In general, an efficient reorganization process must carefully navigate between creditors and debtors. The rational course of action for economically unproductive businesses is to liquidate, allowing their assets to be reallocated to more efficient uses. On the flip side, financially distressed but fundamentally viable businesses should be steered towards restructuring to safeguard their survival. Nonetheless, deviations can arise in practice, with economically unsound businesses being restructured, or financially troubled but viable businesses being mistakenly liquidated under Chapter 7. We find that post-reorganization

businesses owned by men are more likely to fail and show lower sales growth compared to those owned by women, which tend to survive and even thrive under Chapter 11 or Chapter 13.

Concerns about unequal treatment in bankruptcy courts can significantly shape the business environment for female entrepreneurs, affecting their decision to embark on new business ventures. The anticipation of unfair treatment if their business becomes financially distressed could dissuade women from starting businesses. Such concerns can also lead to more cautious lending practices, as creditors might become more cautious about potential unfavorable outcomes for female-led businesses, making access to capital more restrictive and expensive. Our final set or results show that the occurrence of less favorable rulings towards women in bankruptcy court cases results in a reduction of female business start-ups by 9 percent when compared to their male counterparts, with stronger effects in districts characterized by a higher degree of egalitarian values and where access to banking finance is more stringent.

Overall, our research contributes to the expanding body of literature that explores the impact of gender on both judicial decisions and business dynamism. Prior studies examining the effect of a judge's gender on legal outcomes have produced mixed findings. For example, Steffensmeier and Hebert (1999) analyzed sentencing data in Pennsylvania and found that female judges are more inclined to incarcerate and mete out longer sentences compared to their male counterparts. Similarly, Philippe (2017) and Schanzenbach (2005) discovered that female judges reduce the disparity in sentencing between male and female defendants in French and U.S. federal criminal courts, respectively. These studies suggest that female judges may be less lenient toward female defendants. However, other research has indicated different trends. Lim et al. (2016) found no significant impact of a judge's gender on criminal sentencing outcomes in Texas, while Knepper (2018) demonstrated that female judges are more favorable toward female plaintiffs in workplace sex discrimination cases.

Gender bias in the context of startups and entrepreneurship also has been the subject of considerable attention. Studies such as those by Becker-Blease and Sohl (2007) and Gompers and Wang (2017) find that women-led startups may receive less venture capital, and when they do secure funding, it's often at lower valuations.[3] Research suggests that implicit bias among mostly male venture capitalists could be a contributing factor (Greenberg and Mollick, 2017). Our study differs from earlier work by showing that the impact of gender bias extends to judicial proceedings, where bankruptcy cases involving female entrepreneurs may face harsher outcomes, potentially discouraging women from pursuing entrepreneurial activities. This bias not only affects individual businesses but also has broader economic implications, reinforcing gender inequality within the entrepreneurial ecosystem and affecting the overall diversity and innovation in the market.

We organize the rest of the paper as follows. Section 2 summarizes the institutional background on bankrupcy chapters, Section 3 describes the data. Section 4 reports the results for randomness of case assignments. Section 5 presents the main empirical results. Section 6 concludes.

2 Institutional background

In the United States, the role of a bankruptcy judge is primarily to oversee the bankruptcy process, ensure that it adheres to the law, and resolve disputes between parties. The amount of assets that creditors can seize in a bankruptcy case is generally determined by federal and state bankruptcy laws, rather than the judge's personal discretion. These laws specify

[3]Female entrepreneurs receive only about 2% of all venture funding, despite owning 38% of the businesses in the country. A study by PitchBook Data Inc. found that in 2019, companies founded solely by women garnered only 2.7% of the total capital invested in venture-backed startups in the U.S. Gender biases during the pitch process, often stemming from male-dominated investor panels, are frequently cited as one of the reasons for this disparity.

exemptions that protect certain kinds of assets up to a particular value, such as homestead exemptions that protect a primary residence or exemptions for a certain amount of personal property. However, the judge does have the role of interpreting these laws and making rulings that could affect the amount or types of assets that are ultimately available to creditors. For instance, a judge might need to rule on whether a particular asset falls under a legal exemption or whether a creditor has a valid claim to certain assets. Additionally, the judge may rule on the validity of claims by secured and unsecured creditors, which would affect the distribution of assets. So, while the judge doesn't unilaterally determine the amount of assets creditors can seize, their interpretations and rulings can significantly influence what is eventually seized, within the confines of the law. A judge more favorable to women may interpret exemptions and claims in a way that protects a greater portion of assets owned by female debtors or entrepreneurs. While such rulings could provide immediate relief to female entrepreneurs, they may also make creditors more cautious. Financial institutions might perceive female debtors as higher-risk, which could make accessing credit more difficult for women in the long run, with banks reducing the supply of credit in response to the moral hazard problem.

Overall, there are 94 federal judicial districts, each with a bankruptcy court. These districts are organized within 12 regional circuits. Each of the 50 states has at least one judicial district, with larger states having multiple districts. Bankruptcy processes can generally be divided into two primary types: liquidation and negotiation for reorganization. The US Bankruptcy Code includes both of these procedures: Chapter 7 pertains to liquidation, while Chapter 11 and Chapter 13 deals with reorganization. Chapter 13 is available to individuals and sole proprietors. Small companies formed as corporations, partnerships, or other entities aren't eligible for Chapter 13 relief. However, that's not to say that someone who owns a business can't file an individual Chapter 13. Almost anyone can file for bankruptcy under

Chapter 11. Individuals, corporations, partnerships, joint ventures, and limited liability companies are all eligible to be Chapter 11 debtors but Chapter 11 cases are complex and expensive, which is the most significant disadvantage for small business owners. It's also why Chapter 11 cases make up only a tiny percentage of bankruptcy cases filed. However, special procedures available to small businesses through Chapter 11, Subchapter V can help lower costs significantly.

Typically, the bankruptcy process starts when a petition is filed for protection under one of these chapters. In most instances, the debtor initiates the petition and selects the appropriate bankruptcy chapter. However, in specific situations, creditors have the right to file an involuntary bankruptcy on behalf of the debtor. In the case of Chapter 7 bankruptcy, businesses expect to liquidate all assets of the firm and hence face a relatively straightforward process, but it can be lengthy. A trustee is assigned to oversee the liquidation of the business assets, and proceeds from the asset sales are used to pay back creditors according to their security and priority. According to US Bankruptcy Court filing statistics, liquidations are frequent, as about 57 percent of all business bankruptcy filings in the US are Chapter 7 filings.

A substantial number of companies initiating bankruptcy proceedings under Chapter 13 or Chapter 11 eventually transition to Chapter 7 via case conversion. Conversion to Chapter 7 occurs when the bankruptcy judge approves a petition to convert the case. Conversion petitions are typically filed either by a creditor or the court itself, supplemented with a brief delinating the rationale behind the assertion that liquidation would provide the highest recovery prospects for the creditors. It is important to note that there exists a standard set of criteria that judges use to transition a case from Chapter 13 or Chapter 11 to Chapter 7, but the application of these criteria varies widely among different judges. This inconsistency stems from the subjective interpretation of the guidelines. Because bankruptcy judges are

assigned randomly, similar businesses can end up with judges who have differing inclinations towards initiating the liquidation process. In Section 5, we delve deeper into this inconsistency among judges as a means to estimate the likelihood of a particular business being liquidated. Companies that continue under Chapter 11 or Chapter 13 engage in a formal negotiation process where they and their creditors work together to develop a plan detailing the restructuring efforts to be implemented, which can range from establishing a new capital structure to asset liquidation. However, these Chapter 11 and Chapter 13 negotiations are often hampered by various bargaining expenses and conflicts of interest between principals and agents, leading to potentially suboptimal resolutions.

3 Data description

We collect data on bankruptcy filings from various sources, including the Integrated Database (IDB) provided by the Federal Judicial Center. This database features details such as case opening and closure activity, debtor types, the nature of businesses involved, and financial information like assets, liabilities, and monthly income of the debtor. IDB also includes information on case opening and closure activity, along with final case disposition. Although the data does not contain debtor names or other personally identifiable information, each record includes the docket number and jurisdictional district. This allows us to link the data to Public Access to Court Electronic Records (PACER), LexisNexis Public Records, and Courtlistener, platforms that provide additional data, including the names of presiding judges, businesses, and debtors. We eliminate cases that are still pending, have been consolidated into another primary case, or have indeterminate outcomes. Additionally, we exclude any cases for which dockets are either unavailable or incomplete in the PACER system.

We obtain data on business information from the NETS (National Establishment Time-

Series) database, which is a comprehensive source of longitudinal data on business establishments in the United States. The NETS database originates with Dun & Bradstreet and is compiled into a time series by Don Walls & Associates who also clean and update the data with each year's release. The NETS database tracks U.S. establishments annually in detail from the first year they are active to their last year. The database is free of survivorship bias and it contains information on various metrics such as employment numbers, annual revenues, industry classifications, addresses, and other business-related characteristics. We merge NETS and bankruptcy data by business name– which includes legal business name and, if different, trade name– year and business address.[4] We drop nonprofits, companies in education services, utilities, and government offices.

Although the NETS have an indicator for whether the business is minority-owned or the gender of the controlling stakeholder, the information on female and minority ownership is only for the last year (2020, in our case) and does not vary over time. Ownership changes during the sample period could introduce measurement error in our gender variable, which would tend to attenuate the estimates. To address this shortcoming, we supplement our data with business registration records from states, OpenCorporates, LexisNexis, LinkedIn profiles, and company websites. We infer business owner's gender based on first names using historical data from the U.S. Social Security Administration, HMDA loan applications[5], the decennial Census data (via IPUMS USA) between 1880-2021, as well as ChatGPT. We adopt the method outlined by Chari and Goldsmith-Pinkham (2017) to estimate the likelihood of

[4]Sole proprietors are legally obligated to use their own names as the official names of their businesses. However, they are also allowed to conduct business using a different name, known as a trade name. In Chapter 13 bankruptcy filings, debtors are required to provide the name of their business and any other names that have been used previously, including trade names and "doing business as" names.

[5]The Equal Credit Opportunity Act (ECOA) and Regulation B generally prohibit a creditor from inquiring "about the race, color, religion, national origin, or sex of an applicant or any other person in connection with a credit transaction" with a few exceptions, including for applications for home mortgages covered under the Home Mortgage Disclosure Act (HMDA). Information on applicant race, gender and ethnicity, however, is often required to conduct fair lending analysis to identify potential discriminatory practices in underwriting and pricing outcomes

a particular name being male or female. We categorize names with over a 95 percent gender probability as either male or female accordingly. For those names that do not match, or have a gender probability of less than 95 percent, are classified as having an indeterminate gender. Following this procedure, we are able to confidently identify the gender for 97 percent of busines owners in our sample.

Every year, approximately 350 bankruptcy judges handle cases across 94 federal courts. These judges are appointed by the U.S. Court of Appeals, with Congress determining their total number. They serve 14-year terms that can be renewed. Importantly, these judges are responsible for making rulings in both business and non-business bankruptcy cases. We exclude the Northern Marianas Islands, the Virgin Islands, Guam, Alaska, and Puerto Rico from this study. Moreover, since the Western and Eastern Districts of Arkansas have shared bankruptcy judges, we consider them as one district in our research. After compiling the names of bankruptcy judges from case dockets, we compile their biographical information, political leaning, gender, age, race from Courtlistener, bankruptcy court websites, LinkedIn, LexisNexis, press releases, state voting records, and Marquis Who's Who.

Panel A of Table 1 presents the summary statistics at the firm level including filers and non-filers whereas in Panels B and C we focus only bankruptcy filers and judges. On average, a firm in the sample has $1.7 million in sales, with female ownership at approximately 36% and minority ownership at a mere 1.6%. The typical petitioner in the sample holds assets worth $711,200 but is burdened with a debt that is triple the value of these assets, and 47% of this debt is secured. Regarding the judiciary, 82% of the judges are male, 79% are white, and each has, on average, 9 years of experience in the judiciary.

4 Randomness

It is important to note that our identification strategy relies on the assumption that cases are randomly assigned to bankruptcy judges *within* a given district court. This implies that although business characteristics might be influenced by the district where they operate, the pairing of businesses and judges within districts is random. If each judge is assigned a comparable set of cases, variations in rulings can be attributed to judge-specific effects. By law, a business can only file for bankruptcy in the districts where it operates. Most small businesses operating solely in one district, don't have the option to choose their district for filing bankruptcy. This stands in contrast to large firms with operations spread across various states and districts, potentially enabling them to opt for a favorable jurisdiction, a practice known as forum shopping. Bankruptcy cases within specific industries might also have distinct characteristics that are best addressed by a judge with specialized knowledge or experience in those industries. As such, courts may intentionally assign cases to judges who possess relevant expertise. Finally, while the assignment of cases to judges is random, the timing of case filings is not. For instance, some bankruptcy attorneys might be privy to the schedules of specific judges, knowing the periods when their caseloads are light. These attorneys might strategically choose to file during these times to increase the odds of their cases being assigned to those judges (Chang and Schoar, 2007). To mitigate the concerns regarding non-randomness of case assignments, we run a battery of randomness tests using the following linear probability model:

$$\mathbf{I}(Assignment)_{i,j,t} = \mathbf{J}'_{j,t}\gamma_1 + Female_{it}\prime\gamma_2 + \lambda_j + \mu_{dt} + \varepsilon_{i,j,t} \tag{1}$$

where $\mathbf{I}(Assignment)_{i,j,t}$ is a binary variable equals one if judge j is assigned to debtor i's case at time t, and zero otherwise. $\mathbf{J}'_{j,t}$ is the vector of characteristics associated with bankruptcy judges such as education, industry expertise, political leaning, and caseload. $Female_i$ is an indicator for female business owners (i.e., debtors).

If the assignment of cases across male and female business owners are not random, then we expect the coefficient estimates be statistically significant. λ_j is the judge fixed effects, absorbing time-invariant attributes like gender, race, and other unobservable personal traits. In addition, since judges are only assigned within a court district, we include court district fixed effects interacted with year fixed effects, μ_{dt}. The district-year fixed effects is essential to mitigate the concerns that debtors could strategically time their case filings to maximize the chances of their cases being allocated to a specific judge. Finally, in certain specifications, we replace the *Female* indicator with business owner (i.e., debtor) fixed effects which controls for debtor's gender, race and unobservable traits. We cluster standard errors by district and year.

Table 2 reports the regression results and F-statistics for all judge coefficients from different models. Column (1) uses all controls and district-year fixed effects. Column (2) replaces district-year fixed effects with the judge fixed effects whereas Column (3) displays the results of a specification with all fixed effects and (unsubsumed) controls. We observe that the F-statistics are small, leading to the rejection of the hypothesis that the fixed effects are collectively significant. Overall, the insignificant coefficient estimates and F-statistics indicates no evident correlation between case assignments and the characteristics associated with the debtor (i.e. business) and judge assigned to the bankruptcy case.

5 Emprical results

5.1 Court Outcomes

Key decision-makers often make choices that lead to distinct disparities among diverse groups. In this section, our objective is to conduct an empirical examination of potential gender bias in bankruptcy outcomes and evaluate its effects on female-owned business dynamics. Formally, we estimate the following empirical model:

$$\begin{aligned} Outcome_{i,j,t} &= \beta_1 Female_i + \mathbf{B}'_{it}\beta_2 + \mathbf{J}'_{j,t}\beta_3 \\ &\quad + \lambda_j + \mu_{dt} + \varepsilon_{i,j,t} \end{aligned} \tag{2}$$

where $Outcome_{i,j,t}$ is a binary variable indicating the outcome of a bankruptcy case for business owner i ruled by judge j at time t. As before, $Female_i$ is an indicator for female business owners (i.e., debtors). We exclude debtor fixed effects since they absorb the coefficient of interest, β_1. Instead, we define $\mathbf{B}_{i,t}$ as the vector of business and business owner characteristics such as race, natural logarithms of equity– defined as the difference between debtor's assets and liabilities– and debtor's annual income, business size (i.e., logarithm of annual sales), HHI index, measured at the NAICS5 industry-year level, the percentage of total debt that is secured, PAYDEX scores– which is a dollar-weighted numerical indicator of how a firm paid its bills based on trade experiences reported to D&B through its 4,000 trade exchange participants in the United States. $\mathbf{J}'_{j,t}$ and μ_{dt} are defined as per Equation (1). In this specification, the judge fixed effetcs, λ_j, can be interpreted as the relative tendency or rate at which each judge approves or rejects a particular motion.

When a Chapter 13 or Chapter 11 bankruptcy is initiated, it typically resolves in one of threeways. First, the case can be dismissed, removing the debtor from the bankruptcy court's

protection. Second, the case might be converted to another Chapter of the Bankruptcy Code– usually Chapter 7, where operations cease, and assets are liquidated for distribution to creditors. These first two outcomes are often viewed as the unsuccessful resolution of the reorganization effort. Third, the process can lead to the successful reorganization and restructuring of the debtor's financial obligations, permitting the continuation of business activities. Therefore, the dependent variable *Outcome* takes a value of one for the third scenario, which is deemed a success, and value of zero for the first two scenarios, categorized as failures. In the case of Chapter 7 filing, either a discharge is granted (*Outcome*=1) or the case is dismissed (*Outcome*=0).

Table 3 focuses on Chapter 11 and Chapter 13 filers. Depending on the fixed effects structure, the results indicate that female filers have a 16 to 22 percentage points lower chance of getting their cases restructured compared to their male counterparts. Given the 61 percent average dismissal or case conversion rate for reorganization cases, female filers face almost 26 percent higher risk of dismissal or conversion, even after accounting for the judge and district-year fixed effects. Turning to Chapter 7 filers, the results in Column (1) of Table 4 show that after using business-, debtor-, judge-specific controls and district-year fixed effects, female business owners have a 1.9 percentage points higher probability of case dismissal compared to male business owners. When we replace ditrict-year fixed efefcts with judge fixed effects in Column (2), this difference drops slightly to 1.3 percentage points, which represents a 55 percent increase from the average dismissal rate of 2.4 percent for such cases. Moreover, adding the district-year in Column (3) slightly reduces the observed gender disparity in Chapter 7 dismissals. Overall, Tables 3 and 4 show that female filers face a notably higher risk of dismissal in bankruptcy cases.

Next, we gain additional insights into different mechanisms that might be in play. A potential factor to consider is the expertise of the judge, which may allow judges to develop

better and more reliable ways of assessing cases. Research by Iverson et al. (2022) finds that cases overseen by seasoned judges tend to conclude faster in the bankruptcy process, while cases managed by less experienced judges often face challenges in reorganization and exhibit poorer debt recovery outcomes. Equally important, bankruptcy cases in certain industries may possess unique characteristics that would benefit from having a judge with specic industry knowledge and/or past experience handling these type of cases (Iverson, 2019). In jurisdictions where certain industries are prevalent, a bankruptcy judge might accumulate practical experience over time related to that industry's specific challenges and characteristics as they pertain to bankruptcy. For instance, if bankruptcy judges regularly oversees cases involving businesses in the energy sector, they might develop an informal familiarity with the common financial structures, challenges, and stakeholders of that sector. Similarly, a bankruptcy judge in a district with a high number of technology companies might become familiar with issues specific to tech startups or intellectual property valuation. For the purpose of our study, we contruct two measures of expertise, where one focuses on industry-specific knowledge, while the other considers the judge's courtroom tenure at the point of the bankruptcy's initiation. The estimation results are presented in Table 5, where we interact the *Female* indicator with judges' industry and courtroom expertise in our baseline model (Equation (2)). We find that judges with greater experience are less likely to issue unfavorable rulings against female business owners in both reorganization (columns 1 and 3) and Chapter 7 (columns 2 and 4) cases.

There is also a substantial literature on the role that personal characteristics of judges might play in judicial decisions. Research suggests that personal characteristics of judges can potentially influence judicial outcomes, driven by the tendency to gravitate towards those with similar traits– such as gender (Butcher et al., 2017; Knepper, 2018), race (Yang, 2015), social background (George and Weaver, 2017); political identity (Nagel, 1961; Huang

et al., 2019)– and more. This behavior aligns with the economic perspective on judicial behavior, which portrays judges as rational actors pursuing their self-interests (Posner, 2010; Epstein, Posner, and Landes, 2013). In the context of gender, female judges, who might have encountered gender-specific challenges or biases in their personal or professional lives, could possess a heightened sensitivity or understanding when assessing cases involving female filers. Such an understanding might arise from empathy, shared experiences, or a nuanced recognition of the societal pressures women face. We explore whether the gender of a judge influence the bankruptcy filing outcomes when the business ower is female. By including an additional interaction term ($Female \times Female\ Judge$) in our baseline model (Equation (2)), we find that the coefficient on the interaction terms in Table 5 indicates that female judges are less likely to rule against female business owners in reorganization and Chapter 7 filings. This is consistent with homophily effects.

5.2 Performance and survival

Reorganization is distinct from liquidation in that in liquidation, claimholders and interest-holders are immediately paid out of the proceeds from the sale of the firm, whereas in reorganization they are paid over an extended period of time out of the debtor's future earnings. Therefore, reorganization settlements substantially change emerging firms' financial and corporate governance structures and thus impact their post-emergence performance. From an economic standpoint, the justification for having two separate bankruptcy procedures is that there are two different types of firms in bankruptcy: firms economically inefficient in the sense that their resources would be more valuable in some alternate use, and those that are economically efficient despite their financial distress since their resources have no higher value use. Economically inefficient failing firms should be liquidated, freeing their resources

to be allocated to higher value uses, while economically efficient but failing firms should be saved. However, in practice, it could be that economically inefficient firms are saved in Chapter 11 or Chapter 13 (Type I error), while economically efficient firms are shut down under Chapter 7 (Type II error).

The results from Section 5.1 suggest that judges may rule differently based on the gender of the business-owner, which could potentially exacerbate the effects of Type I and II errors. In this subsection, we analyze the efficiency of rulings by evaluating the post-bankruptcy performance of restructured businesses. We use a difference-in-difference (DiD) analysis while controlling for individual, θ_i, district-year, μ_{dt}, and industry, μ_s, fixed effects. More specifically,

$$\begin{aligned} Exit_{i,d,t} &= \beta_1 Post(Reorganization)_t \times Female_i + \beta_2 Post(Reorganization)_t \\ &\quad + \theta_i + \mu_{dt} + \mu_s + \varepsilon_{i,t} \end{aligned} \tag{3}$$

We proxy for post-emergence performance using two measures: sales growth and voluntary exit. For exit, $Exit_{i,d,t}$ is a dichotomous variable that takes the value of one if business owner i in district d ends the business at time t and is zero otherwise; whereas sales growth, $Sales\ Growth$, is defined as the log differences in business sales for owner i. $Post(Reorganization)$ is an indicator for periods following the court ruling for reorganization. Our sample includes only business owners who are allowed to restructure and continue their operations after filing for Chapter 13 or Chapter 11. We find that after reorganization, female business owners are not more likely to exit than male counterparts. For instance, the estimate for the DiD interaction term in Table 6 (column 2), with full set of fixed effects, indicates that likelihood of exit for women-owned businesses is 19 percent less than that of men owned businesses two years after remergence. The last two columns of Table 6 present the analysis for the

gender effects on sales growth post bankruptcy and imply that female-owned businesses tend to overperform in comparison to men-owned businesses. Economically, women-owned businesses have a sales growth that is about 8 percent higher than that of male-owned businesses. One concern with the empirical specification for exit employed in Table 6 is that it does not explicitly include forward-looking or "anticipatory" variables relating to expected profits. But note that forward-looking proxies for expected profits would ceteris paribus lower the likelihood of exit. Hence, there would be a downward bias in the estimates of the coefficients (in columns 1 and 2) because of omitted forward looking proxies for expected profits, but there will be an upward bias if the omitted variables are positively correlated with exit.

5.3 Egalitarianism

Cultural nuances shape the landscape of entrepreneurship, particularly when viewed through the lens of gender. These cultural norms often translate into limited access to capital, mentoring, and networks, which are vital for business success. Conversely, cultures that advocate for gender equality tend to foster a more supportive environment for women entrepreneurs, enabling them to pursue and grow their business ventures with greater support and fewer barriers. Yet, even in egalitarian societies, subtle cultural biases can linger, underscoring the complexity of gender dynamics in the entrepreneurial world. In this section, we explore the role of gender-egalitarianism in our results.

Drawing on the method used by McLean et al. (2023), we create a gender equality index for each *district* in our study. We do this by using U.S. Census (IPUMS) data, which gives us details about where people were born and their self-identified ancestry.[6] With that, we

[6]Country-level egalitarian index is constructed based on two surveys. The World Value Survey asks questions regarding individual beliefs about the societal roles of women. Hofstede survey assesses the extent to which a society upholds traditional roles for men and women. Focusing on specific questions that gauge

assign each 2010 Census participant to their origin country's gender equality index value from Table 1 in McLean et al. (2023), and averaging these values across respondents within each U.S. district to get our district-level egalitarianism index. In our empirical tests, we create a new indicator variable, $Egalitarian$, which takes a value of one for districts where the gender equality index in year t exceeds the median for that year. Then, we interact $Egalitarian$ with the $Post(Reorganization) \times Female$ term in Equation (3). As before, our sample includes only business owners who are allowed to restructure and continue their operations after filing for Chapter 13 or Chapter 11. We report our findings in Table 7. The results show that the performance of women-owned businesses tends to be stonger (i.e., lower exit rates and higher sales growth) following reorganization in districts where egalitarian values are not prevalent.

5.4 Local loan supply shocks

Access to credit is critical to starting a new business and to its performance and gender gap in access to still remains prevalent in the traditional credit market. For instance, small businesses owned by women only receive 16 percent all traditional small business loans and female applications are more likely to be rejected, or have more stringent terms, than their men counterparts. There is also evidence that women are constrained in accessing equity and venture capital, receiving a disproportionately small share of funding– 2.3 percent for women-led startups. Women also tend to raise smaller amounts of capital also when it comes to financing business expansion. To study how much the availability of financing plays a role in the post-emergence success and female-owned business entry, we adopt the approach suggested by Davis and Haltiwanger (2019) and construct local loan supply shocks utilizing

individual views on the societal roles of women, McLean et al. (2022) construct a county-level index using the first principal component analysis of the survey responses.

data on small business loan activity that banks file in compliance with the Community Re-Investment Act of 1996 (CRA). We estimate the following equation that decomposes the change in local (that is, district-level) equilibrium credit into local demand and bank supply components:

$$g_{dbt}^{SBL} = \mu_{dt} + Bank_{bt} + \varepsilon_{dbt} \tag{4}$$

where $g_{db,t}^{SBL}$ is the growth rate in the volume of small business lending by bank b in district d in year t. The district-year fixed effects, μ_{dt}, control for variations in bank lending due to local economic conditions, which we interpret as measuring the effects of local demand for credit. Finally, $Bank_{b,t}$ are the bank fixed effects, which we interpret as measuring changes in bank-specific loan supply. The estimated bank fixed effects from Equation (4) then capture the national growth of small business lending by the bank-holding company b that are purged of banks' differential exposure to regional variation in demand for small business loans.

We then create "predicted" local small business lending shocks by multiplying the national small business lending shocks with the local small business lending distribution. More specifically, we use estimated bank-specific supply shocks (from Equation (4)) to construct the locally exogenous measure of the predicted lending supply shock for district d in year t in the spirit of a Bartik (1991) IV,[7]

$$SBL_{d,t} = \sum_{b} \omega_{db,t-1} \widehat{Bank}_{b,t} \tag{5}$$

where $\omega_{db,t-1}$ is bank b's market share of small business lending in district d in year $t-1$. $SBL_{d,t}$ captures the cross-district variation in small business lending by national banks

[7]Khwaja and Mian (2008) use a similar methodology to purge firm-specific credit demand shocks for matched bank-firm lending data from Pakistan. See also Amiti and Weinstein (2017), who apply the Khwaja-Mian methodology to Japanese data to show that supply-side financial shocks can have large impacts on firm investment.

based on the regional distribution of their loans to small enterprises. The advantage of this approach is that the identifying assumption now only requires that banks with above- or below-average supply-shifts are not systematically sorted into MSAs with worse-than-average outcome shocks. We re-estimate Equation (3) by including $SBL_{d,t}$ as a covariate. Table 8 presents the analysis for the effects of access to financing on the exit rates and sales growth of businesses following bankruptcy reorganization. The findings show that women-owned businesses with better access to local financing exhibit stronger business performance, characterized by lower exit rates and higher sales growth, compared to businesses owned by men.

5.5 Entry

The prospect of unfavorable treatment in bankruptcy courts significantly influences the business landscape for female entrepreneurs, impacting their willingness to pursue new ventures. This may also lead to more cautious lending, as financiers might worry about negative outcomes for businesses led by women, potentially making funding more limited and costly. To examine if case dismissals have any effect on female-owned business entry, we estimate the following specification:

$$\begin{aligned} Entry_{i,d,t} &= \beta_1 Dismissal_{d,t} \times Female_{i,t} \\ &\quad + \beta_2 Female_{i,t} + \beta_3 Dismissal_{d,t} + \mathbf{X}'_{d,t}\beta_4 + \zeta_{ds} + \mu_{st} + \varepsilon_{d,t} \end{aligned} \tag{6}$$

where the dependent variable, $Entry_{i,d,t}$ is a dichotomous variable that takes the value of one if individual i starts a new business in district d at time t and is zero otherwise. The first term on the right-hand side interacts the female business ownership, $Female$, with the number of case dismissals, $Dismissal$, following a bankruptcy filing in district d between year

t-1 and t, thus, captures the DiD effect for the situation at hand. Meanwhile, $\mathbf{X}_{d,t}$ includes a rich set of observable district-level covariates relating to business entry, such as conditions related to business opportunities, business financing access, and labor market conditions that signicantly impact the entry decision. We use the growth of establishments in the district as the indicator for business opportunities, percentage of deposits concentrated in local banks as a proxy for access to entrepreneurial financing, local unemployment rate as the indicator for labor market conditions in the district. We also include appreciation in local housing price as a measure of collateral enhancement. We control for latent time-varying shocks at the sector level through industry×year fixed effects, μ_{st}. We also utilize district×industry fixed effects, ζ_{ds}, to help control for regional variations in industry trends.

The estimation results for Equation (6) are presented in Table 9. The first column includes the DiD term with full set fixed effects and controls, whereas Column (2) replaces district-year fixed effects with the district-level macro and labor market controls, $\mathbf{X}'_{d,t}$. In both specifications, the estimates of β_1 are negative and significant at 1 percent levels. These estimates are also economically significant. For example, the estimate in column 2 implies that a one standard deviation increase in the regional liquidation rates reduces the district-level female-owned business entry rate by 9 percent relative to male-owned entry rates. Table 9 (colums (3)–(4)) also imply that the adverse effect of high bankruptcy dismissal rate women-owned business entry is moderated in districts with easier access to finance and greater egalitarianism, other things held fixed.

6 Conclusion

The disparity in entrepreneurship between genders can be attributed to several factors, such as societal perceptions of women in the workforce, more pronounced and numerous hurdles in

obtaining credit and venture capital due to biases in the financial sector. Additionally, women may face institutional barriers, including difficulties in dealing with regulatory frameworks and limited access to essential business networks for growth and support. Therefore, the way the judicial system addresses the needs of various types of debtors plays a critical role in the prospects of businesses led by women. In this paper, we employ bankruptcy filings as a platform to analyze if businesses led by women receive more or less favorable outcomes in bankruptcy courts than their male counterparts under similar conditions, and explore the resulting impact on the dynamics of women-owned businesses. Our findings indicate that female business owners are 26 percent less likely to have their bankruptcy cases resolved in their favor compared to male business owners. This discrepancy is more pronounced when the judge is male and has limited courtroom or industry-specific experience. Additionally, we observe that businesses restructured by women tend to have a lower failure rate but also exhibit reduced sales growth compared to those restructured by men. Importantly, the trend of less favorable court decisions for women in bankruptcy cases correlates with a decrease in female business startups relative to male startups. This effect is more evident in regions with strong egalitarian values and where obtaining bank financing is more challenging.

7 References

Amiti, M. and D.E. Weinstein, 2017. "How much do idiosyncratic bank shocks affect investment? Evidence from matched bank-firm loan data," Federal Reserve Bank of New York, Working paper.

Bartik, J., 1991. "Who benefits from state and local economic development policies?" Kalamazoo, MI: Upjohn Institute for Employment Research.

Becker-Blease, J.R. and J.E. Sohl, 2007. "Do women-owned businesses have equal access to angel capital?" Journal of Business Venturing 22: 503–521.

Butcher, K.F., K.H. Park, and A.M. Piehl, 2017. "Comparing apples to oranges: Differences in women's and men's incarceration and sentencing outcomes," Journal of Labor Economics 35, 201–234.

Calder-Wang, S. and P. Gompers, 2021. "And the children shall lead: Gender diversity and performance in venture capital," Journal of Financial Economics 142: 1–22.

Chari, A. and P. Goldsmith-Pinkham, 2017. "Gender representation in economics across topics and time: evidence from the NBER Summer Institute," NBER working paper.

Davis, S.J. and J.Haltiwanger, 2019. "Dynamism diminished: The role of housing markets and credit conditions," BFI Working Paper.

Epstein, L., R.A. Posner and W.Landes, 2013. "The behavior of federal judges : a theoretical and empirical study of rational choice," Cambridge, Mass: Harvard University Press.

George, T. and T. Weaver, 2017. "The role of personal attributes and social backgrounds on judging," in L. Epstein and S. Lindquist (eds.), The Oxford Handbook of U.S. Judicial Behavior.

Huang, A., K. Hui, and R. Li, 2019. "Federal judge ideology: A new measure of ex ante litigation risk," Journal of Accounting Research 57: 431–489.

Iverson, B., 2018. "Get in Line: Chapter 11 restructuring in crowded bankruptcy courts," Management Science 64, 5370–5394.

Iverson, B., J. Madsen, W. Wang and Q. Xu, 2022. "Financial costs of judicial inexperience: Evidence from corporate bankruptcies," Journal of Financial and Quantitative Analysis 58: 1111–1143.

Katz, J.A. 1990. "Longitudinal analysis of self-employment follow-through," Entrepreneurship and Regional Development 2:15– 6.

Knepper, M., 2018. "When the shadow is the substance: judge gender and the outcomes of workplace sex discrimination cases." Journal of Labor Economics 36, 623–664.

Khwaja, A.I. and A. Mian, 2005. "Do lenders favor politically connected firms? Rent provision in an emerging financial market," Quarterly Journal of Economics 120, 1371–1411.

Lim, C.S., B.S. Silveira, and J.M. Snyder, 2016. "Do judges' characteristics matter? ethnicity, gender, and partisanship in texas state trial courts." American Law and Economics Review 18, 302–357.

McLean, R.D., C. Pirinsky and M. Zhao, 2023. "Corporate leadership and inherited beliefs about gender roles," Journal of Financial and Quantitative Analysis 58: 3274–3304.

Nagel, N., 1961. "Political party affiliation and judges' decisions," American Political Science Review 5, 843–850.

Parker, S.C. 2009. The Economics of Entrepreneurship. Cambridge University Press.

Philippe, A., 2017. "Gender disparities in criminal justice." Working Paper, Université Toulouse.

Posner, E.A., 2008. "Does political bias in the judiciary matter?: Implications of judicial bias studies for legal and constitutional reform," The University of Chicago Law Review 75: 853–883.

Schanzenbach, M., 2005. "Racial and sex disparities in prison sentences: The effect of district-level judicial demographics." The Journal of Legal Studies 34, 57–92.

Steffensmeier, D. and C. Hebert, 1999. "Women and men policymakers : Does the judge's gender affect the sentencing of criminal defendants?" Social Forces 77, 1163–1196.

Yang, C.S., 2015. "Free at last? judicial discretion and racial disparities in federal sentencing," The Journal of Legal Studies 44, 75–111.

Table 1. Summary statistics

This table presents summary statistics for our panel data, which is constructed by merging bankruptcy filings sourced from the Integrated Database (IDB) provided by the Federal Judicial Center, Courtlistener, LexisNexis, and PACER, with the business information from the NETS (National Establishment Time-Series) database. Only the observations from the merged dataset are kept if the business owner's gender is identifiable through the NETS database, state business registration records, OpenCorporates, LexisNexis, and LinkedIn.. Panel A includes data from both filers and non-filers, while Panels B and C are exclusively focus on the bankruptcy sample. All variables are formally defined in the Appendix.

	Mean	Median	Standard deviation
Panel A. Firm level			
Sales ($millions)	1.660	0.525	3.073
Sales growth	0.075	0.050	0.168
Employee-to-sales	12.57	14.00	11.89
HHI	0.225	0.100	0.276
PAYDEX score	0.827	0.800	1.085
Corporation	0.375	0.000	0.442
Female-owned	0.361	0.000	0.129
Minority-owned	0.016	0.000	1.118
Panel B. Debtor level			
Assets ($thousands)	711.2	732.8	328.0
Debt/Assets	2.876	4.100	3.682
Secure debt (%)	0.467	0.420	0.839
Panel C. Judge level			
Male	0.820	1.000	0.442
White	0.790	1.000	0.788
Courtroom experience (years)	9.285	10.00	7.267
Top law school	0.110	0.000	0.029
Democrat	0.634	1.000	0.050

Table 2. Random Assignment

This table presents linear probability regression estimates of judge assignment to bankruptcy cases. The dependent variable is an indicator equal to one if judge is assigned to a case, zero otherwise. All regressions include fixed effects as indicated in the table and control variables are formally defined in the Appendix. The table reports the results of a joint *F*-test for all judge coefficients. Robust standard errors in parentheses are double clustered at the district and year level. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

	(1)		(2)		(3)	
	Estimate	*t*-stat	Estimate	*t*-stat	Estimate	*t*-stat
Female	0.017	(0.321)	0.011	(0.409)		
Minority	0.010	(0.029)	0.014	(0.056)		
Log(sales)	0.007	(1.326)	0.008	(1.453)	0.010	(1.574)
PAYDEX score >P50	0.002	(0.878)	0.001	(0.739)	0.010	(0.928)
Log(Equity)	0.001	(1.886)	0.009	(1.129)		
HHI	−0.019	(−1.125)	−0.012	(−1.008)	−0.015	(−1.027)
Secured (%)	−0.004	(−1.131)	−0.010	(−1.216)		
Judge Race (White=1)	0.016	(0.455)				
Education (Top law school=1)	0.011	(0.579)				
Experience	−0.009	(−0.286)	−0.008	(−0.727)	−0.010	(−0.625)
Democrat	0.008	(0.333)				
Busy	−0.014	(−0.556)	−0.013	(−0.929)	−0.017	(−0.125)
Debtor f.e.	X		X		✓	
Judge f.e.	X		✓		✓	
District-year f.e.	✓		X		✓	
R-squared	0.335		0.396		0.446	
F-statistics (p-values)	0.244		0.282		0.298	

Table 3. Case Outcomes: Reorganization

This table relates the gender of business owners to the likelihood of successful outcomes in Chapter 11 and Chapter 13 bankruptcy cases. The dependent variable is an indicator for whether a Chapter 11 or Chapter 13 bankruptcy petition process leads to a successful reorganization and restructuring of the debtor's financial obligations, permitting the continuation of business activities. All regressions include fixed effects as indicated in the table and control variables are formally defined in the Appendix. Robust standard errors in parentheses are double clustered at the district and year level. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

	(1)		(2)		(3)	
	Estimate	*t*-stat	Estimate	*t*-stat	Estimate	*t*-stat
Female	−0.221***	(−3.870)	−0.168***	(−2.743)	−0.155***	(−2.743)
Minority	−0.104*	(−1.729)	−0.097*	(−1.867)	−0.077*	(−1.867)
Log(sales)	0.015**	(2.019)	0.018**	(2.172)	0.016**	(2.125)
PAYDEX score >P50	0.008*	(1.727)	0.011*	(1.842)	0.010*	(1.825)
Log(Equity)	0.009*	(1.886)	0.009*	(1.935)	0.008*	(1.927)
HHI	−0.017	(−1.134)	−0.022	(−1.278)	−0.019	(−1.111)
Secured (%)	−0.008**	(−2.122)	−0.010*	(1.714)	−0.007*	(−1.823)
Judge race (White=1)	−0.010	(−1.145)				
Education (Top law school=1)	−0.021	(−1.693)				
Experience	−0.013	(−1.304)	−0.013	(−1.304)	−0.022	(−1.533)
Democrat	0.010**	(2.107)				
Busy	0.007	(1.135)	0.009	(1.143)	0.010	(0.714)
Debtor f.e.	X		X		X	
Judge f.e.	X		✓		✓	
District-year f.e.	✓		X		✓	
R-squared	0.326		0.390		0.455	

Table 4. Case Outcomes: Chapter 7

This table relates the gender of business owners to the likelihood of successful outcomes in Chapter 7 bankruptcy cases. The dependent variable is an indicator for whether a discharge is granted in a Chapter 7 bankruptcy petition process. All regressions include fixed effects as indicated in the table and control variables are formally defined in the Appendix. Robust standard errors in parentheses are double clustered at the district and year level. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

	(1)		(2)		(3)	
	Estimate	*t*-stat	Estimate	*t*-stat	Estimate	*t*-stat
Female	−0.019***	(−4.221)	−0.013***	(−3.816)	−0.014***	(−3.105)
Minority	−0.011*	(−1.920)	−0.009**	(−2.171)	−0.010*	(−1.782)
Log(sales)	0.119**	(2.318)	0.121***	(2.575)	0.124**	(2.159)
PAYDEX score >P50	0.005	(1.221)	0.009*	(1.219)	0.009*	(1.738)
Log(Equity)	0.087*	(1.776)	0.109*	(1.821)	0.108*	(1.809)
HHI	−0.007	(−1.049)	−0.009	(−1.190)	−0.011	(−1.320)
Secured (%)	−0.012**	(−2.028)	−0.010*	(−1.892)	−0.009*	(−1.713)
Judge race (White=1)	−0.009	(−1.020)				
Education (Top law school=1)	−0.007	(−0.098)				
Experience	−0.009	(−1.615)	−0.011	(−1.692)	−0.012*	(−1.725)
Democrat	0.014**	(2.705)				
Busy	0.006	(1.092)	0.006	(1.126)	0.008	(1.445)
Debtor f.e.	X		X		X	
Judge f.e.	X		✓		✓	
District-year f.e.	✓		X		✓	
R-squared	0.426		0.450		0.505	

Table 5. Channels

This table examines various channels through which the gender of business owners influences the outcomes of bankruptcy cases. Columns (1) to (4) examine the influence of judges' industry or courtroom experience, while Columns (5) and (6) explore the impact of judges' gender on their decision-making in bankruptcy cases. All specifications include controls from Table 3 (columns 1 and 3) and fixed effects, whose coefficients we do not report. All variables are formally defined in the Appendix. Robust standard errors in parentheses are double clustered at the district and year level. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

	Judge experience				Judge gender	
	Chapters 11, 13		Chapter 7		Chapters 11, 13	Chapter 7
	(1)	(2)	(3)	(4)	(5)	(6)
Female	−0.167**	−0.169**	−0.018***	−0.019***	−0.182**	−0.020**
	(−2.817)	(−2.136)	(−3.017)	(−3.108)	(−2.477)	(−2.325)
Industry expertise	0.0019*	0.009	0.0007	0.0007		
	(1.787)	(1.625)	(1.325)	(1.236)		
Courtroom expertise	0.0009	0.0011	0.0004	0.0006		
	(1.529)	(1.236)	(1.087)	(1.129)		
Female judge	0.0011*		0.0014*		0.072*	
	(1.829)		(1.976)		(1.728)	
Female × *Industry expertise*	0.066**	0.068*	0.011*	0.009*		
	(2.238)	(1.934)	(1.925)	(1.887)		
Female × *Courtroom expertise*	0.032*	0.028*	0.006*	0.008*		
	(1.736)	(1.922)	(1.835)	(1.936)		
Female × *Female judge*					0.024***	0.006**
					(2.725)	(2.625)
Debtor f.e.	X	X	X	X	X	X
Judge f.e.	X	✓	X	✓	X	✓
District-year f.e.	✓	✓	✓	✓	✓	✓
Other controls	✓	✓	✓	✓	✓	✓
R-squared	0.366	0.404	0.375	0.433	0.502	0.552

Table 6. Post-restructuring survival and growth

This table explores the relation between gender of business owners and average business performance after bankruptcy reemergence. In columns 1 and 2, the dependent variable, *Exit*, is a dichotomous variable that takes the value of one if business ends a business at time *t* and is zero otherwise. In columns 3 and 4, the dependent variable is the sales growth. All specifications include controls *Minority*, *PAYDEX score >P50*, *Log(Equity)*, *HHI,* and fixed effects, whose coefficients we do not report. Columns (1) and (2) also includes, *Log(Sales)* as a control variable. All variables are formally defined in the Appendix. Robust standard errors in parentheses are double clustered at the district and year level. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively**.**

	(1) Exit	(2) Exit	(3) Sales Growth	(4) Sales Growth
Female	0.0008		0.0009	
	(1.017)		(1.135)	
Post(Reorganization)	0.0016	0.0018	0.0011	0.0017
	(1.618)	(1.663)	(1.072)	(0.976)
Female × Post(Reorganization)	–0.010**	–0.009**	0.0065*	0.0059**
	(–2.201)	(–2 .045)	(1.805)	(2.183)
Debtor f.e.	X	✓	X	✓
District-year f.e.	✓	✓	✓	✓
Industry f.e.	✓	✓	✓	✓
Other controls	✓	✓	✓	✓
R-squared	0.295	0.315	0.296	0.356

Table 7. Egalitarianism and gender effects

This table examines the impact of inherited beliefs about gender roles across district on the relation between gender of business owners and average business performance after bankruptcy reemergence. In columns 1 and 2, the dependent variable, *Exit*, is a dichotomous variable that takes the value of one if business ends a business at time *t* and is zero otherwise. *Egalitarian* is an indicator variable taking a value of one in districts where the gender equality index (constructed based on U.S. 2010 Census) exceeds the sample median for that year. In columns 3 and 4, the dependent variable is the sales growth. All specifications include controls *Minority*, *PAYDEX score >P50*, *Log(Equity)*, *HHI*, *Post(Reorganization), Post(Reorganization)×Egalitarian*, and fixed effects, whose coefficients we do not report. Columns (1) and (2) also includes, *Log(Sales)* as a control variable. All variables are formally defined in the Appendix. Robust standard errors in parentheses are double clustered at the district and year level. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

	(1) Exit	(2) Exit	(3) Sales Growth	(4) Sales Growth
Female	–0.0009		0.0012	
	(–1.311)		(1.525)	
Egalitarian				
Female × Egalitarian	–0.0010*	–0.0012**	0.0008	0.0015**
	(–1.838)	(–2.016)	(1.606)	(2.038)
Female × Post(Reorganization)	–0.0106**	–0.0082**	0.0077**	0.0068**
	(–2.384)	(–2.629)	(2.199)	(2.499)
Female × Post(Reorganization)	–0.0067**	–0.0058*	0.0024*	0.0017*
× Egalitarian	(–2.038)	(–1.905)	(1.865)	(1.938)
Debtor f.e.	X	✓	X	✓
District-year f.e.	X	✓	X	✓
Industry-year f.e.	✓	✓	✓	✓
District-industry f.e.	✓	X	X	X
Other controls	✓	✓	✓	✓
R-squared	0.273	0.315	0.296	0.356

Table 8. Banks

This table examines the impact of access to local finance on the relation between gender of business owners and average business performance after bankruptcy reemergence. In columns 1 and 2, the dependent variable, *Exit*, is a dichotomous variable that takes the value of one if business ends a business at time *t* and is zero otherwise. In columns 3 and 4, the dependent variable is the sales growth. All specifications include controls *Minority*, *Log(sales)*, *PAYDEX score >P50*, *Log(Equity)*, *HHI*, *Post(Reorganization), Post(Reorganization)×SBL*, and fixed effects, whose coefficients we do not report. All variables are formally defined in the Appendix. Robust standard errors in parentheses are double clustered at the district and year level. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

	(1) Exit	(2) Exit	(3) Sales Growth	(4) Sales Growth
Female	–0.0007		0.0015	
	(–1.676)		(1.426)	
SBL		–0.0008*		0.0027*
		(–1.903)		(1.885)
Female × SBL	–0.0005*	–0.0006*	0.0008	0.0012*
	(–1.923)	(–1.967)	(1.557)	(2.150)
Female × Post(Reorganization)	–0.0107**	–0.0107**	0.0066**	0.0058***
	(–2.416)	(–2.553)	(2.199)	(2.624)
Female × Post(Reorganization)	–0.0055**	–0.0046*	0.0024*	0.0022*
× SBL	(–2.206)	(–1.899)	(1.8658)	(1.895)
Debtor f.e.	X	✓	X	✓
District-year f.e.	✓	X	✓	X
Industry-year f.e.	✓	✓	✓	✓
District-industry f.e.	✓	✓	✓	✓
Other controls	✓	✓	✓	✓
R-squared	0.295	0.313	0.224	0.286

Table 9. Entry

This table tests if an anticipation of gender-specific treatment in bankruptcy courts dissuades women from starting businesses. The dependent variable, *Entry*, is a dichotomous variable that takes value one if individual *i* starts a business in district *d* at time *t* and zero otherwise. We exclude finance, insurance, non-profit, real estate, rental and leasing sectors from our sample. All specifications include controls *Minority*, *HHI*, *Female*×*Egalitarian* (in column 3), and Female×*SBL* (in column 4), and fixed effects, whose coefficients we do not report. In Columns (2)-(4), district-year fixed effects are replaced with time-varying district-level covariates relating to business entry, such as conditions related to business opportunities, business financing access, labor market conditions that significantly impact the entry decision (such as the growth of establishments, percentage of deposits concentrated in local banks, the log of average household income, appreciation in housing price, local unemployment rate in a district), *Egalitarian* (in column 3) and *SBL* (in column 4). All variables are formally defined in the Appendix. Robust standard errors in parentheses are double clustered at the district and year level. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Female	–0.0009* (–1.924)	–0.012** (–2.023)	–0.0011** (–2.225)	–0.0016*** (–2.629)
Dismissal		–0.0005 (–1.629)		–0.0007* (-1.805)
Female × Dismissal	–0.0010* (–1.935)	–0.0016** (–2.144)	–0.0015** (–2.427)	–0.0010** (–2.099)
Female × *Dismissal*× *Egalitarian*			0.0008* (1.806)	
Female × *Dismissal* × *SBL*				0.0009** (2.076)
Debtor f.e.	X	✓	X	✓
District-year f.e.	✓	X	X	X
Industry-year f.e.	✓	✓	✓	✓
District-industry f.e.	✓	✓	✓	✓
Other controls	✓	✓	✓	✓
R-squared	0.495	0.579	0.615	0.596

Appendix: Variable Definition

Assets	amount of the debtor's total assets (debtor's real and personal property) at filing.
Busy	the number of bankruptcy cases assigned to a judge at the time of filing.
Corporation	a dichotomous variable that takes the value of one if a firm is a formal corporation.
Courtroom expertise	number of years from a judge's appointment date to the case filing date.
Democrat	a dichotomous variable that takes the value of one if a judge is affiliated with the Democratic party.
Dismissal	the number of case dismissals, Dismissal, following a bankruptcy filing in district *d* between year *t-1* and *t*.
Egalitarian	a dichotomous variable that takes the value of one for districts where the gender equality index in year *t* exceeds the median for that year. The gender equality index is constructed at the district-year level following McLean at al. (2022).
Entry	a dichotomous variable that takes value one if individual *i* starts a business at time *t*.
Exit	a dichotomous variable that takes the value of one if entrepreneur *i* ends a business at time *t* and is zero otherwise.
Equity	the difference between the debtor's assets and liabilities at filing.
Female	a dichotomous variable that takes the value of one for female-owned businesses.
HHI	the Herfindahl index measured at the NAICS5 industry-year level.
Industry expertise	the number of cases from the same two-digit SIC industry previously assigned to a judge at the time of bankruptcy filing.
Minority	a dichotomous variable that takes the value of one for minority-owned businesses.
PAYDEX score > P50	a dichotomous variable that takes the value of one for the PAYDEX score is above the sample median for a given year, where PAYDEX is a dollar-weighted 1-100 numerical score that indicates a company's payment performance reported to D&B through its trade exchange program.
Post(Reorganization)	indicator for periods following the court ruling for reorganization.
Secured	the debt the percentage of total debt that is secured.
SBL	locally exogenous component of the growth rate in small business lending for a district, constructed using a Bartik (1991)-type measure as discussed in the text.
Top law school	a dichotomous variable that takes the value of one if the judge attended a top 5 law school based on U.S. News rankings in 2020.