Disqualifying Managerial Misconduct
in Corporate Bankruptcy[*]

Donghyun Kang
Copenhagen Business School
dhk.fi@cbs.dk

S. Lakshmi Naaraayanan
London Business School
lnaaraayanan@london.edu

Kasper Meisner Nielsen
Copenhagen Business School
kmn.fi@cbs.dk

June 2024

Abstract

This study examines the introduction of bankruptcy quarantines that disqualifies managers engaging in negligent business practices for up to 3 years. Using administrative register data from Denmark, we document that disqualifications discourage future business activity: After the quarantine, individuals are 15% less likely to be managers or business owners. Disqualified individuals are also less likely to be involved in future bankruptcies or future criminal activities. At the same time, the fraction of family members of disqualified individuals who are active in a management role increases from 10% to 30%. We also find changes to the managerial labor pool, resulting in more CEOs with a criminal record and those that rely solely on social transfers. Overall, our findings provide the first systematic evidence on the governance consequences of disqualifying managerial misconduct in corporate bankruptcies.

Corporate bankruptcy law aims to strike a balance between protecting creditors and relieving debtors of financial obligations. Seminal studies document the importance of creditor protection for the well-being of financial markets and economic growth (e.g., La Porta, Lopez-De-Silanes, Shleifer, and Vishny, 1997, 1998; Levine, 1998, 1999; and Levine, Loayza, and Beck, 2000), while others document that relieving debtors of financial obligations gives them a second chance (e.g., Aghion, Hart, and Moore, 1992; Thorburn, 2000; Baird and Morrison, 2005; Ayotte, 2007; Bernstein, Colonnelli, and Iverson, 2019; and Waldock, 2019). A less studied, but key feature in many bankruptcy regimes, is the role of disqualifying individuals from serving as managers, directors or owners if they have engaged in gross managerial misconduct. Such disqualifications aim at restricting second-chance policies for individuals who engaged in managerial misconduct and lower the incidence of future bankruptcy to reduce misallocation of resources. Despite the importance of disqualifications among policymakers, empirical evidence and its concomitant implications for corporate bankruptcy remain scant.

From a theoretical perspective bankruptcy law has important implications for aspiring entrepreneurs, credits markets that facilitate entrepreneurial activities as well as the public. For entrepreneurs, the bankruptcy law determines their exposure to downside risk by providing wealth protection through limited liability, while simultaneously limiting creditors' exposure to business failures. A major concern is that individuals might misuse the protection of limited liability under bankruptcy laws to engage in irresponsible business conduct or even fraud. The main purpose of managerial disqualifications is to protect creditors and the public from individuals who seek to abuse their position, as a manager, of a limited liability company. Managerial misconduct extends from breaches of statutory duties within the Companies Act legislation, to not paying taxes or VAT, or to at the other end of the spectrum involving fraud or other acts of a criminal nature. Therefore, the aim of the disqualification is to make managers personally liable for misconduct by restricting their future ability to manage a business.

In this study, we evaluate the introduction of managerial disqualifications using administrative register data from Denmark.[1] To identify disqualifications, we rely on three lists published by regional newspapers in 2017. These regional newspapers, owned by the same media holding company, obtained the information from local bankruptcy courts by filing a freedom of information request. Although the bankruptcy quarantine law explicitly specifies that the register is not accessible to the public, the courts decided to comply with the request and provide a year-to-date overview of disqualification decisions by their court. The lists were subsequently published

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[1] For ease of reference, we interchangeably refer to bankruptcy quarantines and managerial disqualifications.

by the newspapers, and cover disqualifications of 69 managers of bankrupt firms who engaged in managerial misconduct during the first three quarters of 2017 in six out of 24 bankruptcy court districts in Denmark. For 58 of these managers, we obtain administrative register data on their business position, income, wealth and criminal records and match them to a control group of comparable bankrupt managers.

Our empirical specification compares individuals identified from these newspapers to a matched control group of managers of bankrupt firms who were not disqualified, operated their business in the same location and went bankrupt at the same time as the firm of the disqualified manager. Specifically, the control group is formed by exact matching on location (court district), time of bankruptcy, age cohort, and total income. This matching criterion mitigates concerns regarding selection on observables while the inclusion of individual fixed effects additionally controls for time-invariant individual characteristics. The main strength of our empirical strategy is that it exploits variation within individuals, while the main caveat is that it cannot rule out concerns related to time-varying individual differences that emanate around managerial disqualifications.

We begin by examining the consequences of bankruptcy quarantines for disqualified individuals. We find that disqualified managers do not return as managers and owners of companies after the expiry of the quarantine. As a result, they have lower incomes both during and after the quarantine. The effects are economically large: during the quarantine income is 32,000 DKK lower, equivalent to a 25 percent relative to the average income two years before the quarantine. Income drops further, relative to the control group, such that the treatment group earns 122,700 DKK less than the control group after expiry of the quarantine. The drop in income during the quarantine is driven by labor income, while only a fraction of the drop in income after the quarantine results from lower labor income. However, the drop in income does not significantly affect their wealth. Further, we examine and find that disqualified managers respond by switching their activities towards family members, especially spouses but not children, to avoid being penalized in the future. Lastly, focusing on the business network of disqualified managers, we do not find that they become more active – if anything they become less active – relative to the business network of the control group.

Next, we study the effect of disqualifications on the managers' future business formation. Disqualification orders do not prevent individuals from founding new companies, allowing them to potentially remain involved in business activities. We find that after bankruptcy, the treatment group is 5.8 percent less likely to form a new company. We note that both during and after

disqualification, the treatment group is less likely to found by 6.0 and 4.9 percentage points, respectively: the economic magnitude is significant given that pre-bankruptcy level of business formation is about 15%. Further tests suggest that family members of disqualified individuals are more likely to register new businesses after the disqualification period expires. This increase in family member business formation is consistent with the possibility of them acting as strawman managers or owners. Therefore, the evidence suggests that disqualifications discourage new business formation by the disqualified individuals themselves, but this effect seems to be mitigated by the increased involvement of family members.

We next examine the effect of disqualifications on the managers' future business misconduct. Given that disqualification orders are imposed when managers use bankruptcy protection to commit misconduct, we expect that disqualified individuals would have a higher likelihood to refile for bankruptcies or commit similar crimes again if not disqualified. We find that after bankruptcy, the treatment group is 19 percentage points less likely to refile for bankruptcy and 7-10 percentage points less likely to commit a crime (depending on type of crimes). Even after disqualification expires, the effect persists, with a reduction of 11 percentage points in refiling, and 9-14 percentage points in crimes (depending on type of crimes) compared to the control group. The effect is statistically and economically significant. For instance, the relative reduction in fraud after quarantine is about 48 percent, when comparing to pre-quarantine levels. These findings suggest that disqualifications effectively reduce recidivism among managers with a higher propensity to commit business misconduct.

Lastly, we study the implications of bankruptcy quarantines for the managerial labor pool. If managerial disqualifications are costly for individuals, then one could expect individuals with criminal intentions to anticipate these costs and avoid having formal managerial responsibilities. We capture variation in individual characteristics that are plausibly related to the exposure to the labor market, by identifying the fraction of foreigners and individuals receiving public (welfare) transfers in the managerial labor pool. The main idea is that these individuals have lower personal costs of being disqualified. Following the introduction of bankruptcy quarantines, we observe an increase in the share of managers who are foreign citizens, those of foreign origin, and those relying on public transfers. The increase is statistically as well as economically significant. The fraction of foreigners increases by 1.3 percentage points relative to an average level of 6.4 percent. These results suggest that the labor pool shifts towards individuals with lower personal costs of being disqualified.

Moreover, if disqualifications discourage gross business neglect, one expects the reform to have significant effects on the composition of the managerial labor pool with respect to managers with past bankruptcy experiences and criminal records. To gauge this effect, we examine whether the fraction of managers with a past bankruptcy and the fraction of managers with a criminal record change after the reform. Following the introduction of bankruptcy quarantines there is a decline in the fraction of managers with a past bankruptcy. Thus, the reform appears to slow the tendency of managers to be involved in bankruptcies. Specifically, we study the fraction of managers with any criminal record, fraction of managers convicted of white-collar crime and the fraction of managers convicted of fraud. For all three measures, we note that the fraction of the labor pool with criminal records increases prior to the reform and tends to decrease after the introduction of the reform. Importantly, the decline in the fraction of managers with a criminal record is not immediate, suggesting that it takes time for the effect to kick in. Interestingly, the timing of the decline seems to coincide with the increase in the number of disqualifications. Collectively, these results suggest that the managerial disqualifications discourage individuals from becoming repeat offenders.

Our first contribution is to the literature on personal costs of bankruptcy. Focusing on top executives several studies report a large decline in CEO income after bankruptcy fillings (Gilson, 1989; Gilson and Vetsuypens, 1993; Eckbo and Thorburn, 2003; Eckbo, Thorburn, and Wang, 2016) and a small decline in CEO income after liquidations (Grindaker, Kostøl, and Roszback, 2022). In comparison to these studies, we document that the personal costs are larger for managers engaging in gross misconduct compared to managers of bankrupt firms that did not engage in misconduct.

Our second contribution is to inform the literature examining the frictions impeding the efficiency of the bankruptcy process. Prior work has focused on the role of asymmetric information, conflicts of interest among creditors, judicial process, and intermediary frictions documenting that these impose large economic costs (Iverson, 2018; Dou et. al. 2021; Antill, 2022, 2024; Iverson et. al., 2023; Antill and Clayton, 2024). Another strand of literature has focused on the role of downside protection in the bankruptcy law. Theoretical studies posit that downside protection fosters overall entrepreneurship (Landier 2005; Ayotte 2007; Jia 2015; Mankart and Rodano 2015). Consistent with this theoretical prediction, empirical evidence shows that downside protection increases entrepreneurship (Fan and White 2003; Armour and Cumming 2008; Cerqueiro et al. 2019; and Kang, 2024), while other studies find no effect of downside protection in personal bankruptcy and entrepreneurship (Akyol and Athreya, 2011; Cumming and Li, 2013; Paik, 2013; and Traczynski, 2019). Relatedly, several studies show that downside protection against

entrepreneurial failure in the labor market can stimulate entrepreneurial activities (Hombert et al. 2020; Koudijs and Salisbury 2020; Ersahin et al. 2021; Gottlieb et al. 2022). In comparison to these studies, we examine whether managerial disqualifications affect the likelihood of starting a new business relative to failed entrepreneurs, who did not get disqualified. To this end, we find that disqualified managers are less likely to start new businesses, less likely to go bankrupt again in the future, and less likely to be convicted of fraud in the future.

Relatedly, our study also contributes to research examining the impact of removing information about past bankruptcy or delinquency on entrepreneurship. These studies document that removing such information has either positive, negative, or no impact on entrepreneurship (Bos et al. 2018; Dobbie et al. 2020; Cahn et al. 2021; Herkenhoff et al. 2021). In comparison to these studies, we show that disqualifications are effective in limiting the business activity of individuals who engaged in misconduct, even if the disqualification is not public knowledge.

Lastly, our results speak to the literature on personal cost of misconduct for managers and directors. Prior literature documents significant personal costs in terms of future employment for managers associated with financial misrepresentation (Karpoff et al, 2008), price fixing (Combe and Monnier, 2011; Connor and Lande, 2012; and González, Schmid, and Yermack, 2019), and tax avoidance (Gallemore, Maydew and Thornock, 2013). Similarly, a large body of evidence suggest that directors are replaced following lawsuits and SEC enforcement action (Romano, 1991; Farber, 2005; Ferris et al., 2007), financial irregularities (Gilson, 1990; Srinivasan, 2005; Fich and Shivdasani, 2007; Ertimur et al., 2012), or departure from value-maximizing decisions (Coles and Hoi, 2003; Harford, 2003; Jiang et al., 2016). In comparison to these studies, we examine the effect of managerial disqualifications due to misconduct in corporate bankruptcies. We find that disqualified managers are less likely to start a business, less likely to go bankrupt in the future, and less likely to be convicted of fraud in the future. We also find evidence of significant personal costs as personal income after the expiry of the disqualification remains low relative to bankrupt managers that were not disqualified.

Finally, our results have implications for policy makers and the working of bankruptcy law. Our findings highlight the importance of balancing the incentive to take risks by providing aspiring entrepreneurs with downside protection (i.e., limited liability) while maintaining personal liability for managerial misconduct. Our findings suggest that managerial disqualification limits individuals' ability to continue their misconduct. Our findings also stress some limitation of disqualifications by providing evidence of strawman appointments of family members, and potential consequences for the managerial labor pool. To this end, we provide the first evidence on the effect of managerial disqualifications for individuals as well as the managerial labor market.

Our study proceeds as follows. Section I details the institutional setting and the changes to the bankruptcy law that introduces disqualifications for managerial misconduct. In Section II, we describe the construction and sources of our data. Section III details our research design and difference-in-differences analysis that compares outcomes for disqualified managers of bankrupt firms to those of comparable managers of bankrupt firms who did not get disqualified. In Section IV we examine the personal costs of managerial disqualifications. We analyze the effect on disqualified individuals' positions as manager, owner, and board members, as well as their personal income during and after the disqualification period. Section IV also provides evidence on possible "straw man" appointments, involving family members or business associates of disqualified managers. In Section V, we study whether disqualified managers start new businesses as well as the likelihood of future bankruptcies and criminal activity. Section VI examines the effect of the introduction of bankruptcy quarantines on the managerial labor pool. We then conclude. An online appendix provides additional evidence and alternative specifications.

I.   Changes to the bankruptcy law and introduction of managerial disqualifications

On January 1, 2014, Denmark implemented a law introducing "bankruptcy quarantines" that disqualify managers of bankrupt firms who engaged in negligent business practices. Examples of negligent business practices range from fraud, failing to pay taxes or VAT, shareholder loans, hiding assets from the bankruptcy court, omitting to file annual reports, or inappropriately using the bankruptcy process to a creditor's detriment.

The maximum disqualification period is three years, during which the individual cannot hold management positions in limited liability companies. Notably, the disqualification does not apply to ownership or directorships in limited liability firms, nor to positions in firms with unlimited liability (i.e. sole proprietorships or partnerships).

Disqualification is ordered by the bankruptcy court based on evidence and findings presented by the court-appointed liquidator (*kurator*) and a response from the manager's lawyer. If a disqualification is imposed, the court notifies the Central Business Register, which deregisters the individual from managerial roles in other limited liability companies.

Article 157 of the Danish Bankruptcy Law specifies that negligent business conduct must be a result of "gross managerial misconduct" to qualify for disqualification. Case law suggests that several violations can stand alone as grounds for disqualification. Examples of these are a) lack of or misleading bookkeeping, b) misuse of company funds, including transfer or loans to

management or shareholders, c) failure to settle taxes or VAT, and d) tax evasion or fraud. Less serious violations typically require multiple occurrences alongside other violations to trigger disqualification.[2] In practice, most disqualifications result from a combination of violations.

A key feature of the reform of the bankruptcy law is that disqualification information is not publicly available. Article 12 of the Law on Bankruptcy Quarantines explicitly prohibits sharing the registry of disqualified managers with third parties, including the public, except in legally mandated situations. This lack of transparency makes it difficult for market participants to identify managers associated with negligent business practices. The lack of transparency probably also implies that our estimates provide a lower bound for the personal costs of disqualifications.

Case evidence suggests that bankruptcy judges have followed the legislative intent, ordering disqualifications in 72% of cases where the liquidator recommends them. In most convictions, the maximum disqualification period of three years is imposed (95% of cases). A small percentage (around 5%) receive a two-year or one-year disqualification.

II. **Data and descriptive statistics**

A. Data

We construct a dataset with 98,738 corporate bankruptcies between 2010 and 2021 in limited liability firms (both publicly and privately held) in Denmark. Our dataset contains information on managers, owners, and board members, as well as personal and family information about them. Individuals are identified by the *Central Personal Registration number* (CPR number), the equivalent of the social security number in the United States, which ensures that we have unique identification across individuals and data sources. The dataset is constructed based on five different sources, as explained below.

We obtain access to data on firms, managers, owners, and boards members from the official records of the Central Business Register (CVR registeret) at the Danish Business Authorities (Erhvervsstyrelsen). Danish corporate law mandates that all firms register with the Business Authorities, who track firm status (active or bankrupt). The law also requires firms to report changes in management, ownership, and board membership within two weeks of occurrence. We use this data to identify bankruptcies and associated managers, owners, and board members.

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[2] Examples of less serious violations are: a) non-payment of the contributed capital, b) non-cooperation in the disclosure of the bankruptcy case and liquidation, c) not pay salary to the employees, d) withholding of pension for the employees, e) continuation of the company's operations beyond what is economically reasonable, and f) introducing a straw man.

Income and wealth data are from the official records at the Danish Tax and Customs Administration (SKAT). This dataset includes personal income and wealth information for the Danish population, linked by CPR number. SKAT receives this information directly from relevant sources, such as financial institutions reporting customer deposits and security investments and employers reporting employee wages. We access income and wealth data from 2010 to 2022 through Statistics Denmark to evaluate the personal costs associated with managerial disqualifications.

Data on criminal offences come from the Danish Central Crime Register (*Det Centrale Kriminalregister*) at the Danish National Police (*Rigspolitiet*). The data contain records of all criminal offences, legal charges, convictions, and fines exceeding DKK 1,500. All records are linked to individuals by CPR number and include details about the nature of crime, police district, and legal outcome. Within the Danish Crime Registers there are several datasets which we exploit in our analysis: Criminal Charges (*Kriminalstatistik*) gives us all individuals charged with a crime, the date of the crime they are being charged with and a 7-digit code which describes the criminal activity. Each record includes a 16-digit journal number assigned by the police district at the time of the charge. This code, along with the CPR number, allows us to link between crime datasets (e.g., charged crimes to convictions) and across datasets (e.g., crimes committed to financial and demographic data). Convictions (*Kriminalstatistik afgørelser*) inform us of the legal decisions of the criminal activity. From this database we also exclude individuals whose charges were subsequently dropped, withdrawn, were acquitted, or received a written warning.

Individual and family data originate from the official Danish Civil Registration System. These records include the personal identification number (CPR), gender, date of birth, CPR numbers of family members (parents, children, and siblings), and their marital histories (number of marriages and divorces). In addition to providing individual characteristics, such as age, gender, and marital status, these data enable us to identify family members of bankrupt managers.

We supplement the administrative register data with information about individuals who were disqualified from being managers by the bankruptcy court. Ideally, we would have access to all disqualifications. However, Danish bankruptcy quarantine law restricts public access to the disqualification registry and prohibits information sharing with third parties except in legally mandated situations. To address this limitation, we rely on three lists of disqualifications published by regional newspapers in 2017. These newspapers, owned by the same media holding company, obtained the information through freedom of information requests submitted to local bankruptcy courts. While the law restricts public access, the courts complied with these requests, providing a

year-to-date overview of disqualification decisions of 69 managers for the first three quarters of 2017 in six out of 24 Danish bankruptcy court districts (see Online Appendix Figure A1 for an example newspaper article and Online Appendix Figure A2 for a map of covered jurisdictions). We note that while these cases are a small subsample of the number of bankruptcies and cases involving disqualifications between 2014 and 2021 as shown in Appendix Figure A3, the timing and geography of our sample is close to random. We further note that our results remain qualitatively unaffected if we benchmark outcomes for disqualified managers to all bankrupt managers in 2017. Finally, more than 90% of the disqualifications are for a period of three years, as shown in Appendix Figure A4, which allows us to simplify the empirical specification.

B. Sample and descriptive statistics

As mentioned in the previous section, the data on managerial disqualifications cover 69 managers of bankrupt firms during the first three quarters of 2017 in six out of 24 court districts. To ensure that our results are not driven by regional differences or macro-economic conditions, we form a matched control group of managers of bankrupt firms who were not disqualified, operated their business in the same location and went bankrupt at the same time as the firm of the disqualified manager. As a result of the matching criteria, the sample of disqualified managers in the current version of our study is reduced to 58.

Specifically, the control group is formed by exact matching on location (court district), time of bankruptcy, and age cohort (±5 years). Among the managers that match these criteria, we select all nearest neighbors based on total income, with distance less than 200,000 DKK, and assign the date of disqualification to managers in control group within each treated-control pair.[3] This matching procedure ensures that the treatment and control groups are comparable.

Table I summarizes the individual characteristics of the treatment and control groups two years prior to the bankruptcy ruling. The treatment group comprises individuals that are managers of a bankrupt company and are subsequently disqualified, while the control group are managers of a bankrupt company who did are not disqualified.

The table shows that the groups are statistically indistinguishable on most characteristics, except for pre-bankruptcy criminal activity (Panel B). Panel A shows that both groups have similar

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[3] Online Appendix B shows that our results remain unaffected, both quantitatively and qualitatively, even when using all managers of bankrupt firms as the alternative control group.

levels of income. They also have negative net wealth, suggesting financial distress at the personal level, while that of the control group is lower. Panel B shows that the treatment group is significantly more likely to have committed a crime before bankruptcy, particularly white-collar crimes and frauds. Such higher criminal propensity reflects the rationale behind disqualification orders, which target managers who engage in misconduct leading to bankruptcy. Panels C and D show that both groups have similar levels of business activities measured by the number of managerial positions held or the likelihood of being a manager or an owner.

III. Empirical strategy

To estimate the personal cost of disqualification for managers, we follow the labor economics literature on earnings losses of displaced workers (Jacobson, LaLonde, and Sullivan, 1993). We estimate Equation (1) for individuals, where the dependent variable is either indicators for business positions (manager, owner, or board member), income, or net wealth (defined as assets minus liabilities) in year 2000 DKK, y_{it}, for manager i in year t:

$$y_{it} = \alpha_i + \beta\, Treated_i * Post_{i,t} + \gamma_t + \epsilon_{it}, \qquad (1)$$

where the parameters α_i represent individual fixed effects, γ_t represent time fixed effects, $Treated_i$ is an indicator for disqualified individuals, $Post_{i,t}$ is an indicator for individuals during and after the disqualification period. The parameter β captures the personal cost of disqualifications, while ϵ_{it} is the error term.

To further explore the short-term and long-term effects of disqualification on individuals, we separate the $Post_{i,t}$ into two periods and estimate Equation (2) as follows:

$$y_{it} = \alpha_i + \beta_1 Treated_i * During_{i,t} + \beta_2 Treated_i * After_{i,t} + \gamma_t + \epsilon_{it}, \qquad (2)$$

$During_{it}$ is an indicator for disqualified individuals during the disqualification period, and $After_{it}$ is an indicator for disqualified individuals after the expiry of the disqualification period. The parameter β_1 captures the short-term effect of disqualification, and β_2 captures the long-term effect after the expiry of disqualification. In all specifications, we interact the fixed effects

with pair identifiers that distinguish specific treated-control manager pairs. This interaction ensures that β_1 and β_2 are estimated within the tightly defined treated-control pairs of individuals. Standard errors are clustered at the individual level.

The matching procedure reduces concerns about selection bias on observable characteristics. The inclusion of individual fixed effects further controls for time-invariant individual characteristics. While our empirical strategy mitigates concerns related to time-invariant characteristics, however, we are unable to rule out concerns related to time-varying individual differences that may arise around managerial disqualifications.

IV. Personal costs of managerial disqualifications

We begin by examining changes to disqualified individuals' involvement in businesses relative to a matched control group of bankrupt managers that are not disqualified. Subsequently, we study the effect on managerial positions, directly affected by the disqualification, as well as positions as owners and directors that are likely (indirectly) affected by the disqualification. Additionally, we also examine the effect of disqualifications on managerial income and net wealth.

A. Effect on disqualified managers.

Figure I shows the fraction of individuals that are managers (top panel) and owners (bottom panel) of a company for the two groups: the treatment group (solid gray line) consisting of individuals that managed a bankrupt company and were disqualified, and the control group (black dotted line) consisting of individuals that managed a bankrupt company but did not get disqualified. The dashed vertical lines at event time 0 and 3 show the individual-specific start and end of the disqualification period, respectively. This divides the event window into three periods: a period *before*, a period *during* and a period *after* the disqualification.

We note that before the disqualification, the fraction of managers and owners in both groups follows a similar pattern, initially increasing and then decreasing. However, the decline is larger for disqualified individuals implying that they are less likely to be a manager or owner of any firm both during and after the expiry of the disqualification. After the disqualification, we note a slight increase in the probability of being a manager for the treatment group. That said, less than 20 percent of disqualified managers manage to stage a comeback.

Table II reports the result from a linear probability model where the dependent variables are indicators for being a manager, owner, or a board member. For each outcome, we first run a specification in Equation (1). We note that after quarantine, the treatment group is 20 percentage points less likely to be owners. The effect is economically as well as statistically significant. We then run the specification in Equation (2) where we separate the *Post x Treated* effect into indicators for during quarantine, and after quarantine to differentiate between the shorter-term direct and longer-term indirect effects of the disqualifications. We note that the disqualified individuals are 11 percent less likely to be a manager after the expiry of the disqualification, and 15 percent less likely to be an owner relative to the tightly matched control group. We also note that there is no effect on directorships as shown in columns 5 and 6 of Table II. Overall, disqualified individuals are less likely to be managers or owners after the expiry of the disqualification period.

Next, to gauge the financial consequences for disqualified individuals, Figure II shows the time-series evolution of average income and net wealth for the treatment and control group separately. The top panel focuses on total personal income which is the sum of labor income, entrepreneurial income, financial income, and other sources of income. The personal income of bankrupt managers is low before the quarantine and increases thereafter. More interestingly, we find that the relative difference between the treatment and control group is small before the disqualification but increases both during and after the disqualification. The bottom panel shows the average net wealth (assets minus liabilities). We note that net wealth is negative before the bankruptcy for both groups, indicating that liabilities exceed assets. As with income, net wealth tends to increase for both groups after the bankruptcy.

More formally, Table III shows results from OLS regressions with income, labor income, net wealth, assets and liabilities as dependent variables. All dependent variables are measured in 1,000 DKK to accommodate negative values. Negative income values may occur for individuals with loss-making businesses, while negative net wealth reflects liabilities exceeding assets. Columns 1 and 2 of Table III show that income is lower for the treatment group during and after disqualifications. These effects are economically significant: income during disqualification is 32,000 DKK lower (25% relative to pre-disqualification income), and it falls further after disqualification, with the treatment group earning 122,700 DKK less than the control group. Columns 3 and 4 show that the drop in income during disqualification is driven by labor income, while only a fraction of the drop in income after disqualification results from lower labor income.

Table III also shows results for net wealth, assets and liabilities. For net wealth, we find no significant difference between the treatment and control group. All coefficients are positive, but

statistically insignificant. Columns 7 to 10 show that both assets and liabilities decline for the treatment group relative to the control group during and after quarantine. The difference is economically as well as statistically significant in after the quarantine. Interestingly, the reduction in assets and liabilities are of similar magnitude, resulting in an effect on net wealth close to zero. In essence, while the balance sheet of disqualified managers shrinks, it does not significantly affect their net wealth.

Overall, these results suggest that disqualified managers do not return as managers and owners of companies after the expiry of the disqualification. As a result, their income falls during and after disqualification, although the drop in income does not significantly affect their wealth. One important caveat with interpreting these results as evidence of significant personal costs associated with disqualification is that individuals might respond by switching their (illegal) activities towards family members or business associates to avoid being penalized in the future. We therefore proceed by examining the effect of disqualifications on outcomes for family members and the business network related to the disqualified individual.

B. *Effect on disqualified managers' family members.*

To examine the effects on family members of the disqualified mangers, we use data from the Danish social security system to construct family trees. Specifically, we identify spouses, children, parents and siblings of the disqualified managers to evaluate whether differential effects emanate from family members associated with individuals in the treatment and control group.

Figure III shows the fraction of family members that are active as managers and owners. We focus on spouses and children, because parents and siblings are rarely active as managers and owners. For spouses, around disqualifications, we observe a large and sudden increase in the fraction that are managers while we see a decline in the fraction that are managers for spouses of matched managers in the control group. The fraction increases from below 1 percent before the quarantine to 7.5 percent during the quarantine. Interestingly, only less than a quarter of the increase disappears in the period after the quarantine, suggesting a longer-term shift in the business formation patterns among spouses of disqualified managers. At the same time, for children of disqualified managers, we only observe a gradual increase in their participation as managers, relative to the children of matched mangers who went bankrupt but were not disqualified.

In contrast, the bottom panel of Figure III shows a smaller increase in the fraction of owners that are spouses. The fraction of owners for spouses of disqualified managers increases from 20

percent to 29 percent at the end and after the expiry of the disqualification. At the same time, we do not see any changes in the fraction of owners among spouses of the control group. For children, we see a gradual decline in the fraction that are owners prior to the disqualification while this fraction rises temporarily above 15 percent during quarantine period and stabilizes to slightly below 15 percent after the expiry of quarantine.

More formally, Table IV presents these results in a regression framework. Consistent with the figures, we find that the spouses of disqualified managers are more likely to be a business owner and a board member. Coefficients are generally positive, statistically significant, and economically meaningful. When we separate the effects, we find that spouses are more likely to be owners both during and after the expiry of the disqualification period while they are only more likely to be board members during the quarantine period. Further, we also do not find a significant difference in the propensity to be a manager between the treatment and control group spouses. Notably, we do not find any such patterns among children of the disqualified managers relative to the children of individuals in the control group.

Overall, these results suggest that disqualified managers respond by switching their activities towards family members, especially spouses but not children, to avoid being penalized in the future.

C. *Effect on disqualified managers' business network.*

Lastly, to gauge the effect of disqualifications on the managers' business network, we identify individuals that have served as managers, owners, or board members at the same firm as the disqualified manager. We then follow the business networks' positions as managers and owners to understand whether they become more active when managers in their network are disqualified. Figure IV shows the result of this exercise. Before bankruptcy quarantines, we observe that the individuals in the business network of disqualified managers have an increasing tendency to be managers of firms: One year before the quarantine more than half of the business network is active as managers. However, after quarantine, the fraction declines for both groups, albeit by more for the network of treatment than for the network of control groups. For ownership, we observe an increasing fraction of owners among bankrupt managers that are not disqualified, while there is no increase for the business network of disqualified managers. Thus, there appears to be no support for the concern that the business network becomes more active when one of the individuals in the network is disqualified from being a manager.

Table V presents the result for a formal test of whether the business network of quarantined individuals become more active during and after the quarantine. We note that the business network generally becomes less active during the quarantine compared to the business network of the control group. The fraction of the business network that are managers and board members decline by 8 and 7 percent, respectively. Both differences are statistically significant at the 10 percent level. After the quarantine, we find that the business network is 10 percent less likely to serve as board members. Collectively these results suggest that the business network of disqualified managers does not become more active – if anything they become less active – relative to the business network of the control group.

V.   New business formation and business activities

A. New business formation

We examine the effect of disqualifications on the managers' future business formation. Disqualification orders do not prevent individuals from founding new companies, allowing them to potentially remain involved in business activities. Figure V shows the fraction of managers founding new limited liability companies. The figure shows similar pre-bankruptcy business formation rates for both groups (four years preceding the bankruptcy). However, after bankruptcy, business formation drops more significantly for the treatment group. Notably, no manager in the treatment group forms a new company two years after the disqualification period begins. This decline aligns with Table II, which shows a lower likelihood of company ownership among disqualified individuals despite legal permission to own companies.

We test this descriptive result more formally in a regression. Table VI reports the result from a linear probability model where the dependent variable is an indicator for founding a new limited liability company. We find that after bankruptcy, the treatment group is 5.8 percent less likely to form a new company. We note that both during and after disqualification, the treatment group is less likely to found by 6.0 and 4.9 percentage points, respectively: the economic magnitude is significant given that pre-bankruptcy level of business formation is about 15%. However, Appendix Figure A5 and Table A1 suggest that family members of disqualified individuals become more likely to form new businesses after the disqualification period expires. This increase in family member business formation is consistent with the possibility of them acting as strawman managers or owners, as indicated in Table IV. The combined evidence suggests that disqualifications

discourage new business formation by the disqualified individuals themselves, but this effect might be mitigated by the involvement of family members.

B. *Future bankruptcies and criminal activities*

We next examine the effect of disqualifications on the managers' future business misconduct. Given that disqualification orders are imposed when managers use bankruptcy protection to commit misconduct, we expect that disqualified individuals would have a higher likelihood to refile for bankruptcies or commit similar crimes again if not disqualified.

Figure VI shows the fraction of managers filing for bankruptcy (top panel) and committing a fraud (bottom panel). In the top panel, we see that the treatment group has a higher fraction of managers who file for bankruptcy than the control group when combining 5 years preceding the bankruptcy (event years -4 and 0). This difference suggests a higher tendency for multiple bankruptcies by the year of quarantine. However, after a disqualification, the filing rate drops significantly and remains below pre-quarantine levels. This reduced likelihood aligns with the results from Table II, where disqualified individuals are less likely to return to managerial roles. Similarly, the bottom panel shows a substantially higher pre-quarantine fraud rate for the treatment group. Following disqualification, the fraud rate drops and converges with the control group.

We test this descriptive result more formally in a regression. Table VII reports the result from a linear probability model where the dependent variables are indicators for filing for bankruptcy and committing a crime (whether any crime, a white-collar crime, or a fraud). We find that after bankruptcy, the treatment group is 19 percent less likely to refile for bankruptcy and 7-10 percent less likely to commit a crime (depending on type of crimes). Even after disqualification expires, the effect persists, with a reduction of 11 percent in refiling, and 9-14 percent in crimes (depending on type of crimes) compared to the control group. The effect is statistically and economically significant. For instance, the relative reduction in fraud after quarantine is about 48 percent, when comparing to pre-quarantine levels. These findings suggest that disqualifications effectively reduce recidivism among managers with a higher propensity to commit business misconduct.

VI.   Effects on the managerial labor pool

If managerial disqualifications are costly for individuals, then one could expect individuals with criminal intentions to anticipate these costs and avoid having formal managerial responsibilities. Thus, one potential response to the introduction of disqualification is to appoint "straw men" i.e. managers or owners who are being controlled by the actual owner or controller of the company. In this section, we formally test whether that are changes to managerial labor pool that are suggestive of "straw men" appointments.

One obvious way of evading the consequences of managerial disqualification is to appoint individuals for whom the cost of being disqualified from managing a business in Denmark is negligible. If the cost of disqualifications is related to the labor market as shown in Figure II and Table III, then the personal cost of disqualifications is lower for individuals that are less exposed to the labor market in Denmark. We capture variation in individual characteristics that are plausibly related to the exposure to the labor market, by identifying the fraction of foreigners and individuals receiving public (welfare) transfers in the managerial labor pool. The main idea is foreigners and individuals on public transfers are less reliant on labor market outcomes in Denmark, and therefore have lower personal costs of being disqualified. Thus, to measure the effect of bankruptcy quarantines, we examine whether the managerial labor pool experience a shift towards foreigners and individuals receiving public welfare. The top panel in Figure VII show the fraction of non-Danish citizens and individuals of non-Danish origin. For both measures me observe a modest increase year on year from 2009 to 2013, followed by a larger increase year on year after the introduction of bankruptcy quarantines. Thus, the growth in the fraction of foreigners in the managerial labor pool seems to accelerate after the reform. The bottom panel shows that the fraction of managers receiving public transfers declined from 5 to 4 percent before the reform, while it increased to between 5 and 6 percent after the introduction of the bankruptcy quarantines. Thus, the managerial labor pool seems to shift towards individuals for whom the cost of disqualifications might be lower.

Table VIII presents results from a regression of managerial characteristics in the labor pool from a specification with regional fixed effects and industry fixed effects. The dependent variables are indicators taking the value one for foreign citizens, immigrants or individuals receiving public transfers. The variable of interest is the post-reform indicator which tests how the labor pool changes after the introduction of bankruptcy quarantines. Across the six specifications, we note significant changes to the managerial labor pool. The fraction of managers that are foreign citizens increase, the fraction of managers of foreign origin, and the fraction of managers receiving public

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transfers increase. The increase is statistically as well as economically significant. The fraction foreigners increase by 1.3 percentage points relative to an average level of 6.4 percent in Column 2. The fraction of immigrants increases by 2.7 percentage points relative to an average level of 6.6 percent, and the fraction of managers receiving public transfers increase by 0.6 percentage point relative to an average level of 4.6 percent. Thus, overall results in Table VIII suggest that the labor pool shifts towards individuals with lower personal costs of being disqualified.

If disqualifications discourage gross business neglect, one would expect the reform to have significant effects on the composition of the managerial labor pool with respect to managers with past bankruptcy experiences and criminal records. Evidence from Section IV and V suggests that disqualified individuals are less likely to be managers or owners after the disqualification, less likely to go bankrupt in the future, and less likely to be involved in criminal activities. If the reform is effective in targeting individuals that commit gross business negligence, one would also expect a positive long-term effect on the managerial labor pool. To gauge this effect, we examine whether the fraction of managers with a past bankruptcy and the fraction of managers with a criminal record changes after the reform. Figure VIII plots the fraction of managers with a bankruptcy in the past five years (top panel), and the fraction of managers with a criminal conviction in the past five years (bottom panel). For both panels, we note interesting changes. Before 2014, the top panel of Figure VIII shows a strong positive time trend in the fraction of managers with a past bankruptcy. The fraction increases from 4 percent in 2009 to 7 percent in 2013. Following the introduction of bankruptcy quarantines there is a decline in the fraction of managers with a past bankruptcy. Thus, the reform seems to slow the tendency of managers to be involved in bankruptcies. The bottom panel of Figure VIII shows a similar effect for the fraction of managers with a criminal record. We report the fraction of managers with any criminal record, fraction of managers convicted of white-collar crime and the fraction of managers convicted of fraud. For all three measures we note that the fraction of the labor pool with criminal records increases prior to the reform, and tends to decrease after the introduction of the reform. Importantly, the decline in the fraction of managers with a criminal record is not immediate, suggesting that it takes time for the effect to kick in. Interestingly, the timing of the decline seems to coincide with the increase in the number of disqualifications as shown in Figure VIII.

VII. Concluding remarks

Bankruptcy law attempts to strike a balance between providing downside protection for failing entrepreneurs, while limiting the losses for creditors and the public. A major, but

understudied, concern with the provision of downside protection is if individuals use the protection of limited liability and bankruptcy law to commit irresponsible business conduct or outright fraud.

In this study we use evidence from the introduction of managerial disqualifications in Denmark to provide evidence on the working of disqualifications for managerial misconduct in corporate bankruptcy. We find that individuals that are disqualified are less likely to be managers and owners of firms with limited liability – even after the expiry of the disqualification. The lower level of involvement in businesses manifests itself in a lower likelihood of founding a business, a lower likelihood of future bankruptcies and a lower likelihood of future criminal activities. Collectively, these results suggest that the managerial disqualifications discourage individuals from becoming repeat offenders.

Our results also speak to possible side effects of managerial disqualifications. We find that family members, spouses and children, of disqualified individuals become more active as managers and owners during and after the disqualification period. This tokenism might be indicative of straw men appointments by which disqualified individuals attempt to evade the consequences of managerial misconduct. In spirit of straw men appointments, we find that an increasing number of managers with low personal costs of disqualifications enter the managerial labor pool. In particular, we find an increased number of foreign managers and managers that receive public welfare after the introduction of the reform.

Overall, out study provides the first empirical study of the workings of managerial disqualifications, providing evidence of interest to market participants and policy makers. To this end, our results highlight that disqualifications on one side might discourage repeat offenders, our results also suggest that criminal syndicates might appoint straw men to avoid being personally exposed to the personal costs of disqualifications.

References

Agrawal, Ashwini, Juanita González-Uribe, and Jimmy Martínez-Correa. 2022. Measuring the ex-ante incentive effects of creditor control rights during bankruptcy reorganization". Journal of Financial Economics, 381–408.

Antill, S., 2022. Do the right firms survive bankruptcy?. Journal of Financial Economics, 144(2), pp.523-546.

Antill, S., 2024. Are bankruptcy professional fees excessively high?. Working Paper.

Antill, S. and Clayton, C., 2024. Crisis interventions in corporate insolvency. *Journal of Finance,* Forthcoming.

Andersen, Steffen and Kasper Meisner Nielsen. 2012. Ability or finances as constraints on Entrepreneurship? Evidence from survival rates in a natural experiment". The Review of Financial Studies, 3684–3710.

Armour, John and Douglas Cumming. 2008. Bankruptcy law and Entrepreneurship. American Law and Economics Review, 303–350.

Ayotte, Kenneth. 2007. Bankruptcy and entrepreneurship: The value of a fresh start. The Journal of Law, Economics, and Organization, 161–185.

Baird, Douglas G., and Edward R. Morrison, 2005, Serial Entrepreneurs and Small Business Bankruptcies, *Columbia Law Review* 105, 2310–2368.

Bang-Pedersen, Ulrik Rammeskow. 2018. Danish insolvency law: Recent developments and international aspects. Insolvency and Restructuring in Germany. Ed. by Annerose Tashiro. Schultze & Braun, 12–19.

Bellon, Aymeric, J Anthony Cookson, Erik P Gilje, and Rawley Z Heimer. 2021. Personal wealth, self-employment, and business ownership. The Review of Financial Studies, 3935–3975. 37

Berger, Allen N., Geraldo Cerqueiro, and María F. Penas. 2011. Does debtor protection really protect debtors? Evidence from the small business credit market". Journal of Banking & Finance, 1843–1857.

Bermejo, Vicente J., Miguel A. Ferreira, Daniel Wolfenzon, and Rafael Zambrana. 2022. Do cash windfalls affect entrepreneurship? Evidence from the Spanish Christmas lottery. Working Paper. Nova SBE.

Bernstein, Shai, Emanuele Colonnelli, and Benjamin Iverson, 2019, Asset Allocation in Bankruptcy, *The Journal of Finance* 74, 5–53.

Bernstein, Shai, Emanuele Colonnelli, Mitchell Hoffman, and Benjamin Iverson. 2023. Life after death: A field experiment with small businesses on information frictions, stigma, and bankruptcy. Working Paper. National Bureau of Economic Research.

Cahn, Christophe, Mattia Girotti, and Augustin Landier. 2021. Entrepreneurship and information on past failures: A natural experiment. Journal of Financial Economics, 102–121.

Celentani, Marco, Miguel Garcia-Posada, and Fernando Gómez Pomar. 2022. Fresh start policies and small business activity: evidence from a natural experiment. Working Paper. Banco de España.

Cerqueiro, Geraldo and María Fabiana Penas. 2017. How does personal bankruptcy law affect startups? The Review of Financial Studies, 2523–2554.

Cerqueiro, Geraldo, María Fabiana Penas, and Robert Seamans. 2019. Debtor protection and business dynamism. The Journal of Law and Economics, 521–549.

Cesarini, David, Erik Lindqvist, Matthew J. Notowidigdo, and Robert Östling. 2017. The effect of wealth on individual and household labor supply: Evidence from Swedish lotteries". American Economic Review, 3917–3946.

Cespedes, Jacelly, Xing Huang, and Carlos Parra (2021). More money, more options? The effect of cash windfalls on entrepreneurial activities in small businesses. Working Paper.

Cespedes, Jacelly, Richard T. Thakor, and Keer Yang. 2022. The ex-ante effect of bankruptcy law: Evidence from Chapter 12. Working Paper.

Coles, Jeffery L and Chun Keung Hoi, 2003. New evidence on the market for directors: board membership and Pennsylvania Senate Bill1310. Journal of Finance 58, 197-230.

Combe Emmanuel and Constance Monnier. 2011. Fines against hard-core cartels in Europe: The myth of over-enforcement. *Antitrust Bulletin* 56, 235–276.

Connor, John M., and Robert H. Lande. 2012. Cartels as rational business strategy: Crime pays. *Cardozo Law Rev*iew 34, 427–490.

Dobbie, Will, Paul Goldsmith-Pinkham, Neale Mahoney, and Jae Song. 2020. Bad credit, no problem? Credit and labor market consequences of bad credit reports. The Journal of Finance, 2377–2419.

Dou, W.W., Taylor, L.A., Wang, W. and Wang, W., 2021. Dissecting bankruptcy frictions. Journal of Financial Economics, 142(3), pp.975-1000.

Eckbo, B. Espen, and Karin S. Thorburn. 2003. Control benefits and CEO discipline in automatic bankruptcy auctions. *Journal of Financial Economics* 69, 227-258.

Eckbo, B. Espen, Karin S. Thorburn, and Wei Wang. 2016. How costly is corporate bankruptcy for top executives? *Journal of Financial Economics* 121, 210-229.

Ersahin, Nuri, Rustom M Irani, and Katherine Waldock. 2021. Can strong creditors inhibit entrepreneurial activity? The Review of Financial Studies, 1661–1.

Ertimur, Yonca, and Fabrizio Ferri and David Maber. 2012. Reputation penalties for poor monitoring of executive pay: evidence from option backdating. *Journal Financial Economics* 104, 118-144.

Farber, David B. 2005. Restoring trust after fraud: does corporate governance matter? The Accounting Review 80, 539-561.

Ferris, Stephen P., Tomas Jandik, Robert M. Lawless, and Anil Makhija. 2007. Derivative lawsuits as a corporate governance mechanism: empirical evidence on board changes surrounding filings Journal Financial and Quantitative Analysis 42, 143-165.

Fich, Eliezer M. and Anil Shivdasani, 2007. Financial fraud, director reputation, and shareholder wealth. Journal of Financial Economics 86, 306-336.

Fonseca, Julia and Jialan Wang. 2023. How much do small businesses rely on personal credit? Working Paper.

Fossen, Frank M. (2014). "Personal Bankruptcy Law, Wealth, and Entrepreneurship—Evidence from the Introduction of a "Fresh Start" Policy". American Law and Economics Review, 269–312.

Gallemore, John, Edward L. Maydew and Jacob R. Thornock, 2013. The reputational costs of tax avoidance. *Contemporary Accounting Research* 31, 1103-1133.

Gilson, Stuart C. 1989. Management turnover and financial distress. *Journal of Financial Economics* 25, 241–262.

Gilson, Stuart C., and Michael R. Vetsuypens. 1993. CEO compensation in financially distressed firms: An empirical analysis. *Journal of Finance* 48, 425–458.

González, Tanja A., Markus Schmid, and David Yermack. 2019. Does price fixing benefit corporate managers? *Management Science* 65 (10), 4813-4840

Grindaker, Morten, Andreas R. Kostøl, and Kasper Roszback. 2022. Executive labor market frictions, corporate bankruptcy and CEO careers. Working paper.

Gropp, Reint, John Karl Scholz, and Michelle J. White. 1997. Personal bankruptcy and credit supply and demand. The Quarterly Journal of Economics, 217–251.

Gross, Tal, Raymond Kluender, Feng Liu, Matthew J. Notowidigdo, and Jialan Wang. 2021. The economic consequences of bankruptcy reform. American Economic Review, 2309–2341.

Jacobson, Louis S., Robert J. LaLonde, and Daniel G. Sullivan. 1993. Earnings losses of displaced workers. *American Economic Review* 83, 685–709.

Harford, Jarrad. 2003. Takeover bids and target directors' incentives: The impact of a bid on directors' wealth and board seats. *Journal of Financial Economics* 69, 51-83.

Holtz-Eakin, Douglas, David Joulfaian, and Harvey S. Rosen. 1994. Sticking it out: Entrepreneurial survival and liquidity constraints". Journal of Political Economy, 53–75.

Hvide, Hans K. and Jarle Møen. 2010. Lean and hungry or fat and content? Entrepreneurs' wealth and start-up performance. Management Science, 1242–1258.

Iverson, B., 2018. Get in line: Chapter 11 restructuring in crowded bankruptcy courts. *Management Science*, 64(11), pp.5370-5394.

Iverson, B., Madsen, J., Wang, W. and Xu, Q., 2023. Financial costs of judicial inexperience: Evidence from corporate bankruptcies. *Journal of Financial and Quantitative Analysis*, *58*(3), pp.1111-1143.

Jensen, Thais Laerkholm, Søren Leth-Petersen, and Ramana Nanda. 2022. Financing constraints, home equity and selection into entrepreneurship. Journal of Financial Economics, 318–337.

Jiang, Wei, Hualin Wan and Shan Zao. 2016. Reputation concerns of independent directors: evidence from individual director voting. Review of Financial Studies 29, 655-696.

Kang, Donghyun. 2024. Wealth Protection in Bankruptcy and Serial Entrepreneurship. Working paper.

Karpoff, Jonathan M., D. Scott Lee, and Gerald S. Martin. 2008. The consequences to managers for financial misrepresentation. *Journal of Financial Economics* 88, 193-215.

La Porta, Rafael, Florencio Lopez-De-Silanes, Andrei Shleifer, and Robert W. Vishny, 1997, Legal Determinants of External Finance, *The Journal of Finance* 52, 1131–1150.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1998, Law and Finance, *Journal of Political Economy* 106, 1113–1155.Lafontaine, Francine and Kathryn Shaw. 2016. Serial entrepreneurship: Learning by doing? Journal of Labor Economics (S2), S217–S254.

Landier, Augustin. 2005. Entrepreneurship and the stigma of failure. Working Paper.

Levine, Ross, 1998, The Legal Environment, Banks, and Long-Run Economic Growth, *Journal of Money, Credit and Banking* 30, 596–613.

Levine, Ross, 1999, Law, Finance, and Economic Growth, *Journal of Financial Intermediation* 8, 8–35.

Levine, Ross, Norman Loayza, and Thorsten Beck, 2000, Financial intermediation and growth: Causality and causes, *Journal of Monetary Economics* 46, 31–77.

Lindh, Thomas and Henry Ohlsson. 1996. Self-employment and windfall gains: Evidence from the Swedish lottery. The Economic Journal, 1515–1526.

Petersen, Lars Lindencrone and Anders Ørgaard. 2022. Konkursloven med kommentarer. 15. udgave. Karnov Group.

Romano, Roberta. 1991. The shareholder suit: litigation without foundation? *Journal of Law, Economics and Organization* 7, 55-87.

Schmalz, Martin C., David A. Sraer, and David Thesmar. 2017. Housing collateral and entrepreneurship. The Journal of Finance, 99–132.

Schoenherr, David and Jan Starmans. 2022. When should bankruptcy law be creditor- or debtor-friendly? Theory and evidence". The Journal of Finance, 2669–2717.

Srinivasan, Suraj. 2005. Consequences of financial reporting failure for outside directors: Evidence from accounting restatements and audit committee members. *Journal of Accounting Research* 43, 291-334.

Thorburn, Karin S, 2000, Bankruptcy auctions: costs, debt recovery, and firm survival, *Journal of Financial Economics*, 32.

Waldock, Katherine, 2020, A Typology of U.S. Corporate Bankruptcy, Working paper.

Figure I. Positions as managers and owners around disqualifications

This figure shows the fraction of individuals that are active managers or owners in a window from five years before to five years after going bankrupt. The top (bottom) figure show on whether individuals are managers (owners) in limited liability companies. The dashed line shows the fraction that are managers for individuals that are disqualified from being a manager for up to 3 years. The solid gray line shows the fraction that are active among individuals that are not disqualified from being a manager.
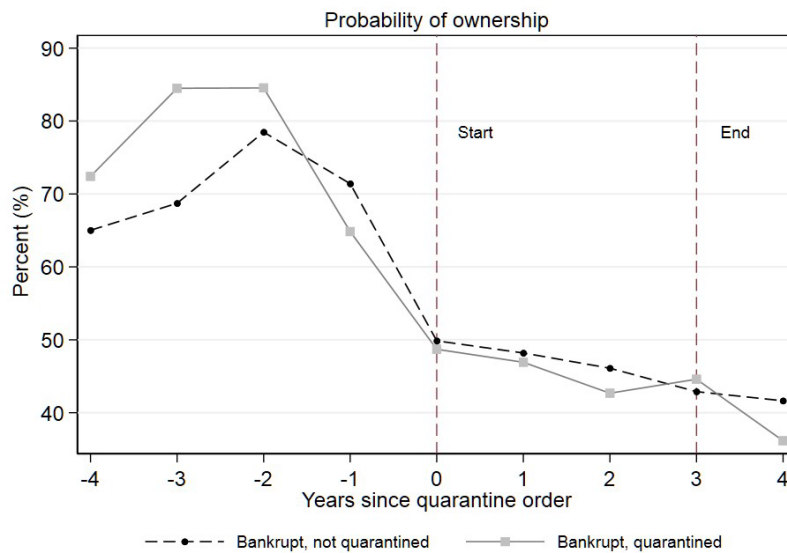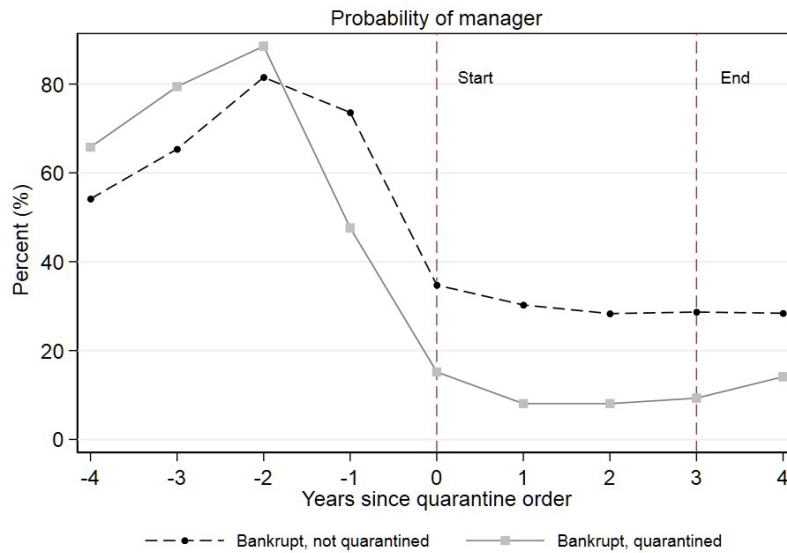
Figure II. Personal income and wealth around disqualifications

This figure shows average personal income in a window from five years before to five years after going bankrupt. In the top (bottom) panel, the figure reports average income (net wealth) for bankrupt managers. The dashed line shows the average for individuals that are disqualified from being a manager for up to 3 years. The solid gray line shows the average for individuals that are not disqualified from being a manager. All amounts are in year 2000 1,000 DKK. One euro equals 7.45 DKK.
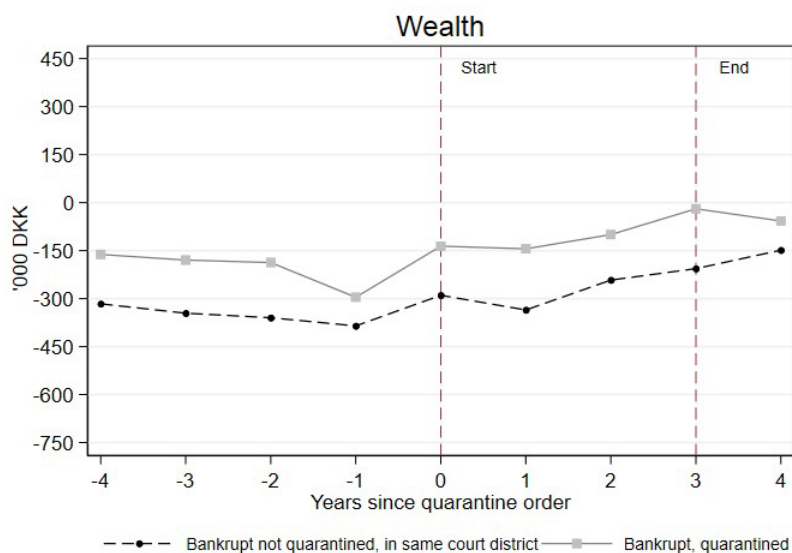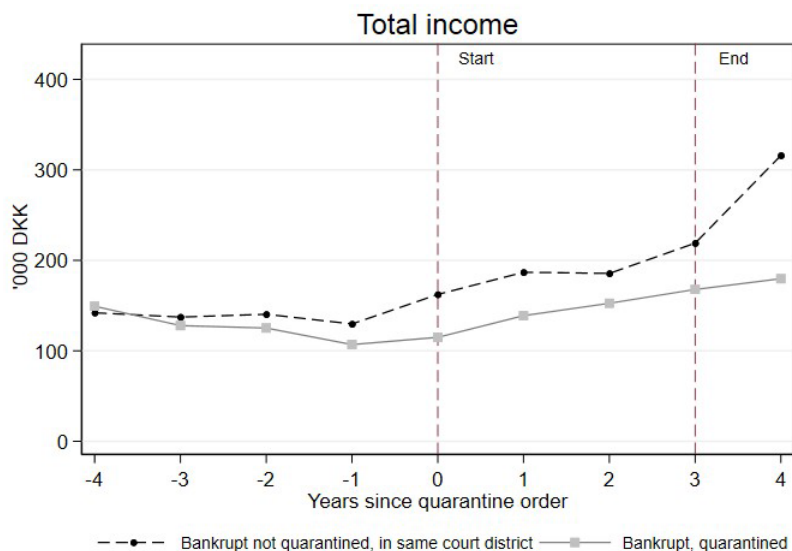
Figure III. Family members' position as managers and owners around disqualifications

This figure shows whether family members of individuals involved in bankruptcies are active as managers or owners in a window from five years before to five years after going bankrupt. The top (bottom) panels show the fraction of managers (owners) for spouses and children of the individuals involved in the bankruptcy. The dashed line shows the average for spouses and children of individuals that are disqualified from being a manager for up to 3 years. The solid gray line shows the average for spouses and children of individuals that are not disqualified from being a manager.

Position as manager

Spouse   Children

Position as owner

Spouse   Children

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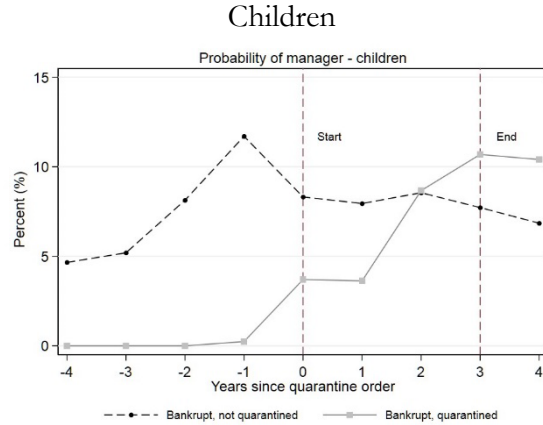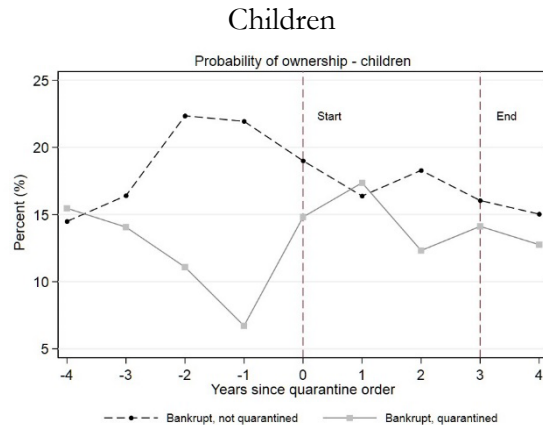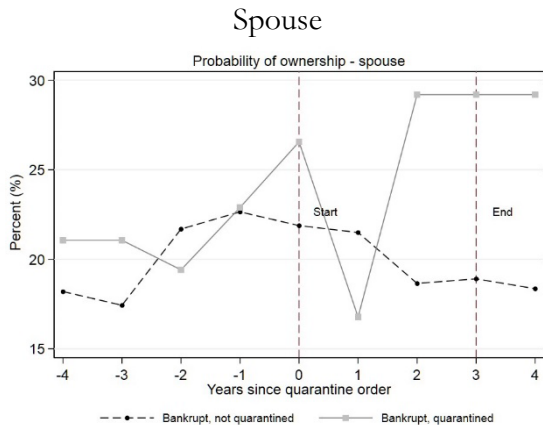
Figure IV. Business networks' positions as manager and owner around disqualifications

This figure shows whether business networks of individuals involved in bankruptcies are active as managers in a window from five years before to five years after going bankrupt. Business networks are defined as individuals that overlapped with the individuals involved in the bankruptcy either as founders, managers, owners, or board members of the same firm. The top (bottom) panel shows the fraction of managers (owners) for the business network of individuals involved in the bankruptcy. The dashed line shows the average for the business network of individuals that are disqualified from being a manager for up to 3 years. The solid gray line shows the average for the business network of individuals that are not disqualified from being a manager.
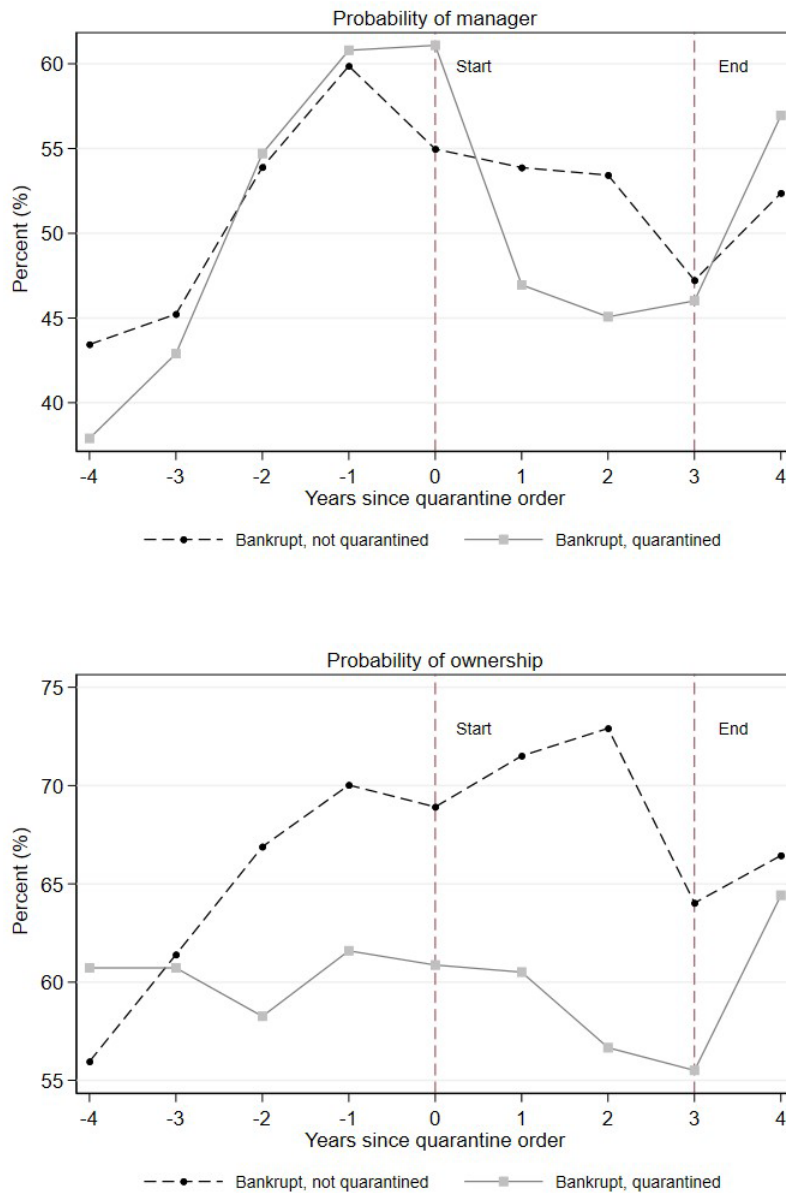
Figure V. New business formation around disqualifications

This figure shows the likelihood of founding a new limited liability company in a window from five years before to five years after going bankrupt. The dashed line shows the average for individuals that are disqualified from being a manager for up to 3 years. The solid gray line shows the average for individuals that are not disqualified from being a manager.
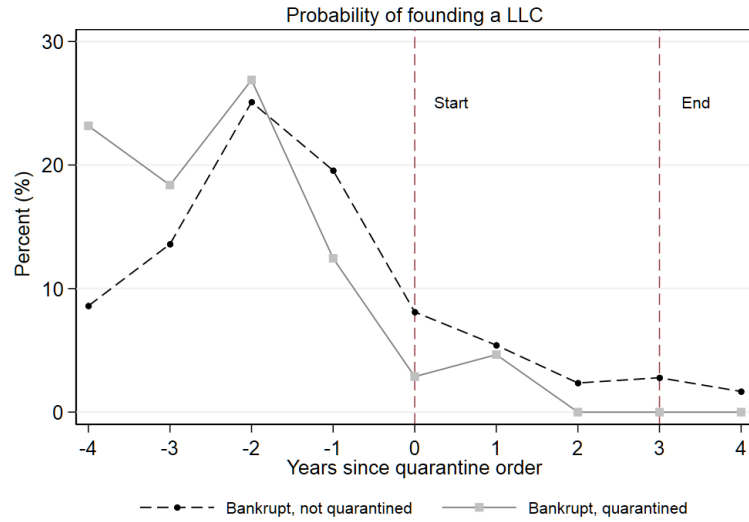
Figure VI. Bankruptcy filings and criminal activity around disqualifications

This figure shows the incidence of bankruptcy filings (top panel) and criminal convictions (bottom panel) in a window from five year before to five years after bankruptcy. The dashed line shows the fraction for individuals that are disqualified from being a manager for up to 3 years. The solid gray line shows the fraction for individuals that are not disqualified from being a manager.
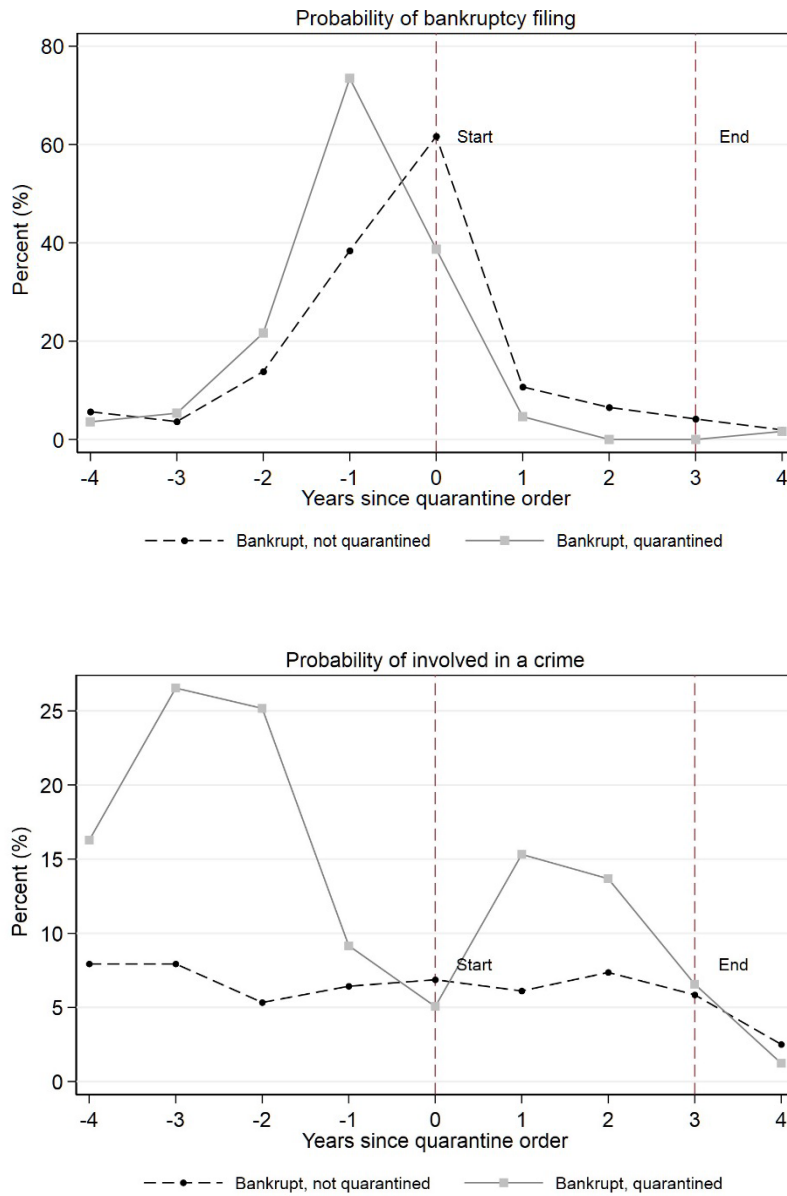
Figure VII. Effect on the managerial labor pool

This figure reports the fraction of the managerial labor pool that are plausible strawmen appointments. The top panel reports the fraction of active managers of limited liability companies that are foreigners (i.e. non-Danish citizen, non-Danish origin or not fully tax liable). The bottom panel reports the fraction of active managers that are living off public transfers (i.e. social welfare). The introduction of managerial disqualifications in 2014 is marked by the dotted line.

Foreigners in the managerial labor pool

Receiving public transfers
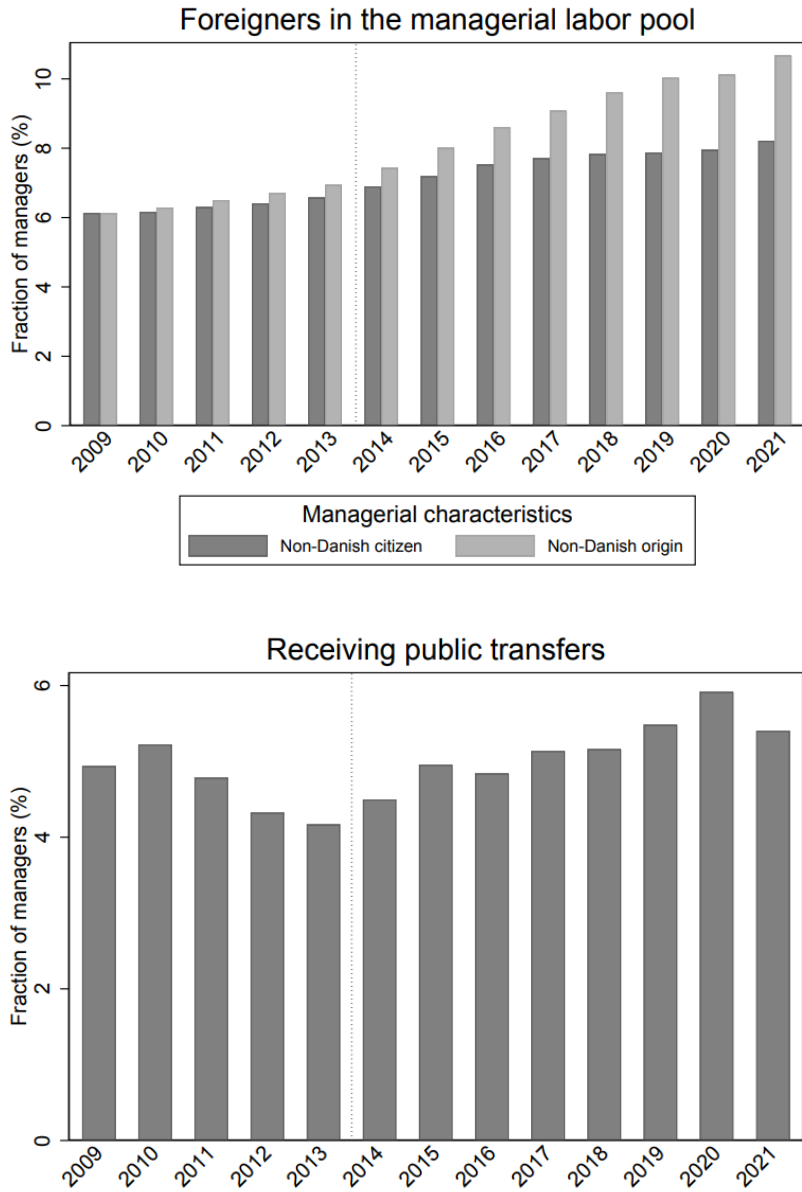
Figure VIII. Effect on the managerial labor pool

This figure reports the fraction of the managerial labor pool that have a bankruptcy filing or a criminal conviction. The top panel reports the fraction of active managers of that have filed for bankruptcy in the pr 5 years. The bottom panel reports the fraction of active managers have a criminal conviction in the prior 5 years. The introduction of managerial disqualifications in 2014 is marked by the dotted line.

Bankrupt in past 5 years

Criminals in the managerial labor pool
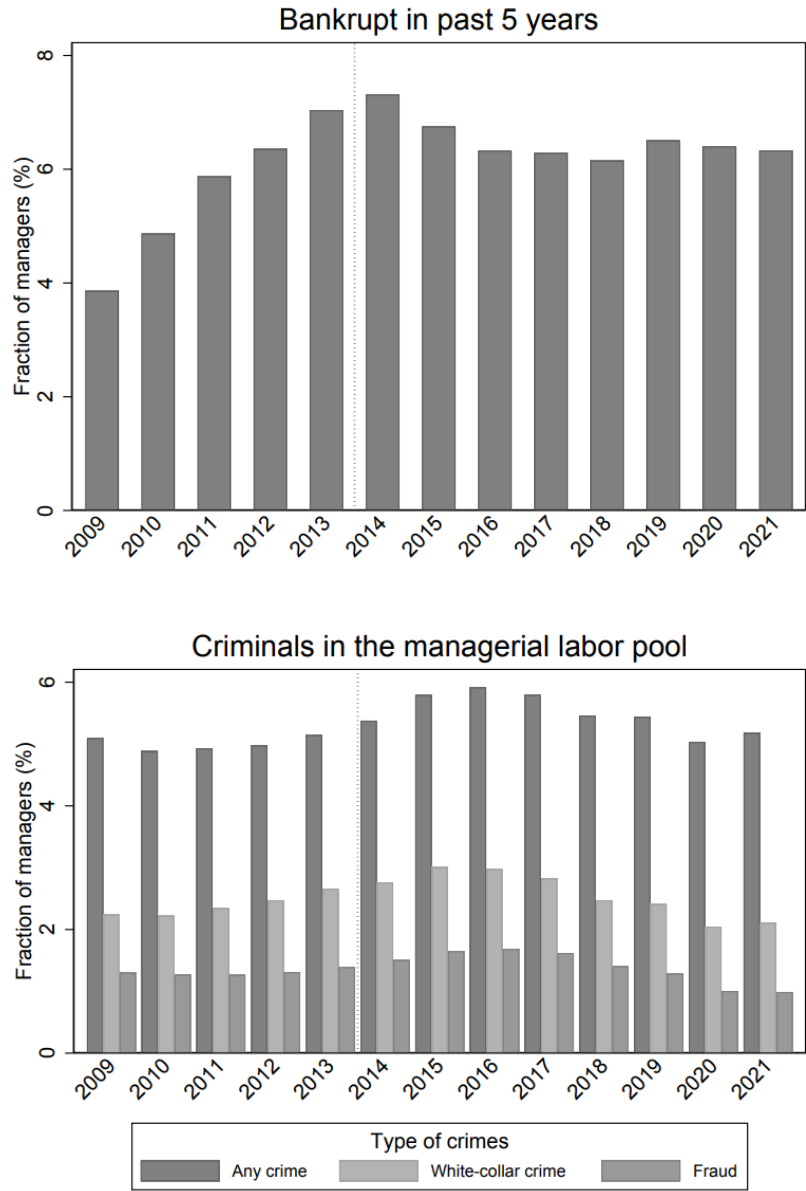
Table I. Descriptive statistics

This table summarizes the observable characteristics of the treatment and control groups two years prior to the bankruptcy ruling. Panel A presents personal income and wealth, Panel B details past criminal activities, Panel C shows the number of managerial positions held, and Panel D reports active management and ownership positions. All amounts are in year 2000 1,000 DKK (1 euro equals 7.45 DKK). For every variable, we compute the difference in average characteristics between the treatment and control groups and test whether this difference is statistically different from zero. Standard deviations are in parentheses, and *t*-statistics are in brackets. ***, **, and * denote significance at the one, five and ten percent level.

	Bankrupt and disqualified (1)		Bankrupt but not disqualified (2)		Difference (1)-(2)	
A. Income and wealth (1,000 DKK)						
Total income	128.2	(168.9)	134.3	(119.8)	6.2	[0.3]
Labor income	141.8	(120.8)	136.4	(125.9)	-5.4	[-0.3]
Net wealth	-152.9	(620.4)	-396.2	(2,257.4)	-243.2	[-0.8]
Assets	779.6	(1,194.3)	575.6	(1,354.5)	-203.9	[-1.1]
Liabilities	932.5	(943.4)	971.8	(2,609.8)	39.3	[0.1]
B. Crimes within past 5 years (%)						
Any crime	37.9	(48.9)	22.6	(41.9)	-15.4*	[-2.6]
White-collar crime	22.4	(42.1)	11.2	(31.5)	-11.2*	[-2.4]
Fraud	19.0	(39.5)	7.0	(25.6)	-11.9**	[-3.1]
C. Number of managerial positions						
In limited liability companies	1.5	(1.2)	1.5	(1.7)	0	[0.1]
In unlimited liability companies	0.4	(0.5)	0.4	(0.5)	0	[-0.5]
D. Management, ownership, and board membership (%)						
Manager in limited liability companies	87.9	(32.9)	78.9	(40.9)	-9	[-1.6]
Owner-manager in unlimited liability companies	39.7	(49.3)	33.3	(47.2)	-6.4	[-1.0]
Owner in limited liability companies	65.5	(47.9)	63.3	(48.2)	-2.2	[-0.3]
Board membership in limited liability companies	5.2	(22.3)	12.4	(33.0)	7.2	[1.6]
Observations	58		412			

Table II. Effect of disqualifications on position as manager, owners and board member

This table reports the estimated effect of managerial disqualifications on the likelihood of being a manager, an owner or a board member. The dependent variables are indicators for being a manager, an owner, or a board member, respectively. *Treated* is an indicator for being a disqualified manager. *Post* is an indicator for years after an individual is disqualified from being a manager. *During* and *After* are indicators equal to one during the managerial disqualification and after managerial disqualification, respectively. The specification includes individual fixed effects and year fixed effects. The unit of observation is individual year. ***, **, and * denote significance at the one, five and ten percent level.

Dependent variable	Manager		Owner		Board member	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated x Post	-0.07		-0.20***		0.02	
	(0.07)		(0.05)		(0.02)	
Treated x During		-0.06		-0.21***		0.02
		(0.08)		(0.06)		(0.02)
Treated x After		-0.11*		-0.15**		0.03
		(0.06)		(0.06)		(0.02)
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.78	0.78	0.78	0.78	0.77	0.77
N	13,054	13,054	13,054	13,054	13,054	13,054

Table III. Personal costs of managerial disqualifications

This table estimates the personal costs of managerial disqualifications. In Columns 1 and 2 the dependent variable is total income. In Column 3 and 4 the dependent variable is labor income. In Column 5 the dependent variables are net wealth (assets – liabilities), while it is assets in Columns 7 and 8, and liabilities in Columns 9 and 10, respectively. *Treated* is an indicator for being a disqualified manager. *Post* is an indicator for years after an individual is disqualified from being a manager. *During* and *After* are indicators equal to one during the managerial disqualification and after managerial disqualification, respectively. All amounts are measured in year 2000 1,000 DKK. One euro equals 7.45 DKK. The unit of observation is individual year. The specification includes individual fixed effects and year fixed effects. ***, **, and * denote significance at the one, five and ten percent level.

Dependent variable	Total income		Labor income		Net wealth		Assets		Liabilities	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treated x Post	-49.79***		-33.16**		41.69		-61.46		-103.15	
	(17.59)		(15.82)		(57.23)		(49.96)		(62.81)	
Treated x During		-32.08*		-34.07**		50.54		-46.98		-97.52
		(13.56)		(15.73)		(57.47)		(47.46)		(62.82)
Treated x After		-122.69**		-29.41		5.23		-121.08*		-126.31*
		(50.58)		(18.52)		(67.69)		(68.87)		(73.38)
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.65	0.66	0.81	0.81	0.91	0.91	0.90	0.90	0.92	0.92
N	12,840	12,840	12,840	12,840	12,840	12,840	12,840	12,840	12,840	12,840

Table IV. Effect of managerial disqualifications on family members

This table reports the estimated effect of managerial disqualifications on the likelihood of a bankrupt managers' family member being a manager, an owner or a board member. In panel A the sample consists of spouses of individuals that are involved as a manager in a bankruptcy, whereas the sample in panel B consists of children of individuals that are involved as a manager in a bankruptcy. The dependent variables are indicators for being a manager, an owner, or a board member, respectively. *Treated* is an indicator for being a family member of a disqualified manager. *Post* is an indicator for years after an individual is disqualified from being a manager. *During* and *After* are indicators equal to one during the managerial disqualification and after managerial disqualification, respectively. The unit of observation is individual year. The specification includes individual fixed effects and year fixed effects. ***, **, and * denote significance at the one, five and ten percent level.

Panel A. Spouse

Dependent variable	Manager		Owner		Board member	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated x Post	0.07**		0.09		0.03**	
	(0.03)		(0.06)		(0.01)	
Treated x During		0.07**		0.08		0.03**
		(0.03)		(0.06)		(0.01)
Treated x After		0.05*		0.15*		0.02
		(0.03)		(0.09)		(0.02)
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.74	0.76	0.76	0.76	0.91	0.91
N	7,771	7,771	7,771	7,771	7,771	7,771

Panel B. Children

Dependent variable	Manager		Owner		Board member	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated x Post	0.07		-0.04		0.00	
	(0.06)		(0.06)		(0.01)	
Treated x During		0.06		-0.04		-0.00
		(0.06)		(0.06)		(0.01)
Treated x After		0.11		-0.03		0.00
		(0.07)		(0.07)		(0.02)
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.78	0.78	0.73	0.73	0.78	0.78
N	6,974	6,974	6,974	6,974	6,974	6,974

Table V. Effect of managerial disqualifications on professional network

This table reports the estimated effect of managerial disqualifications on the likelihood of a business network member of being a manager, an owner or a board member. The sample consists of business network members of individuals that are involved in a bankruptcy. Business networks are defined as individuals that overlapped with the individuals involved in the bankruptcy either as founders, managers, owners, or board members of the same firm. The dependent variables are indicators for being a manager or an owner, respectively. *Treated* is an indicator for being individuals in the business network of a disqualified manager. *Post* is an indicator for years after an individual is disqualified from being a manager. *During* and *After* are indicators equal to one during the managerial disqualification and after managerial disqualification, respectively. The unit of observation is individual year. The specification includes individual fixed effects and year fixed effects. ***, **, and * denote significance at the one, five and ten percent level.

Dependent variable	Manager		Owner		Board member	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Treated x Post	-0.06		0.00		-0.08*	
	(0.04)		(0.04)		(0.04)	
Treated x During		-0.08*		-0.01		-0.07*
		(0.04)		(0.04)		(0.04)
Treated x After		0.01		0.06		-0.10**
		(0.06)		(0.05)		(0.05)
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.82	0.82	0.82	0.82	0.83	0.83
N	24,324	24,324	24,324	24,324	24,324	24,324

Table VI. New business formation around disqualifications

This table estimates the effect of bankruptcy quarantines on the likelihood of forming a new business. The dependent variable is an indicator for founding a new limited liability company. *Treated* is an indicator for being a disqualified manager. *Post* is an indicator for years after an individual is disqualified from being a manager. *During* and *After* are indicators equal to one during the managerial disqualification and after managerial disqualification, respectively. The unit of observation is individual year. The specification includes individual fixed effects and year fixed effects. ***, **, and * denote significance at the one, five and ten percent level.

Dependent variable	Founding a new company	
	(1)	(2)
Treated x Post	-0.058**	
	(0.029)	
Treated x During		-0.060**
		(0.029)
Treated x After		-0.049
		(0.030)
Individual fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
R²	0.60	0.60
N	12,944	12,944

Table VII. Effect of managerial disqualifications on criminal activity

This table estimates the effect of managerial disqualifications on future criminal charges and convictions. In column 1 and 2 the dependent variable is an indicator for filing for bankruptcy. In columns 3 to 6 the dependent variable is an indicator for being convicted of a crime. Columns 3 and 4 includes any crime, whereas columns 5 and 6 focuses on white-collar crime and columns 7 and 8 on fraud, respectively. White-collar crime is defined by using the FBI criminal code definitions. *Treated* is an indicator for being a disqualified manager. *Post* is an indicator for years after an individual is disqualified from being a manager. *During* and *After* are indicators equal to one during the managerial disqualification and after managerial disqualification, respectively. The specification includes individual fixed effects and year fixed effects. The unit of observation is individual year. ***, **, and * denote significance at the one, five and ten percent level.

Dependent variable	Filing for bankruptcy		Convicted of crime					
			Any crime		White-collar crime		Fraud	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated x Post	-0.191***		-0.099***		-0.069**		-0.082***	
	(0.025)		(0.035)		(0.032)		(0.029)	
Treated x During		-0.210***		-0.089***		-0.062*		-0.080***
		(0.028)		(0.035)		(0.033)		(0.029)
Treated x After		-0.113***		-0.138***		-0.097***		-0.091***
		(0.019)		(0.037)		(0.033)		(0.033)
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.68	0.68	0.66	0.65	0.65	0.65	0.67	0.67
N	12,936	12,936	13,054	13,054	13,054	13,054	13,054	13,054

Table VIII. Effects on the managerial labor pool

This tables shows the changes to the composition of the managerial labor pool. In column 1 and 2 the dependent variable is an indicator for foreign citizens. In columns 3 and 4 the dependent variable is an indicator for immigrants, while the dependent variable in columns 5 and 6 is an indicator for individuals who receive public transfers. *Post reform* is an indicator for years after the introduction of managerial disqualifications in 2014. The sample include active managers, and the unit of observation is individual year.

Dependent variable	Foreign citizen		Foreign origin		Receiving public transfers	
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.063***	0.064***	0.065***	0.066***	0.047***	0.046***
	(0.008)	(0.006)	(0.009)	(0.003)	(0.003)	(0.001)
Post reform	0.014***	0.013***	0.028***	0.027***	0.005***	0.006***
	(0.004)	(0.004)	(0.006)	(0.005)	(0.002)	(0.002)
Regional fixed effects	No	Yes	No	Yes	No	Yes
Industry fixed effects	No	Yes	No	Yes	No	Yes
R^2	0.00	0.06	0.00	0.07	0.00	0.01
N	4,101,455	4,101,455	4,101,455	4,101,455	3,994,627	3,994,627

Online Appendix

Appendix Figure A1

This figure is an excerpt from a newspaper article listing disqualified managers in Southern Jutland during the first three quarters of 2017. The geographic coverage corresponds to the following three bankruptcy courts: *Skifteretten i Esbjerg*, *Skifteretten i Kolding*, and *Skifteretten i Sønderborg*. To preserve anonymity, personally identifiable information (names of individuals and companies) has been blurred. The original list includes individual names, associated bankrupt companies, and disqualification periods (*de konkursramte*, *konkursbo*, and *så mange år må den konkursramte ikke drive virksomhed*).
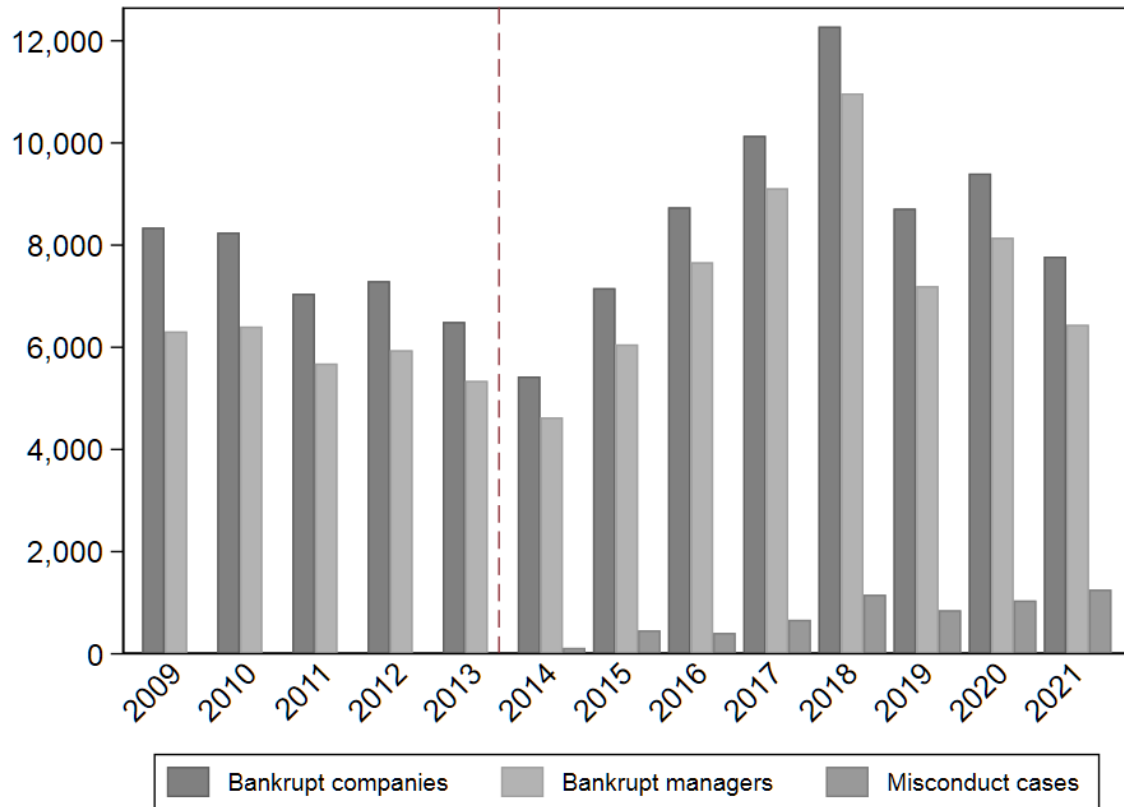
Appendix Figure A2

This map illustrates the 24 bankruptcy court districts in Denmark. The six districts where newspaper articles published disqualification lists (Horsens, Kolding, Esbjerg, Sønderborg, Odense, and Svendborg) are shaded with diagonal lines.
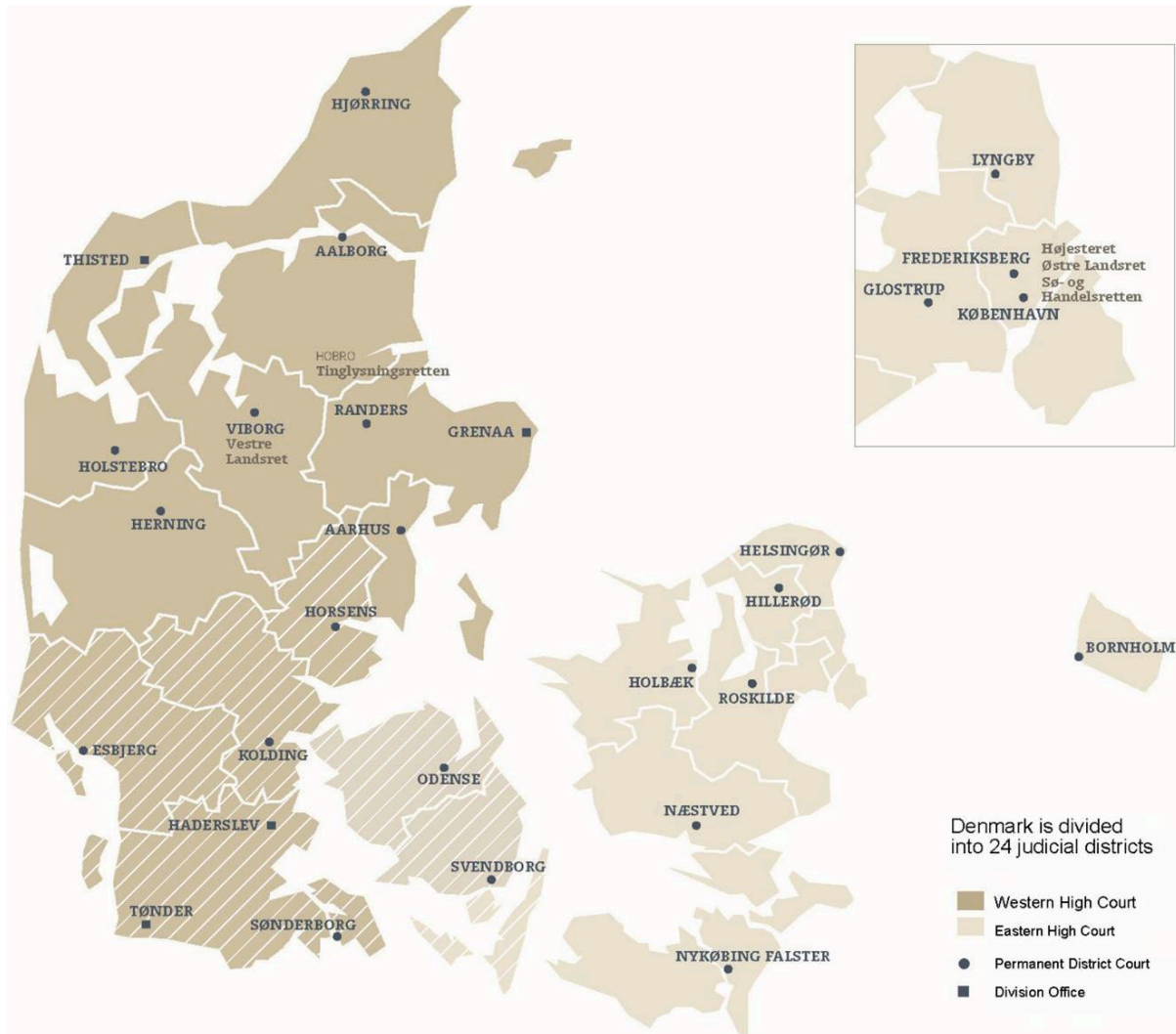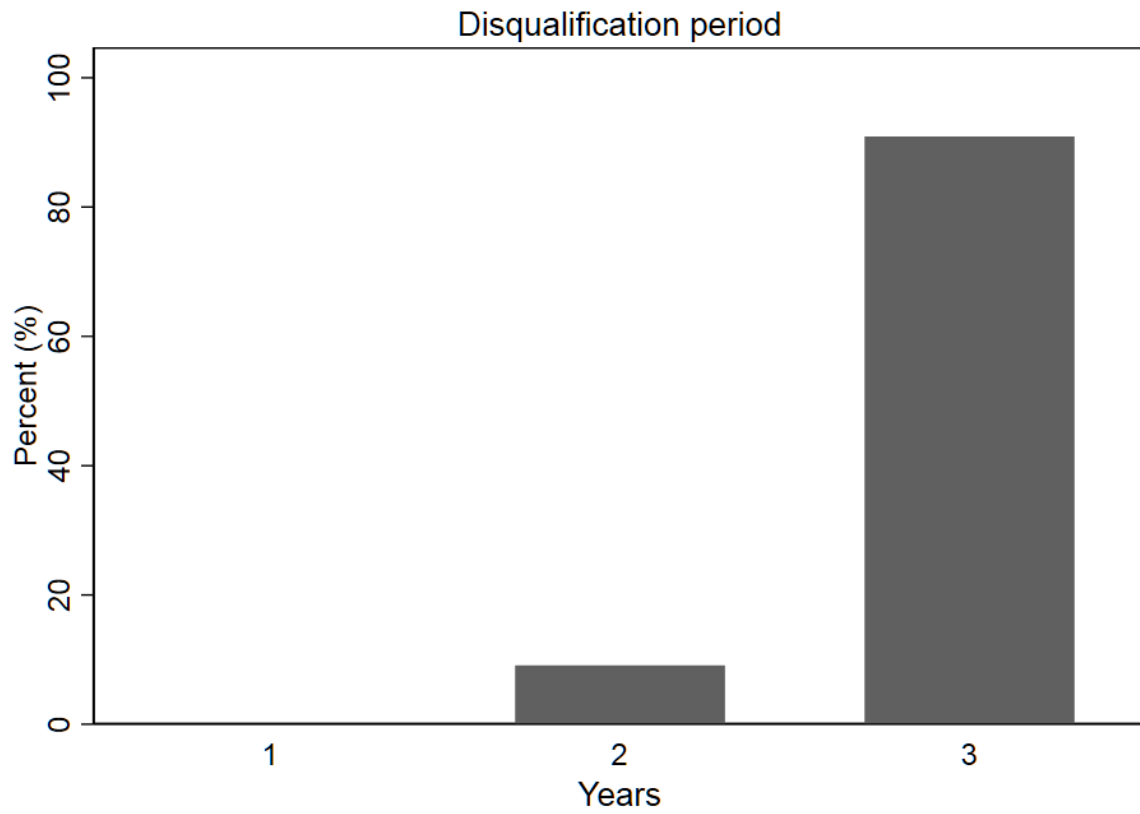
Appendix Figure A3, Number of bankruptcies and disqualifications, 2009-2021

This figure reports the number of bankrupt companies, bankrupt managers, and misconduct cases brought to the bankruptcy court in each year. Misconduct cases are bankruptcy filings where the liquidator recommends a quarantine to the bankruptcy court. The introduction of managerial disqualifications in 2014 is marked by the dashed line.

Appendix Figure A4, Length of disqualification period

This figure plots the distribution of the length of disqualification period in our sample. The horizontal axis shows the disqualification period in years, and the vertical axis indicates the percentage of individuals disqualified for that period.

Appendix Figure A5, New business formation by family members around disqualifications

This figure shows whether any of the family member of individuals involved in bankruptcies founding a new limited liability company in a window from five years before to five years after going bankrupt. Families are defined as a spouse and children of the individuals involved in bankruptcy. The dashed line shows the average for family members of individuals that are disqualified from being a manager for up to 3 years. The solid gray line shows the average for family members of individuals that are not disqualified from being a manager.
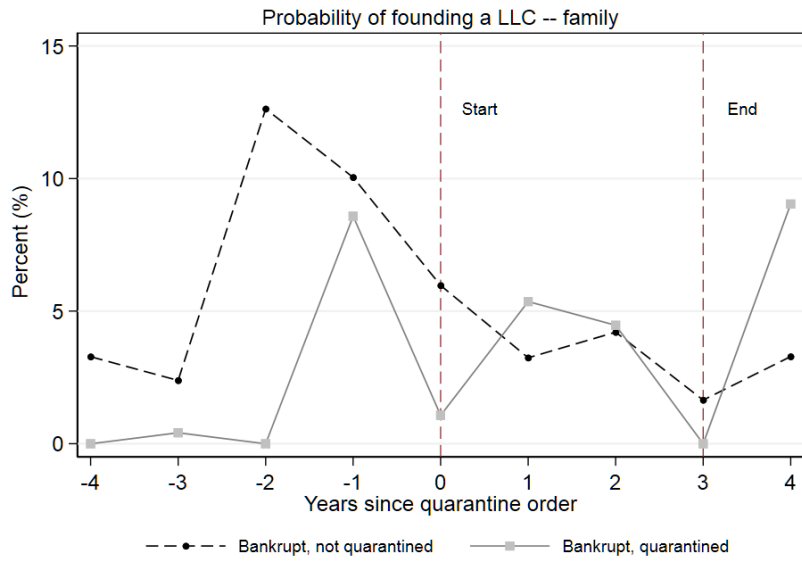
Appendix Table A1, New business formation by family members around disqualifications

This table reports the estimated effect of bankruptcy quarantines on the likelihood of a family member of forming a new business. The sample consists of family members of individuals that are involved in a bankruptcy. The dependent variable is an indicator for founding a new limited liability company. *Treated* is an indicator for being a disqualified manager. *Post* is an indicator for years after an individual is disqualified from being a manager. *During* and *After* are indicators equal to one during the managerial disqualification and after managerial disqualification, respectively. The unit of observation is individual year. The specification includes individual fixed effects and year fixed effects. ***, **, and * denote significance at the one, five and ten percent level.

Dependent variable	Founding a new company	
	(1)	(2)
Treated x Post	0.018	
	(0.012)	
Treated x During		0.007
		(0.009)
Treated x After		0.062**
		(0.030)
Individual fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
R²	0.75	0.75
N	19,679	19,679