Wealth Protection in Bankruptcy and Serial Entrepreneurship

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Abstract

I study whether wealth protection in personal bankruptcy provides a second chance to failed entrepreneurs. I exploit windfall wealth from inheritances to proxy for exogenous variation in personal wealth after bankruptcy. Windfall wealth increases reentry to business *only* among entrepreneurs who did not experience severe losses in personal income or wealth before bankruptcy. Those who respond to windfall wealth by starting new businesses have lower profits, indicating their lower entrepreneurial quality. Overall, the findings suggest that bankruptcy policies increasing wealth protection can promote serial entrepreneurship, but their effectiveness is limited by low entrepreneurial quality and personal experience of severe losses.

Keywords: personal bankruptcy, entrepreneurship, second-chance policy

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1 Introduction

Policymakers around the world have increased the level of wealth protection in personal bankruptcy laws to reduce the cost of entrepreneurial failure and foster entrepreneurship. For example, in 2019, the European Union adopted the Directive on Restructuring and Insolvency with the explicit aim to help "*over-indebted entrepreneurs benefit from a full discharge of debt ..., thereby allowing them a second chance.*"[1] Despite the importance of these policy changes, evidence on whether wealth protection in bankruptcy law is effective in providing a second chance to *failed* entrepreneurs is scant. In this study, I evaluate the effect of wealth protection on serial entrepreneurship using high-quality administrative data from Denmark.

A priori, whether failed entrepreneurs respond to a higher level of wealth protection is ambiguous. On one hand, greater wealth protection might promote serial entrepreneurship by protecting wealth from seizure by creditors, thereby relaxing financial constraints of failed entrepreneurs. Consistent with the financial constraints channel, Cahn et al. (2021) and Herkenhoff et al. (2021) find that public information on past bankruptcy limits access to financing, which deters entrepreneurship. On the other hand, regardless of their wealth, failed entrepreneurs' negative personal experiences might decrease their willingness to start another business. Prior studies document that negative personal experiences, such as corporate bankruptcy, decrease managerial risk-taking (Malmendier et al. 2011; Dittmar and Duchin 2016; Schoar and Zuo 2017). Collectively, whether failed entrepreneurs start another venture after increased wealth protection is an empirical question.

The key empirical challenge in answering this question is to generate random variation in the level of protected wealth to entrepreneurs in the event of bankruptcy. Prior studies that rely on cross-state or state-level variation in wealth protection (in the US)

[1] See the Directive (EU) 2019/1023.

are subject to potential concerns about whether such variation is confounded by state-specific investment opportunities (Hynes et al. 2004). Moreover, more debtor-friendly laws may reduce credit supply, exacerbating the financial constraints that failed entrepreneurs face. Such indirect general equilibrium channels would counteract the direct effect of wealth protection on serial entrepreneurship.[2]

In this study, I address these challenges by using an identification strategy that exploits windfall wealth from inheritances received by failed entrepreneurs in Denmark.[3] The underlying idea is that variation in windfalls after bankruptcy serves as a proxy for variation in the wealth protected in bankruptcy. The research design has two advantages. First, the timing of inheritance is random relative to that of bankruptcy, which is supported by both the institutional features of Danish bankruptcy law and the data. Second, because these windfalls are restricted to individuals receiving inheritances, my results are unlikely to be explained by shifts in the overall credit supply. I exploit this random variation to estimate the effect of greater wealth protection on serial entrepreneurship by using a matched sample. I match failed entrepreneurs who receive inheritances with those who do not receive inheritances but have similar characteristics. I then compare the reentry rates of the two groups of failed entrepreneurs.

I first trace the effect of wealth protection on serial entrepreneurship without conditioning on past entrepreneurial experiences. I find that failed entrepreneurs are not more likely to own a business despite receiving windfall wealth after bankruptcy. This result holds even for those who receive inheritances above the median size, approximately 15,000 EUR (or equivalent to 22% relative to the median debt). The result implies that wealth protection in bankruptcy is not a sufficient condition for failed entrepreneurs to

[2]Other indirect general equilibrium channels may confound the inference by causing changes in the composition of failed entrepreneurs. For example, more debtor-friendly laws reduce the expected costs of failure, which may incentivize more distressed entrepreneurs to file for bankruptcy (Agarwal et al. 2005).

[3]Several studies examine the effect of windfall wealth on first-time entrepreneurship by using different sources of wealth shocks. These include inheritances (Holtz-Eakin et al. 1994; Andersen and Nielsen 2012; Naaraayanan 2019), cash windfalls (Bellon et al. 2021; Cespedes et al. 2021; Bermejo et al. 2022), and increased access to credit via housing collateral (Adelino et al. 2015; Schmalz et al. 2017; Jensen et al. 2022).

restart. Moreover, the muted response contrasts with prior findings that document a positive effect of wealth protection on first-time entrepreneurship (e.g., Fan and White 2003; Armour and Cumming 2008; Cerqueiro et al. 2019), suggesting that the experience of failure and its severity may be another important determinant of serial entrepreneurship among bankrupt entrepreneurs.

To investigate why greater wealth protection alone does not spur serial entrepreneurship, I examine the role of past entrepreneurial experiences. Specifically, I use three measures of experiencing severe losses in personal income or wealth from business failure: (i) experiencing negative income from entrepreneurship, (ii) accumulating large business debts, and (iii) being fully personally liable (as opposed to partially liable) for business debts. I find that such experiences of severe losses deter restarting despite windfall wealth. On the other hand, those with less severe experiences are about 10 percentage points more likely to become serial entrepreneurs after receiving windfall wealth. This heterogeneous response to windfall wealth persists across different inheritance sizes. Overall, these findings suggest that the propensity to start a new business after bankruptcy is jointly determined by the amount of protected wealth and the personal experience of past failures.

If second-chance policies foster high-quality serial entrepreneurship, failed entrepreneurs who restart after receiving inheritances should outperform entrepreneurs who start for the first time. To test this premise, I compare the level of entrepreneurial profits between serial entrepreneurs who receive post-bankruptcy inheritances and matched first-time entrepreneurs who start in the same year and have similar characteristics as the serial entrepreneurs. I find that the former group earns about 20% less profits than the latter. This finding of lower profits suggests that failed entrepreneurs who respond to greater wealth protection are, on average, unlikely to be of high quality.

This study contributes to several strands of the literature. I provide the first empirical evidence on the effect of wealth protection in personal bankruptcy on *serial* entrepreneur-

ship. Theoretical studies posit that wealth protection could foster overall entrepreneurship (Landier 2005; Ayotte 2007; Jia 2015; Mankart and Rodano 2015). Consistent with this theoretical prediction, empirical evidence shows that greater wealth protection increases entrepreneurship across US states and across countries (Fan and White 2003; Armour and Cumming 2008; Cerqueiro et al. 2019).[4] In comparison to these studies, I specifically test whether *failed* entrepreneurs start a new business. Considering that an important goal of bankruptcy law is to enable failed entrepreneurs to "start fresh" by discharging business debts (White 2016), I fill this gap in the literature. I find that failed entrepreneurs do not unconditionally respond to increases in wealth protection.[5]

The second contribution of this study relates to research examining the impact of removing public 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). I complement these findings by showing that the effect of wealth protection in bankruptcy on entrepreneurship depends on whether the individual experiences severe losses from business failure.

My study also contributes to the broader literature on entrepreneurship. A large body of research documents the positive effect of wealth shocks on first-time entrepreneurship (e.g., Holtz-Eakin et al. 1994; Lindh and Ohlsson 1996; Andersen and Nielsen 2012; Adelino et al. 2015; Schmalz et al. 2017; Bellon et al. 2021; Cespedes et al. 2021; Bermejo et al. 2022). Compared with these studies, I find that bankrupt entrepreneurs respond to wealth windfalls by starting new businesses if they experienced less severe losses. An-

[4] Recent evidence finds that downside protection against entrepreneurial failure *outside* the formal bankruptcy system can stimulate entrepreneurial activities (Hombert et al. 2020; Koudijs and Salisbury 2020; Ersahin et al. 2021; Gottlieb et al. 2022). Conversely, Cumming and Li (2013), Paik (2013), and Traczynski (2019) observe either a negative or no correlation between wealth protection in personal bankruptcy and entrepreneurship in the US.

[5] Other studies examine the effect of personal bankruptcy law on firm-level outcomes other than entrepreneurship, such as borrowing and investments (Berkowitz and White 2004; Berger et al. 2011; Cerqueiro et al. 2017; Cerqueiro and Penas 2017; Chen et al. 2020; Cespedes et al. 2022; Celentani et al. 2022; Damm et al. 2022). In a related study, Baird and Morrison (2005) argue that reorganizations in *corporate* bankruptcies delay entrepreneurs' transition to new ventures that may better match their skills.

other strand of the literature documents that serial entrepreneurs outperform first-time ones (Gompers et al. 2010; Lafontaine and Shaw 2016; Shaw and Sørensen 2019). In comparison to these studies, my findings indicate that marginal entrepreneurs who restart following increased wealth protection in bankruptcy underperform.[6]

The final contribution relates to the literature documenting that negative personal experiences deter individual risk-taking (e.g., Malmendier et al. 2011; Dittmar and Duchin 2016; Koudijs and Voth 2016; Knüpfer et al. 2017; Schoar and Zuo 2017; Andersen et al. 2019). Consistent with the literature, my study finds that bankrupt entrepreneurs who experience severe losses from their businesses are less willing to take risks in the labor market.

My study has implications for policies that aim to provide a second chance to failed entrepreneurs by increasing wealth protection. First, such policies may be insufficient to foster serial entrepreneurship because personal experiences of severe losses deter restarting regardless of the level of wealth protected by bankruptcy law. Second, failed entrepreneurs who do respond to such policies may, on average, generate lower profits compared to first-time entrepreneurs or bankrupt entrepreneurs who restart without the policy support. Moreover, while greater wealth protection induces a subset of failed entrepreneurs to restart, prior research documents that these policies may simultaneously reduce businesses' access to credit in the economy, which might in turn deter entry and growth of other aspiring entrepreneurs (Berkowitz and White 2004; Berger et al. 2011; Fossen 2014).[7] In sum, my findings underscore the limited effectiveness of wealth protection policies in fostering high-quality serial entrepreneurship.

The study proceeds as follows. Section 2 introduces the institutional setting in Denmark, providing details about personal bankruptcies for entrepreneurs and about inher-

[6] In a related study, Cesarini et al. (2017) find that winning larger prizes is associated with lower entrepreneurial income among lottery winners, consistent with my finding of lower profits among serial entrepreneurs who receive inheritances.

[7] Related studies further find that greater wealth protection in personal bankruptcy is associated with higher interest rates for both secured and unsecured credit (e.g., Gropp et al. 1997; Livshits et al. 2007; Severino and Brown 2017; Chakrabarti and Pattison 2019; Gross et al. 2021).

itances for bankrupt individuals. Section 3 describes the data and how I construct the main sample by a matching procedure. I then present summary statistics of bankrupt entrepreneurs and the distribution of inheritances in the sample. Section 4 provides evidence that inheritances significantly increase wealth after bankruptcy. I then analyze whether and how larger wealth protected in bankruptcy affects serial entrepreneurship, focusing on the role of past entrepreneurial experiences. Section 5 presents robustness checks. I address the possibility that experiencing severe losses may correlate with low entrepreneurial quality. I also discuss the potential role of age of those who inherit. Section 6 concludes.

2 Institutional setting

This section describes the institutional setting relevant to this study. First, I provide a brief overview of the personal bankruptcy system in Denmark. Second, I introduce the institutional background regarding inheritance.

2.1 Personal bankruptcy for entrepreneurs in Denmark

The Bankruptcy Act (*Konkursloven*) governs insolvency proceedings in Denmark. Individual debtors who are insolvent, i.e., who cannot fulfill their debt obligations, have three filing options: liquidation for private individuals (*personlig konkurs*), reorganization (*rekonstruktion*), and bankruptcy (*gældssanering*).[8] I briefly describe two proceedings that are empirically relevant for individual debtors: liquidation and bankruptcy.[9]

Under liquidation proceedings, insolvent debtors liquidate their assets to pay the debt. Liquidation can be filed by either a debtor or creditor. Importantly, liquidation does not

[8] Agrawal et al. (2022) note that in Danish parlance, *personlig konkurs* is often referred to as "personal bankruptcy." However, *personlig konkurs* does not entail debt discharge, while *gældssanering* does. Therefore, I refer to *personlig konkurs* as "liquidation" and *gældssanering* as "bankruptcy" throughout this study.

[9] Reorganization proceedings, which became available in 2011, are commonly used by large corporate debtors (Bang-Pedersen 2018). These proceedings represent less than 5% of all insolvency proceedings between 2011 and 2016, with approximately 100 filings each year.

automatically discharge the remaining unpaid debt. To receive the discharge, debtors need to apply separately for bankruptcy proceedings.

Under bankruptcy proceedings, debtors can receive a debt discharge by committing to a repayment plan, which typically lasts three to five years. Bankruptcy proceedings begin when the debtor files with the court in the local jurisdiction. Once the court confirms the filing meets all requirements, it formally opens the bankruptcy case and publicly announces it on the State Gazette, an official government gazette, which is the source of data for this study. The announcement on the State Gazette also specifies the deadline for creditors to submit their claims. After the case is opened, the debtor presents a repayment plan to the court. The plan requires the debtor to use all disposable income (defined as predicted income minus predicted necessary expenses) to pay part of the unsecured debt.[10] If the court deems the plan feasible, it approves it and issues a bankruptcy ruling, detailing the discharge ratio (the proportion of debt discharged in bankruptcy to total unsecured debt) and the repayment terms, such as installment amounts and duration. At the issuance of the bankruptcy ruling, the portion of the debt that cannot be paid from disposable income is discharged. Only under special circumstances, such as permanent illness leaving the debtor incapable of repayment, the court may grant a full, immediate discharge. The average duration between case opening and ruling is about 9.5 months in my main sample. I provide more details on bankruptcy proceedings in Appendix A.1.

Two types of procedures: Ordinary versus business debt chapters Denmark has two different personal bankruptcy procedures, defined under Chapters 25–28 and Chapter 29 of the Bankruptcy Act (hereafter referred to as the "ordinary chapter" and the "business debt chapter," respectively).[11] The two chapters follow similar legal procedures to

[10] Secured debts, like mortgages or car loans, cannot be discharged.

[11] The business debt chapter was introduced in October 2005 following a reform to the Bankruptcy Act. Another reform in 2022, which is outside my sample period, consolidated the two chapters and reduced the repayment period to three years. For details about the 2005 reform, see Kilborn (2009), Kilborn (2011), and Bang-Pedersen (2018).

discharge debt and require liquidation of all assets, as previously described.[12] The two types of bankruptcy have three main differences that may make the business debt chapter preferable for failed entrepreneurs who are eligible (Bang-Pedersen 2018).[13] First, the business debt chapter is only available for individuals with large business debt. According to case law, the threshold for eligibility is set at 75% of the debt being business-related (Hindborg 2017, p. 281). Second, under the business debt chapter, the debtor can be unemployed or without stable income at filing, whereas under the ordinary chapter, the debtor must have a stable income from regular employment. This relaxed condition allows failed entrepreneurs who have recently reopened a business to file for bankruptcy, even without stable income. Third, the duration of the repayment period differs between the two, lasting three years under the business debt chapter and five years under the ordinary chapter. The shorter repayment period under the business debt chapter is intended to facilitate a faster return to business after bankruptcy.

Ability to borrow and to own a business after bankruptcy Bankruptcy effectively restricts an individual's ability to borrow, but not business ownership. When liquidation or bankruptcy proceedings begin, debtors are registered with bankruptcy flags in the credit register, called RKI. These flags are removed after completion of the repayment period (three to five years), but while they are present, they effectively make it impossible to obtain new loans or credit (Kreiner et al. 2020). Given that all bankrupt individuals are flagged regardless of inheritance events, my research design isolates the effect of windfall wealth, distinct from that of bankruptcy flags. Importantly, neither bankruptcy flags nor bankruptcy itself restrict an individual's ability to own a business.[14]

[12] Formally, the business debt chapter requires the debtor to be under liquidation proceedings, whereas the ordinary chapter does not; in practice, even in the ordinary chapter, the court requires the liquidation of debtors' assets of value, such as a house or a car.

[13] For other minor differences between the two chapters, see Appendix A.1.

[14] During liquidation proceedings, the bankruptcy court may impose a bankruptcy quarantine (*konkurskarantæne*) on managers who operated their company in a grossly irresponsible manner. This quarantine prohibits them from owning a limited liability company for a three-year period but does not prohibit owning an unlimited liability company.

2.2 Windfall wealth from inheritances after bankruptcy

To estimate the effect of wealth protection on post-bankruptcy reentry into entrepreneurship, my research design exploits windfall wealth from inheritances that debtors receive after bankruptcy. Identifying these inheritances is facilitated by administrative registers provided by Statistics Denmark. Specifically, I use population registers to link parents and their children and wealth registers to obtain individual-level asset and liability information, which is sourced from official tax records.[15] According to Danish inheritance law, inheritances are by default equally divided among children. Legal provisions require that the transfer of the estate to heirs should be completed within 12 months after the death. An estate tax of 15% is levied on estates exceeding a net wealth of Danish Kroner (DKK) 242,400 as of 2006. This threshold is adjusted annually by a price index.

Inheritance events provide an ideal setting to study the effect of wealth protection in bankruptcy on serial entrepreneurship, due to two institutional features. First, the timing of inheritance is unrelated to that of bankruptcy. Danish case law has established that, when inheritance is anticipated at filing, the court rejects the application for bankruptcy (Hindborg 2017, p. 59, and Petersen and Ørgaard 2022, p. 125). In such cases, the court considers that the expected inheritance will improve the debtor's financial situation, reducing the need for bankruptcy protection. Moreover, debtors are required to disclose all relevant information about their financial situation, including any prospect of inheritance; concealing such information is considered fraudulent and can later result in the cancellation of the bankruptcy order (Hindborg 2017, pp. 213–215, and Hansen and Petersen 2022, p. 337). Therefore, the institutional environment suggests that the timing of an inheritance is likely to be exogenous to the timing of a bankruptcy ruling.

Second, unexpected windfalls, such as lottery winnings or inheritance, that occur after the ruling do not change the repayment terms (Hindborg 2017, p. 314, and Petersen

[15] Following Andersen and Nielsen (2012), I restrict the sample to cases where all beneficiaries are children of the deceased.

and Ørgaard 2022, note 931).[16] Therefore, inheritances that occur after bankruptcy belong solely to the debtor, as creditors do not have claims to them. In Section 4.1, I provide empirical evidence that is consistent with these two institutional features. Together, these institutional features give me confidence that windfall wealth from inheritance after bankruptcy can serve as a proxy for greater amounts of wealth being protected in bankruptcy.

3 Data and sample selection

3.1 Data

I use four data sources to construct a panel dataset of entrepreneurs who go personally bankrupt. I begin with a list of bankrupt individuals and then attach to each name the corresponding unique individual identifier (CPR) assigned to every Danish citizen. The CPR identifiers, equivalent to Social Security numbers in the US, allow me to link the list of bankrupt individuals to the administrative registers and business ownership datasets. Using these linked data, I identify individuals' business ownership before and after bankruptcy and whether they receive inheritances. I describe each source in detail below.

1. The State Gazette of Denmark (*Statstidende*): The State Gazette is a government gazette that publicly announces statutory notices on court proceedings. I parse the State Gazette documents into notices on bankruptcy rulings and identify bankrupt individuals. I start with about 2,800 issues of the State Gazette from 2006 through 2016. Each issue contains a document index, which I use to locate sections on liquidation and bankruptcy proceedings. (See a sample page in Appendix Figure A.1.) Each section on liquidation (bankruptcy) proceedings contains, on average, 50 (22) notices, which leaves

[16] Some heirs with significant debt may waive the rights to inheritance, possibly to avoid the inheritance being used to pay creditors. However, waiving inheritance before bankruptcy can lead the court to reject the application for bankruptcy, according to the Danish case law (Hindborg 2017, p. 61, and Hansen and Petersen 2022, pp. 127–129).

me with a total of about 150,000 (66,000) notices on different stages of court proceedings (e.g., whether a case opens, a ruling is made, or a ruling is cancelled). Each document groups notices by their stage, which is demarcated by subheadings. Notices on bankruptcy rulings are grouped under the subheading "Kendelse" (Ruling). See Appendix Figure A.2 for a representative Kendelse page.

Each bankruptcy notice contains structured, textual information on the court and the debtor. The court-side information includes the unique case identifier, the date of court decision, the discharge ratio, and the court that makes the decision. The debtor-side information includes the debtor's name, date of birth, and full address (either residential or associated with an owned company). If the debtor has owned a company, its unique identifier, known as the CVR-number, is also included. Because the notice on the bankruptcy ruling does not indicate the bankruptcy chapter, I infer it from the closest preceding notice on case opening, which contains such information. Combining the notices produces the list of approximately 18,000 individuals who receive bankruptcy rulings between 2006 and 2016.[17] Next, I assign CPR identifiers to the debtors listed in the State Gazette. To achieve this, I use a combination of debtor-side information from the State Gazette, such as the debtors' full name, date of birth, address, and the unique identifiers of firms they own. After excluding debtors with insufficient details in the State Gazette, I successfully assign CPR identifiers to 77% of the debtors from the State Gazette.[18]

2. Statistics Denmark: I use administrative data from Statistics Denmark, which comprise several registers containing comprehensive information on income, wealth, education, labor supply, family (parents, spouse, and children), and parental death. These registers cover the entire population of Denmark and provide individual-level data on

[17] From October 2005, the State Gazette transitioned to digital publication (accessible at https://www.statstidende.dk), making 2006 the first full calendar year for which digital forms are available.

[18] The most common reason for non-assignment is when the debtor's date of birth and full name from the State Gazette matches multiple records in the administrative registers (due to having commonly used names). I exclude such multiple matches from the sample.

an annual basis, using a CPR identifier for each person. The data are considered highly reliable. For instance, information on income, wealth, and employment status is directly sourced from official records from the Danish Tax and Customs Administration. Furthermore, the registers remain robust against attrition unless an individual either dies or emigrates from Denmark. Due to the high quality of the data, several studies on the drivers of business entry and exit have used these data sources (e.g., Nanda and Sørensen 2010; Andersen and Nielsen 2012; Hanspal 2018; Agrawal et al. 2022; Jensen et al. 2022). I extract data from the registers for the years 1980 to 2021. I adjust variables denominated in Danish Kroner (DKK) to the 2015 price level and winsorize them at the first and ninety-ninth percentiles for each year. To identify inheritance events and their magnitudes using these administrative registers, I follow the methodology of Andersen and Nielsen (2012). The detailed procedure is outlined in Appendix A.2.

3. The Central Business Register (CVR: *Centrale Virksomhedsregister*): The Central Business Register contains firm-level information on all companies in Denmark.[19] The relevant information includes incorporation status (either unlimited or limited liability company), industry (NACE codes), number of full-time equivalent employees, business address, founders, managers, and owners. The coverage of ownership information is more detailed from 2017 onward, when limited liability companies were mandated to report their beneficial owners. The dataset covers the period from 1990 to 2021.
4. Experian: To supplement the CVR data on ownership of limited liability companies, I use the Experian dataset. It assembles data from companies' annual reports, which list ownership for individuals or entities holding more than 5% of the share capital. The dataset is available between 2000 and 2019.

[19] Companies are required to report statutory information to the CVR.

3.2 Definition of entrepreneurs

I define individuals as entrepreneurs if they own an unlimited or limited liability company (hereafter ULC and LLC, respectively).

To determine ULC ownership, I extract information from the matched employer-employee panel dataset supplied by Statistics Denmark.[20] Statistics Denmark classifies individuals as ULC entrepreneurs if their primary occupation is at a personally owned business, either a sole proprietorship (*enkeltmandsvirksomhed*) or a partnership (*interessentskab*). Focusing on primary occupation ensures that I capture full-time entrepreneurs.[21]

Second, to determine LLC ownership, I combine datasets from the CVR and Experian. The combined dataset provides a list of legal owners (those holding more than 5% of ownership or voting rights directly) and beneficial owners (those holding more than 25% of ownership or voting rights, either directly or indirectly) for each LLC at year-end.[22] I classify individuals as LLC entrepreneurs who are either legal or beneficial owners of LLCs. By focusing on individuals with significant control rights, I capture business owners who are more likely to be entrepreneurs rather than financial investors.

3.3 Sample selection

To examine serial entrepreneurship after bankruptcy, the first step in the sample selection is to identify entrepreneurs who go bankrupt. Given that the State Gazette does not consistently specify whether a bankruptcy results from business failure, I use two criteria to identify former entrepreneurs. First, I classify all bankruptcies under the business debt chapter as those of former entrepreneurs, given that this chapter is exclusively available

[20] Unlike LLCs, ULCs are not required to submit annual reports to the CVR, resulting in potential delays or omissions in reporting the closure or reopening of ULCs. Therefore, to accurately track serial entrepreneurship in ULCs, I use the matched employer-employee panel dataset from Statistics Denmark.

[21] Specifically, Statistics Denmark classifies individuals as ULC entrepreneurs if they meet either of the following criteria: (1) they own a ULC that employs at least one other individual, or (2) they are self-employed and derive over 50% of their total income from a ULC, or their business turnover exceeds 50,000 DKK.

[22] I include three types of LLCs in Denmark: public limited liability companies (*aktieselskab*), private limited liability companies (*anpartsselskab*), and entrepreneurial companies (*iværksætterselskab*).

to individuals primarily indebted from business activities. Second, for ordinary chapter bankruptcies, I consider individuals to be former entrepreneurs if they owned either a ULC or LLC within the seven years leading up to their bankruptcy. Using these criteria, I identify 5,894 entrepreneurs who go bankrupt, with 3,358 and 2,536 from the ordinary and business debt chapters, respectively.

In the second step, I refine the sample to avoid spurious correlations. First, I remove 53 individuals whose rulings are subsequently cancelled (due to failures like noncompliance with the repayment plan). Second, to eliminate those who inherit too long after bankruptcy, I exclude 314 individuals whose inheritance events occur more than four calendar years after their year of bankruptcy. Third, for individuals with multiple bankruptcy rulings, I only consider the first ruling.[23]

In the third step, I retain entrepreneurs aged between 18 and 60 at the time of the ruling, thereby excluding 676 older entrepreneurs who might simply retire from the labor market after bankruptcy. After this step in sample selection, I am left with 4,851 unique failed entrepreneurs who go bankrupt between 2006 and 2016.

Matching entrepreneurs who receive inheritances to those who do not My objective is to estimate the impact of windfall wealth on serial entrepreneurship after bankruptcy. To control for the general propensity to restart a business absent windfall wealth, I match bankrupt entrepreneurs who receive inheritances after their ruling (referred to as the "treated" group) with those of similar characteristics who do not (the "control" group).

To begin, I identify the treated group from inheritance events.[24] To focus on windfalls that occur soon after bankruptcy, I only look at inheritance events between the year of bankruptcy and three years after. The procedures yield 230 entrepreneurs with inheritance events.

[23] Refiling is a rare event: only about 3% of the bankrupt individuals in my sample receive a second or, even more rarely, a third ruling. Moreover, a review of such subsequent rulings from the State Gazette suggests that they primarily adjust terms from the initial ruling, rather than indicating a separate spell of financial distress.

[24] I provide detailed procedures on identifying inheritances in Appendix A.2.

For each bankrupt entrepreneur in the treated group, I look for an entrepreneur in the control group, and I match with replacements. The matching takes the following steps:

1. I require that the entrepreneur in the control group has the same year of bankruptcy, bankruptcy chapter (either ordinary or business debt chapters), and gender and is of a similar age ($\pm$1 year) as the treated entrepreneur.
2. Among potential matches, I select the nearest neighbor based on pre-bankruptcy wealth (measured at one year before the bankruptcy).[25] I further refine the accuracy of matching by excluding matched pairs with substantial differences in wealth levels (an absolute difference exceeding 1,000,000 DKK and a relative difference exceeding 50%). Additionally, I exclude individuals lacking information on their years of education, which is a control variable in my empirical specification.

After matching, my main matched sample consists of 214 unique individuals in the treated group and 205 in the control group. I observe them from the year of bankruptcy, denoted as year 0, through the five subsequent years, extending up to year +5.

3.4 Summary statistics

Table 1 reports the characteristics of all bankrupt entrepreneurs and the main matched sample (the treated and control groups), measured at the year of bankruptcy. The treated group is broadly similar to the full sample of bankrupt entrepreneurs on the observable characteristics shown in Panels A–D. Panel A shows that bankrupt entrepreneurs have, on average, large negative net wealth at one year before bankruptcy, which leads them to seek a debt discharge. Panel B reports that the treated group is four years older than the full sample. This age difference is not surprising, as one enters the treatment group when their last living parent dies.[26] Panel C shows that bankrupt entrepreneurs, on av-

[25] My results are robust to choosing other years before bankruptcy.

[26] A potential concern is that the older mean age of the treated group, compared to all bankrupt entrepreneurs, may dampen the impact of windfall wealth on serial entrepreneurship. I address this issue in Section 5.

erage, discharge more than 90% of total unsecured debt. Panel D reports that about 20% of bankrupt entrepreneurs owned LLCs during the seven-year period before bankruptcy. The presence of former LLC owners under personal bankruptcy suggests that, like ULC owners, they are personally liable for some business debts. Their presence is consistent with prior studies documenting the importance of personal credit (and thus personal bankruptcy) among small business owners (e.g., Robb and Robinson 2014; White 2016; Wang et al. 2022; Chava et al. 2023; Fonseca and Wang 2023).[27] In the last column, I examine the difference between the treatment and matched control groups. None of the differences in characteristics between the two groups are statistically significant. This absence of significant differences, particularly among those not used in the matching process, implies that both groups are similar on observable entrepreneurial characteristics.

[Table 1 about here.]

Inheritance amounts The main explanatory variable in my analysis is whether an individual receives an inheritance. I provide descriptive evidence about the magnitude of inheritances to show that they are economically significant for these distressed entrepreneurs. The top panel of Figure 1 plots the distribution of inherited wealth in six bins. The bins group different sizes of inheritances in DKK: 1 to 10,000, 10,001 to 25,000, 25,000 to 100,000, 100,001 to 250,000, 250,001 to 500,000, and those exceeding 500,000 DKK (which approximately correspond to EUR: 0.1 to 1,300, 1,301 to 3,400, 3,401 to 13,000, 13,001 to 34,000, 34,001 to 67,000, and those exceeding 67,000 EUR, respectively). The distribution of inherited wealth shows substantial variation, similar to Andersen and Nielsen (2012), who find a positive effect of windfall wealth from inheritances on first-time entrepreneurship. To put these results into perspective, the average (median) size of inheritances in my study is 308,000 DKK (115,000 DKK), which is of similar magnitude to the average found in Ander-

[27] Specifically, LLC owners may have personal liability if they use personal loans to finance their companies or have personal guarantees on company loans.

sen and Nielsen (2012).[28] Therefore, the amounts that the bankrupt entrepreneurs in my sample inherit appear to be sufficiently large to relax the financial constraints of failed entrepreneurs who want to restart.

In the bottom panel of Figure 1, I plot the ratio of inherited wealth to dischargeable debt as an alternative way to quantify the magnitude of windfalls. This panel plots the ratio using four bins. I define dischargeable debt as unsecured debt measured at one year before bankruptcy. Similar to the top panel, these relative sizes of inheritances are economically large.

Inheritance timing In Appendix Figure A.3, I report the distribution of inheritance timing relative to bankruptcy ruling. I group inheritance events into seven bins, each spanning six months. For instance, the first bin represents the share of individuals who receive an inheritance within the first six months following their bankruptcy ruling date. Subsequent bins group people by intervals of six months. The plot shows that the timing of inheritances does not exhibit bunching within the first six or 12 months following bankruptcy. For instance, inheritances that occur within 12 months of bankruptcy account for 25.7% (15.0% + 10.7%) of total inheritance occurrences, a figure lower than the 35% (19.6% + 15.4%) for those occur within the last 12 months. The relatively uniform distribution of inheritances across the event window supports that the timing of inheritances is exogenous once a bankruptcy ruling is issued (as discussed in Section 2.2).

[Figure 1 about here.]

[28] Compliant with Statistics Denmark's data policy, this median value represents the average of five values around the median.

4 Windfall wealth and serial entrepreneurship

4.1 Inheritance as a proxy for wealth protected in bankruptcy

In my research design, I exploit windfall wealth from inheritances to approximate the amount of wealth protected in bankruptcy. Before the main analysis, I assess the validity of the research design by testing (1) whether the treated and control groups show a similar trend in the level of wealth before the inheritance event and (2) whether inheritance increases net wealth (i.e., the difference between total assets and total debt) of the recipients.

Figure 2 illustrates the dynamics of average net wealth for both the treated (solid line) and control (dashed line) groups. The horizontal axis shows the years since bankruptcy, with year 0 denoting the year in which the court issues a bankruptcy ruling. The shaded area between years 0 and 3 represent the treatment window, during which inheritance events occur. The plot supports the validity of the research design in two ways.

First, Figure 2 shows that the treated and control groups show a similar evolution of wealth before bankruptcy. Despite constructing the matched control group based on individuals' characteristics measured at year -1, the overall trend in wealth is similar between the two groups throughout the event years -7 and -1.[29] This parallel pre-trend supports the main identifying assumption in the difference-in-differences design that the treated and control groups' wealth would have trended similarly in the absence of windfall wealth. In particular, the parallel pre-trend is inconsistent with opportunistic filing behavior by debtors in my sample, such as debtors systematically accumulating debt in anticipation of post-bankruptcy inheritances. Therefore, Figure 2 supports the main identifying assumption that the timing of inheritance is random relative to that of bankruptcy.

Second, while both groups experience a sharp jump in net wealth around the year

[29] None of the event years between -7 and -1 show statistically significant differences in wealth between the two groups.

of bankruptcy due to debt discharge, the treated group exhibits a higher level of wealth throughout the post-bankruptcy period. The persistent difference in wealth (statistically significant at the 10% level at each event year, except year 0) suggests that inheritance significantly increases the wealth of recipients. In particular, the post-bankruptcy level of wealth for the treated group remains close to zero or positive, while that of the control group remains negative. The negative level of wealth suggests that financial constraints may be particularly binding for failed entrepreneurs in the control group, who intend to restart.

Overall, Figure 2 lends support to (1) the parallel trend in wealth before bankruptcy, and (2) the legal feature that unanticipated inheritances belong to the debtor and are thus not subject to creditors' seizure. These two results are consistent with the institutional environment discussed in Section 2.

After observing that inheritances increase net wealth, I run regressions to quantify the magnitude of the increase. Specifically, I estimate the following OLS regression:

$$Y_{it} = \alpha_i + \alpha_y + \beta_1 \textit{After bankruptcy discharge}_{it} + \beta_2 \textit{After inheritance}_{it} + \gamma X'_{it} + \varepsilon_{it}, \quad (1)$$

where the dependent variable, Y_{it}, is an outcome variable (net wealth and its components) of individual i in event year t, where $t = 0$ is the year of bankruptcy. In the following analysis, I use five outcome variables for Y_{it}: the level of net wealth, total debt, and total assets, or alternatively, the log-transformed values of total assets and total debts. *After bankruptcy discharge* is an indicator variable equal to one in the years following bankruptcy and zero otherwise. *After inheritance* is an indicator variable equal to one in the years following an inheritance event and zero otherwise. I include individual fixed effects (α_i) to control for unobserved time-invariant determinants of wealth for individuals, and calendar-year fixed effects (α_y) to rule out time effects, such as economic conditions. The inclusion of the individual fixed effects implies that I benchmark the post-bankruptcy and

post-inheritance levels of the outcome variables to their pre-bankruptcy levels. The control variables X'_{it} include age-group fixed effects (dummies for every five-year bin of age) to control for time-varying determinants of wealth or its components. Standard errors are clustered at the individual level. The coefficient β_1 estimates the impact of bankruptcy and debt discharge on wealth. The main coefficient of interest, β_2, captures the impact of inheritance on wealth.

Table 2 reports the results from estimating Equation 1. The sample comprises individuals in the treated and control groups, observed from seven years before until five years after bankruptcy. Columns 1–5 shows results for five separate regressions in which outcome variables are the level of net wealth, total debt, total assets, the log of total assets, and the log of total debts, respectively.[30] The results in Table 2 are consistent with Figure 2. Column 1 shows that the level of net wealth increases by about 909,200 DKK in the years after bankruptcy. Moreover, the effect of inheritance is also significant, amounting to approximately 30% of the magnitude of the bankruptcy's effect on wealth. Columns 2–5 further decompose the effect on net wealth into its components, total debt and assets.[31] Columns 2 and 4 show that bankruptcy reduces a large amount of debt (by about 1,303,100 DKK or by 81%, respectively), whereas inheritance does not have statistically significant effects (by about 142,000 DKK or by 15%, respectively), as most of the debt is already discharged through bankruptcy. Instead, Columns 3 and 5 show that inheritances increase total assets (by about 143,900 DKK or by 90%, respectively). The increase in assets supports the research design, which uses variation in windfall wealth as a proxy for variation in the amount of protected wealth in bankruptcy.

[Figure 2 about here.]

[Table 2 about here.]

[30] I do not use the logarithm of net wealth because the level of net wealth is often negative.

[31] Columns 4 and 5 omit observations for which the value of total debts or assets is equal to zero. The results are robust when using *Log(total debts+1)* or *Log(total assets+1)* as alternative specifications.

4.2 Wealth protected in bankruptcy and serial entrepreneurship

In the previous section, I established that windfalls from inheritance increase net wealth, which is consistent with the idea of using them as a proxy for greater wealth protection in bankruptcy. In this section, I test whether more wealth protected in bankruptcy increases the probability of starting a new business, without conditioning on past entrepreneurial experiences. If greater wealth protection, which relaxes the financial constraints of failed entrepreneurs, is a sufficient condition for restarting, I expect to see a positive relation between windfall wealth and serial entrepreneurship.

I begin with a descriptive analysis. Figure 3 shows the dynamics of the share of individuals who own a business. The horizontal axis shows the years since bankruptcy, with year 0 denoting the year in which the court issues a bankruptcy ruling. The entrepreneurship rates for the treated and control groups are illustrated with solid and dashed lines, respectively. The shaded area between event years 0 and 3 represents the treatment window, during which inheritance events occur.

Figure 3 provides several stylized facts about the dynamics of entrepreneurship around bankruptcy. First, many entrepreneurs exit businesses as they approach bankruptcy, suggesting that their business is failing. Second, in the five years following the bankruptcy, entrepreneurship rates increase by only about 14 percentage points, from approximately 10% to 24%. Specifically, the treated group shows an increase of 14 percentage points, while the control group exhibits a similar increase of 13 percentage points.[32] Finally, the treated and control groups show a parallel trend before bankruptcy. Although the treated group exhibits a marginally higher share of entrepreneurship, the difference is both economically and statistically insignificant. Moreover, even after bankruptcy, the difference between the two groups remains insignificant. The trends shown in Figure 3, therefore,

[32]These trends hold when examining the stock of serial entrepreneurs, as opposed to the flow, as in Figure 3. Additionally, extending the event window to seven years post-bankruptcy, as long as the data allow, does not materially change the findings. The differences between the two groups remain statistically insignificant.

suggest that wealth protection by bankruptcy laws may be insufficient to induce serial entrepreneurship.

[Figure 3 about here.]

To test this result more formally, I regress the indicator for post-bankruptcy business ownership on three measures of windfall wealth after bankruptcy. Specifically, to examine serial entrepreneurship after bankruptcy, I limit my sample to individuals observed in the year of bankruptcy and the following five-year periods. With this sample, I estimate the following linear probability model:

$$Owner_{it} = \alpha_y + \beta\, After\ inheritance_{it} + \gamma X'_{it} + \varepsilon_{it}, \tag{2}$$

where the dependent variable, $Owner_{it}$, is an indicator variable equal to one if individual i owns a business in event year t. In this specification, I use three measures to capture the effects of windfall wealth: (i) *After inheritance* is an indicator variable equal to one in the years following the inheritance event and zero otherwise; (ii) *After inheritance* $\times$ *Inherited wealth* is equal to the amount of inherited wealth (measured in millions of 2015 DKK) in the years following the inheritance event and zero otherwise; and (iii) *After inheritance* $\times$ *Large inheritance* is an indicator variable equal to one for individuals receiving an above-median inheritance in the years following the inheritance event and zero otherwise. The latter two variables capture potential linear or non-monotonic effects of the size of the inheritance. For control variables X'_{it}, I include bankruptcy case characteristics (an indicator for the bankruptcy chapter and the discharge ratio) and individual characteristics. For individual characteristics, I follow Andersen and Nielsen (2012) and control for the individual's propensity to start a business: the levels of wealth and income (measured at one year before bankruptcy), age, an indicator for gender, and years of education. I include calendar-year fixed effects (α_y) to control for time effects, such as changes in investment opportunities over time. Standard errors are clustered at the individual level. The main

coefficient of interest is β, which estimates the effect of receiving an inheritance (or the size of the inheritance) on the probability of owning a business after bankruptcy.

Table 3 shows the results from the linear probability model regressions in Equation 2. The results are consistent with the univariate comparison in Figure 3, which suggests a small effect of inheritance on serial entrepreneurship. In Column 1, I find that the probability of owning a business after receiving an inheritance is positive (4.8 percentage points), but not statistically significant. Next, in Columns 2 and 3, to address the potential concern that only substantial windfalls may impact the likelihood of restarting, I exploit variation in the amount of inheritance, as well as variation in the timing of inheritance. However, both columns suggest that the null effect is unlikely to be driven by variations in inheritance size. In Column 2, the coefficient on *After inheritance* $\times$ *Inherited wealth* is economically small, implying that increasing the inheritance by 1,000,000 DKK ($\approx$ 134,000 EUR) would increase the probability of restarting by only 5.5 percentage points in each post-inheritance year. The economic magnitude of additional protected wealth is small, given that average sizes of inherited wealth and dischargeable debt are 308,000 DKK and 1,100,000 DKK, respectively. In addition, the estimate is not statistically significant, suggesting there is no linear effect of inherited wealth. Similarly, Column 3 shows null effects for both above- and below-median sizes of inheritance, where the median is about 115,000 DKK (15,000 EUR).[33]

Overall, the results in Table 3 suggest that wealth protection in bankruptcy alone has no significant effect on serial entrepreneurship. This null result contrasts with prior findings of a positive relationship between greater wealth protection and first-time or overall entrepreneurship (Fan and White 2003; Armour and Cumming 2008; Cerqueiro et al. 2019), as well as a positive relation between wealth shocks outside bankruptcy and entrepreneurship (e.g., Holtz-Eakin et al. 1994; Andersen and Nielsen 2012; Bellon et al. 2021; Cespedes et al. 2021). The contrasting responses between failed and first-time entrepre-

[33] I obtain similar results if I instead use the indicator for inheritances in the largest quartile.

neurs suggest that the experience of failure and its severity may discourage failed entrepreneurs from reentering entrepreneurship.

[Table 3 about here.]

4.3 Experience of severe losses and serial entrepreneurship

Next, I investigate the role of past entrepreneurial experience on serial entrepreneurship. Personal entrepreneurial experience may affect the probability of starting a second venture, particularly given that prior literature shows that managers' negative experiences — such as corporate bankruptcy — decrease their risk-taking (Malmendier et al. 2011; Dittmar and Duchin 2016; Schoar and Zuo 2017). While bankruptcy itself can be a distressing experience (e.g., due to the stigma attached to managers who go bankrupt, as in Grindaker et al. 2021; Bernstein et al. 2023), I focus on entrepreneurial experiences that have a *severe* impact on personal income and wealth. I identify three measures of such experiences.

First, I define severe losses based on whether an individual experiences negative personal income from entrepreneurship at any point during the pre-bankruptcy periods.[34] By construction, this measure is defined only for those who have owned unlimited liability companies before bankruptcy. Second, I classify whether over-indebtedness, which leads to subsequent bankruptcy, originates primarily from entrepreneurship. An ideal measure would be to classify each type of debt as business-related or not, but such a granular level of data is unavailable to me. Nevertheless, the institutional feature of the Danish bankruptcy system allows me to approximate the ideal measure. As discussed in Section 2, failed entrepreneurs with large business debts are eligible to file under the business debt chapter, a more lenient procedure than the ordinary chapter. Thus, bankrupt entre-

[34] In Denmark, entrepreneurial losses can be used for a deduction in taxable income in the same year if an entrepreneur has another salaried job or earns positive capital income. However, the tax deduction is unlikely to significantly offset the loss in total income in the year given that my sample consists of full-time entrepreneurs who have little financial wealth.

preneurs under the business debt chapter are more likely to have accumulated large debt due to entrepreneurial failure than those under the ordinary chapter. In addition, this second measure supplements the first because it is applicable for every entrepreneur in my sample. Third, I define whether an individual solely owned an unlimited liability company before bankruptcy, implying the individual is *fully* liable for the business debts.[35] While some entrepreneurs may enter bankruptcy due to personal guarantees on their limited liability company's debt, generally, owners of limited liability companies are less likely to be held *fully* liable for business debt compared to owners of unlimited liability companies. Conversely, owners of unlimited liability companies are more likely to have severely negative experiences from business failure than owners of limited liability companies.[36] Using these three measures of adverse shocks to income or wealth, I test whether experiences of severe losses hold back bankrupt entrepreneurs from restarting despite windfall wealth.

To explore the effect of experiences of severe losses, I begin with a descriptive analysis. Figure 4 plots the dynamics of the share of individuals who own a business among individuals in the treated group. The top and bottom panels plot the dynamics, split by the first and second measures of severe losses, respectively.[37] Figure 4 highlights two stylized facts about how experiences of severe losses influence entrepreneurship before and after bankruptcy, among those who receive inheritances. First, during the pre-bankruptcy period, those with (solid lines) and without (dashed lines) severe losses show differential pre-trends. This is expected given that the groupings are determined by entrepreneurial experiences before bankruptcy. A closer look reveals that the drop in the entrepreneurial rate is both sharper and deeper for the solid lines, indicating that severe income losses or

[35] I use an indicator for "solely ULC owner" rather than for "all ULC owner" because the latter does not distinguish between entrepreneurs who had owned both an LLC and a ULC versus those who were exclusively ULC owners.

[36] Although this third measure partially captures the protection from negative personal income, it complements the first measure because it is defined for both LLC and ULC owners.

[37] To save space, I report similar figures based on the third measure of severe losses (*Full personal liability*) and those based on the control group in Appendix Figures A.4 and A.5, respectively. For the third measure of severe losses, I observe similar stylized facts as for the two other measures.

large business debts are associated with a faster and worse decline in business. Second, during the post-bankruptcy period, although every individual in the sample had been an entrepreneur before bankruptcy, the solid and dashed lines show a differential rate of serial entrepreneurship. Specifically, in both panels, roughly 30% of those without severely negative experiences (dashed lines) restart, compared to fewer than 20% of their counterparts with such experiences (solid lines). The visual evidence thus indicates that bankrupt entrepreneurs who experienced severe losses are less likely to respond to windfall wealth by starting a new business, at least in the first few years after bankruptcy.

[Figure 4 about here.]

Next, I investigate the results in Figure 4 more formally by estimating the following linear probability model, in which I add an interaction term from Equation 2:

$$\begin{aligned} Owner_{it} = \alpha_y + \beta_1 After\ inheritance_{it} + \beta_2 Severe\ losses_i \\ + \beta_3 After\ inheritance_{it} \times Severe\ losses_i + \gamma X'_{it} + \varepsilon_{it}, \end{aligned} \tag{3}$$

where $Severe\ losses_i$ is an indicator variable equal to one if individual i experiences severe losses from business before bankruptcy, which is one of the following three measures: $Severe\ income\ loss_i$, $Business\ debt\ chapter_i$, or $Full\ personal\ liability_i$. Standard errors are clustered at the individual level. The coefficients of interest are β_1 and β_3, which capture the heterogeneous effect of inheritance on the probability of restarting, depending on experiencing severe losses.

Table 4 reports the results estimating Equation 3 using the first measure of severe losses, *Severe income loss*. I find that experiencing severe income losses from entrepreneurship deter restarting despite larger wealth protected in bankruptcy. In Column 1, the coefficient on *After inheritance* suggests that inheritances increase the probability of owning a business after bankruptcy by 13.1 percentage points per year. The magnitude is economically large compared to the baseline probability of owning a business of 18.7% (16.5%)

for the treated (control) group. However, the negative coefficient on *After inheritance* × *Severe income loss* is of similar magnitude, indicating that the positive effect is concentrated among entrepreneurs who do not experience severe losses. In Columns 2 and 3, I further test if the positive effect of inheritances depends on their size. In Column 2, the coefficient on *After inheritance* × *Inherited wealth* suggests a positive linear effect of inherited wealth on the probability of restarting. On the other hand, in Column 3, while the positive coefficient on *After inheritance* suggests that inheritances of any size have positive effects, the small coefficient on *After inheritance* × *Large inheritance* indicates inheritances of above-median size do not have an incremental effect. Nevertheless, in both Columns 2 and 3, when interacted with the measure of severe losses, *Severe income loss*, the positive effects are offset. These results suggest that even a larger amount of wealth protected in bankruptcy does not offset the effect of experiencing severe losses from past business.

Table 5 reports the results estimating Equation 3 using the second measure of severe losses, *Business debt chapter*. I find that experiencing severe indebtedness from failed businesses has similar negative effects on the probability of restarting. In Column 1, the positive coefficient on *After inheritance* suggests that entrepreneurs who go bankrupt without significant business debt are more likely to restart. Conversely, the negative coefficient on *After inheritance* × *Business debt chapter* suggests the experience of accumulating large debt from business deters serial entrepreneurship. In Columns 2 and 3, I use information on inheritance sizes and find similar experience effects, although the estimates are less precise. Importantly, the experience effect holds after expanding the sample to include entrepreneurs who did not own ULCs (i.e., solely LLC owners) before bankruptcy. This result suggests that the experience effect is insensitive to former incorporation choice of entrepreneurs.

Lastly, Table 6 reports the results estimating Equation 3 using the third measure of experiencing severe losses, *Full personal liability*. I find that holding *full* personal liability from failed businesses has negative effects on the probability of restarting. In Col-

umn 1, the large positive coefficient on *After inheritance* suggests that, after receiving inheritances, former LLC owners are more likely to restart by 12.6 percentage points per year. Compared with this positive effect, the negative coefficient on *After inheritance* $\times$ *Full personal liability* suggests that entrepreneurs who owned only ULCs prior to bankruptcy do not restart in response to inheritances. While these two coefficients are not statistically significant at conventional levels, their economic magnitudes are large given that the sample mean of serial entrepreneurship is about 17%. In Columns 2 and 3, I use information on inheritance sizes and find similar effects with more precise estimates: the positive effect of inheritances on serial entrepreneurship is concentrated among former LLC owners, who are less likely to be fully personally liable for business debt.

[Table 4 about here.]

[Table 5 about here.]

[Table 6 about here.]

Overall, these findings suggest that the null result in Table 3 is driven by entrepreneurs who experience severe losses. Although wealth windfalls relax financial constraints, my results indicate that the experience of severe losses may decrease failed entrepreneurs' willingness to start another business. Those without such experience respond to windfall wealth and restart a business. These different responses to windfall wealth suggest that the propensity to start a new business after bankruptcy is a joint function of the amount of protected wealth and the personal experience of severe losses from failed entrepreneurship.

4.4 Returns to post-bankruptcy serial entrepreneurship

In previous sections, I find that entrepreneurs respond to greater wealth protected in bankruptcy only if they experienced less severe losses. In this section, I test whether the

entrepreneurs who do respond are of high quality by assessing their performance in the new business relative to that of a comparison group. Given that second-chance policies rely on the premise that serial entrepreneurs outperform first-time business owners, I test the premise by using a comparison group consisting of first-time entrepreneurs. I measure performance by the business survival rate and the level of entrepreneurial income.

To this end, I construct a matched sample consisting of failed entrepreneurs who restart after bankruptcy from my main sample and those of similar characteristics who become entrepreneurs for the first time. For each failed entrepreneur who restarts after bankruptcy, I look for a first-time entrepreneur from the Danish population. To control for the individual's entrepreneurial quality, I match individuals who restart after bankruptcy (referred to as the "serial entrepreneurs") with those of similar characteristics who become entrepreneurs for the first time (the "first-time entrepreneurs"). First-time entrepreneurs are of similar age ($\pm$1 year) and the same gender, years of education, and incorporation choice. They have similar pre-entrepreneurial labor income, and they start their businesses at the same time that the serial entrepreneurs *re*start. I describe the matching process in detail in Appendix Section A.4 and present summary statistics of the matched sample in Appendix Table A.1. After matching, the sample consists of 110 unique serial entrepreneurs and 110 first-time entrepreneurs. I observe them from the year of (re)starting a business through the five subsequent years. In the matched sample, around 50% of serial entrepreneurs experience inheritance events. They are marginal entrepreneurs who respond to greater wealth protection by restarting a business and are, therefore, the focus of second-chance policies.

To compare the performance of these two types of entrepreneurs, I use two measures: survival rate and entrepreneurial profit. Specifically, I estimate the following OLS regression:

$$Y_{it} = \alpha_y + \beta_1 \textit{After inheritance}_{it} + \beta_2 \textit{Past bankruptcy}_i + \gamma X'_{it} + \varepsilon_{it}, \tag{4}$$

where the dependent variable, Y_{it}, is either $Owner_{it}$ or $Labor\ and\ entrepreneurial\ income_{it}$: the former is an indicator variable equal to one if individual i owns a business in event year t; the latter measures the level of entrepreneurial profit for individual i in event year t. The main independent variables are *After inheritance* and *Past bankruptcy*. *After inheritance* is defined as an indicator variable equal to one in the years following the inheritance event and zero otherwise, identical to previous specifications. *Past bankruptcy* is an indicator equal to one for individuals who experienced bankruptcy (thus, equal to one for all serial entrepreneurs in this matched sample). For control variables X'_{it}, I use individual characteristics (age, gender, years of education) as well as wealth and labor income before entrepreneurship, incorporation choice, and years of business experience. These variables help control for an individual's general entrepreneurial ability. I include calendar-year fixed effects (α_y) to control for time effects. Standard errors are clustered at the individual level. The coefficients of interest are β_1 and β_2. β_2 estimates the difference in business ownership and entrepreneurial profit between first-time and serial entrepreneurs. β_1 captures the effect on bankrupt entrepreneurs who restart after receiving an inheritance. Collectively, a negative β_1 would suggest that, controlling for the average quality of serial entrepreneurs, the marginal quality of entrepreneurs who respond to greater wealth protection is lower than average first-time entrepreneurs.

I first examine the difference in the survival likelihood of the two types of entrepreneurs. Appendix Table A.2 reports results estimating Equation 4, where the outcome variable is business ownership. The results suggest that *average* serial entrepreneurs do not survive longer than first-time ones: coefficients on *Past bankruptcy* are positive but statistically not significant. Regarding *marginal* serial entrepreneurs' survival likelihood, the effect of inheritance is not monotonic in the size of inheritance: while coefficients on *After inheritance* are positive in Column 1, Columns 2 and 3 imply that serial entrepreneurs who receive large inheritances are not more likely to survive. Therefore, the results suggest that the effect of inheritance on the survival likelihood of marginal entrepreneurs is

ambiguous.

After documenting that serial entrepreneurs do not survive longer in their businesses than first-time entrepreneurs, I compare levels of income between the two groups. I first provide a descriptive analysis. Figure 5 plots averages of labor and entrepreneurial income that are (1) measured over three years before entrepreneurship and (2) measured over all years during entrepreneurship, split by first-time and serial entrepreneurs. To illustrate the income difference between marginal and average entrepreneurs, I limit the sample to serial entrepreneurs who receive an inheritance and first-time entrepreneurs who are matched to them. Figure 5 shows that the two groups of entrepreneurs have similar labor income before (re)starting a business. However, after (re)starting, they have an income difference of about 44,000 DKK for each year of entrepreneurship. The difference suggests that, compared to similar first-time entrepreneurs, serial entrepreneurs who restart after receiving an inheritance earn significantly less.

[Figure 5 about here.]

I next test this descriptive result more formally. Table 7 reports results estimating Equation 4, where the outcome variable is labor and entrepreneurial income. The results in Table 7 are consistent with Figure 5. For example, in Column 1, the small, negative coefficient on *Past bankruptcy* suggests that average serial entrepreneurs earn less from their business than first-time entrepreneurs. However, the estimate is not statistically significant in all specifications, suggesting large variation in profits among average serial entrepreneurs. In contrast, the negative coefficient on *After inheritance* is both economically and statistically significant. It suggests that the serial entrepreneurs who receive an inheritance have on average 64,000 DKK lower profits for each year of entrepreneurship. The economic magnitude is large and represents about 20% lower profits, given that the average entrepreneurial profit is 280,000 DKK for all entrepreneurs in the sample. In Columns 4–6, I find similar results when I limit the sample to observations where the business survives.

The results in Appendix Table A.2 suggest that survival likelihood is not always higher for serial entrepreneurs who restart after receiving an inheritance, and Table 7 shows that they earn significantly lower profits than first-time entrepreneurs. Together, these results do not support the idea that second-chance policies facilitate reentry of serial entrepreneurs who outperform first-time business owners.

[Table 7 about here.]

Comparison *within* bankrupt entrepreneurs who restart In the previous section, I assess post-bankruptcy income levels of serial entrepreneurs by using a comparison group consisting of first-time entrepreneurs with similar characteristics. An alternative way to evaluate the marginal quality of serial entrepreneurs is to compare the income levels *within* only bankrupt entrepreneurs. To this end, I return to my main sample that consists of treated and control groups of bankrupt entrepreneurs. Using all bankrupt entrepreneurs, I compare entrepreneurial income between those who restart with and without receiving an inheritance. In this within-group analysis, I find that serial entrepreneurs who receive an inheritance earn about 20–30% less entrepreneurial income relative to those who do not inherit. I provide a more detailed description of the analysis in Appendix Section A.6, along with the results in Appendix Figure A.6 and Appendix Table A.3.

Overall, the results in Table 7 and Appendix Table A.3 suggest that the entrepreneurs that greater wealth protection is more likely to induce to restart end up earning significantly less. The low performance of marginal entrepreneurs who respond to changes in the bankruptcy regime is consistent with prior studies. For instance, Cerqueiro et al. (2019) find that first-time entrepreneurs who start after increases in state-level wealth protection are less likely to survive than those who enter before. In addition, Cahn et al. (2021) find that bankrupt entrepreneurs who restart after removal of corporate bankruptcy flags are more likely to go bankrupt again. I complement these studies by providing direct ev-

idence that marginal entrepreneurs earn lower profits, which may eventually lead them to exit. Overall, these findings indicate that the marginal entrepreneurs who respond to a more lenient bankruptcy regime are of low quality.

5 Robustness checks

In this section, I perform additional tests to assess the robustness of the baseline findings. I first address concerns that the entrepreneurs experiencing severe losses may be a proxy of their low ability or merely an artifact of long tenure in business. I then explore if the older age of the treated group is dampening the response to inheritances.

Severe losses versus low entrepreneurial quality I address potential concerns that experiencing severe losses before bankruptcy may correlate with low entrepreneurial quality. To address this concern, I refine the tests in Table 4 to control for low relative performance during prior entrepreneurship. To this end, I compute the relative performance of entrepreneurs by collecting annual labor and entrepreneurial income data for the population of entrepreneurs (i.e., including non-bankrupt entrepreneurs). Next, I split entrepreneurs' income into deciles based on the 88-industry-year level.[38] The resulting variable, *Low past performance,* is an indicator variable equal to one if an individual's entrepreneurial income persistently falls within the bottom decile throughout his or her entrepreneurship before bankruptcy. In other words, by focusing on persistent low performance, this measure separates entrepreneurs who have low skill from those who experience "bad luck." This measure is only defined for entrepreneurs with available information about the industry of the company they own.

Table 8 reports the results. In Column 1, I first examine the effect of low relative perfor-

[38]The median (average) number of members in 88-industry-year cells is, for example, 547 (2,965) in year 2006. I then exclude observations that have fewer than 25 members in an industry-year cell. The industry classification is based on the two-digit code from NACE Rev. 2. I obtain similar results if I use the one-letter code, which splits the economy into 22 industries.

mance, not controlling for severe losses. The positive coefficient on *After inheritance* suggests that entrepreneurs who do not experience persistently low performance are more likely to restart after receiving windfall wealth.[39] In comparison, the negative coefficient on *After inheritance* × *Low past performance* indicates that experiencing persistently low performance decreases the probability of owning a business after bankruptcy by about 17 percentage points per year. The differential response across past performance is consistent with the model of entrepreneurs in which they learn about their entrepreneurial ability upon entry and failure (e.g., Jovanovic 1982; Ayotte 2007; Dillon and Stanton 2017).

In Column 2, I examine the effect of severe losses after controlling for low relative performance. The coefficient on *After inheritance* × *Severe income loss* suggests that experiencing severe losses still has similar negative effects on serial entrepreneurship for those who inherit, while the lack of such experience offsets them. This result implies that severe losses are a personal experience distinct from low relative performance. In Columns 3 and 4, I find similar results when I use the alternative measures of severe losses, *Business debt chapter* or *Full personal liability*. Overall, these results confirm that experiencing severe losses is distinct from low entrepreneurial quality.

[Table 8 about here.]

Severe losses versus long tenure in business I address the potential concern that experiencing severe losses may be positively correlated with tenure in the failed business. In Appendix Table A.4, I find that having above-median tenure in ULCs before bankruptcy (greater than or equal to four years) does not subsume the effect of severe losses. This finding suggests that experiencing severe losses is not a mechanical result from having a long entrepreneurial spell.

The role of age at bankruptcy As shown in Table 1, the treated group in my matched sample is on average four years older than the full sample of bankrupt entrepreneurs.

[39] To save space, I only report results using the simple binary indicator for inheritances, *After inheritance*.

This age difference is not surprising, as one enters the treatment group when their last living parent dies. Nevertheless, a potential concern is that the older age of the matched sample might lead to an underestimation of the true effect of wealth protection in bankruptcy for the broader sample. For instance, if older individuals have a lower propensity to become entrepreneurs, they may be less likely to respond to increased wealth protection by starting new businesses, which could explain the null effect of inheritances in Table 3.

I address this concern in two ways. First, I find that age, as a control variable in Table 3, does not significantly affect the probability of restarting in the main sample. Second, I conduct additional tests to evaluate whether the response to inheritance depends on age. Specifically, I employ two approaches: First, I test for a potential negative linear effect of age by interacting the binary indicator for post-inheritance events with the individual's age at bankruptcy. Second, I test for a potential non-linear effect by using the indicator variable *Above median age*, which equals one for individuals above the median age at bankruptcy (48.5 years old) and interact it with the post-inheritance indicator. I then repeat the baseline estimation using these two measures. The results, presented in Appendix Table A.5, show that age does not have a statistically significant effect on the probability of restarting among entrepreneurs who receive inheritances. This finding suggests that, within my sample of bankrupt entrepreneurs, receiving an inheritance at an older age is not associated with a lower propensity to restart. Taken together, the evidence indicates that the age composition of my matched sample is unlikely to be driving the null effect in Table 3.

Effect of severe income loss across bankruptcy chapters In Appendix Table A.6, I address the possibility that the effect of severe income loss may differ across bankruptcy chapters. One may worry that failed entrepreneurs under the business debt chapter may have different unobservable characteristics from those under the ordinary chapter, re-

sulting in a null effect of severe income loss on serial entrepreneurship. To tackle this concern, I split the sample by bankruptcy chapters and estimate Equation 3, separately for each sample. I find that the effect of severe income loss is similar in economic magnitude across both samples. The similar effect in both chapters suggests that the experience of severe income loss is not subsumed by that of severe indebtedness.

6 Conclusion

Existing studies document that a higher level of wealth protection in personal bankruptcy is associated with an increase in first-time entrepreneurship (Fan and White 2003; Armour and Cumming 2008; Cerqueiro et al. 2019). In comparison to these studies, I find that such a relation does not hold among *failed* entrepreneurs, exploiting windfall wealth from inheritances to generate exogenous variation in the wealth protected in bankruptcy. My results further show that the muted response to increased wealth protection is driven by entrepreneurs who experienced severe losses from business failure. Additionally, the entrepreneurs who do respond to increases in wealth protection tend to earn less in their new business.

My study has implications for policy discussions about providing a second chance for failed entrepreneurs after bankruptcy. My findings suggest increasing wealth protection in personal bankruptcy provides entrepreneurs a second chance, but the effect is limited by personal experience of severe losses. Moreover, prior research documents the potential costs of such policies, such as credit rationing and higher interest rates for other entrepreneurs in the economy. Collectively, my findings inform the policy debate on whether increasing wealth protection is effective at fostering high-quality serial entrepreneurship.

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Figure 1: Distribution of inheritance amounts

This figure reports the distribution of inheritance amounts. The top panel shows the distribution of inherited wealth according to six bins. The first bin represents the share of individuals who receive an inheritance of a positive amount, but less than 10,000 DKK. The second bin comprises of those receive 10,001 and 25,000 DKK. Similarly, the third, fourth, fifth bins represent those who receive 25,001 to 100,000 DKK, 100,001 to 250,000 DKK, and 250,001 to 500,000 DKK, respectively. The sixth bin comprises those who receive more than 500,000 DKK. Inherited wealth is measured in year-2015 DKK. One Euro is equivalent to DKK 7.45. The bottom panel reports the distribution of the ratio of inherited wealth to dischargeable debt according to four bins. Dischargeable debt is defined as unsecured debt measured at one year before the year of bankruptcy.

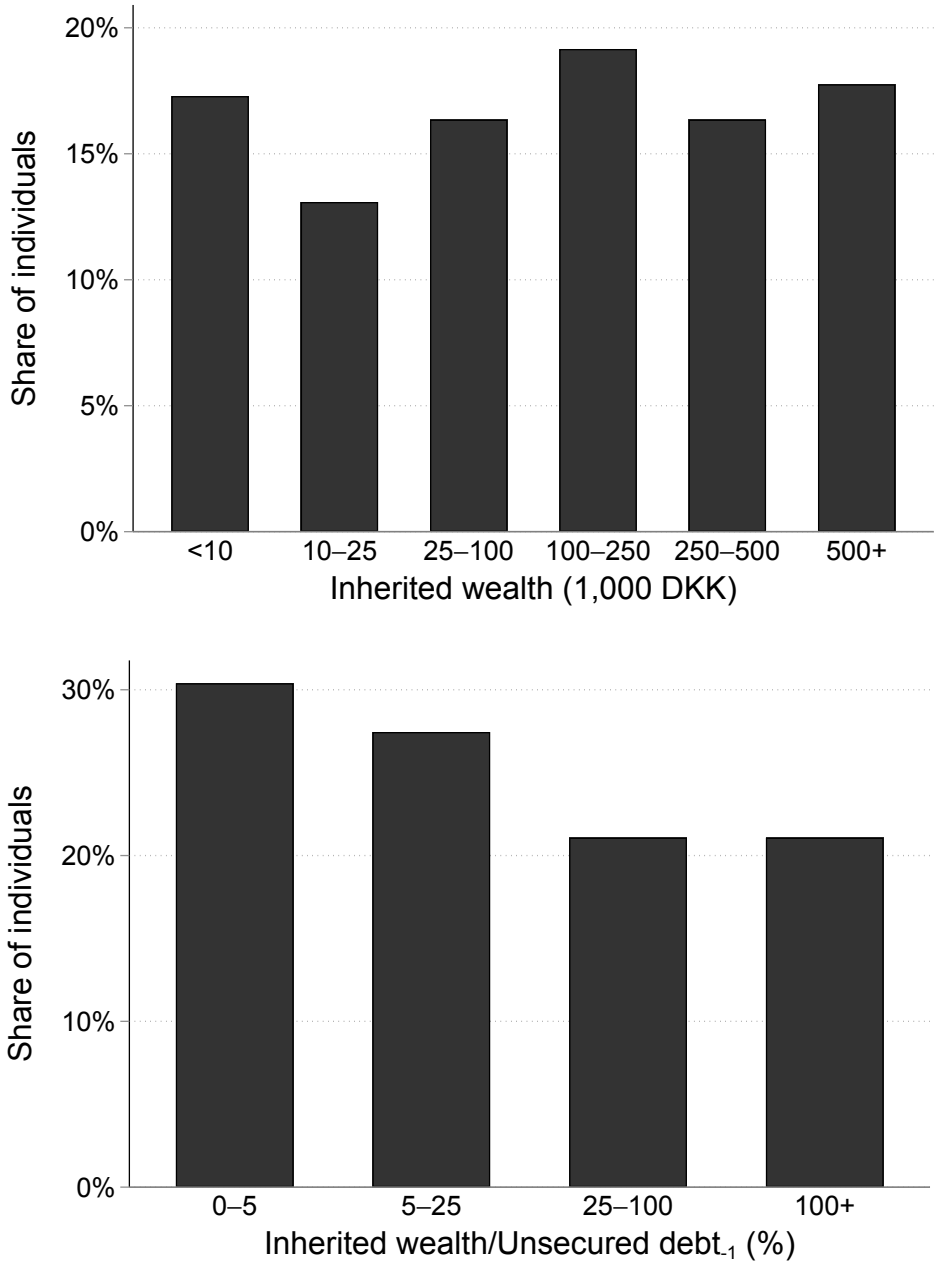


Figure 2: Net wealth around bankruptcy and inheritance

This figure plots the dynamics of average net wealth, defined as the difference between total assets and total debts. The horizontal axis shows the years since bankruptcy, with year 0 denoting the year in which the court issues a bankruptcy ruling. The solid line refers to bankrupt individuals who receive an inheritance between event years 0 and 3 (referred to as the 'treated group'). The dashed line refers to a control group of bankrupt individuals who do not receive an inheritance; this group is matched to the treated group based on the following characteristics: the same bankruptcy year, bankruptcy chapter, and gender, similar age at the time of the ruling (± 1 year), and net wealth at event year -1. The shaded area between event years 0 and 3 represents the treatment window, during which inheritance events occur. Net wealth is measured in thousands of 2015 DKK (1 Euro $\approx$ DKK 7.45).

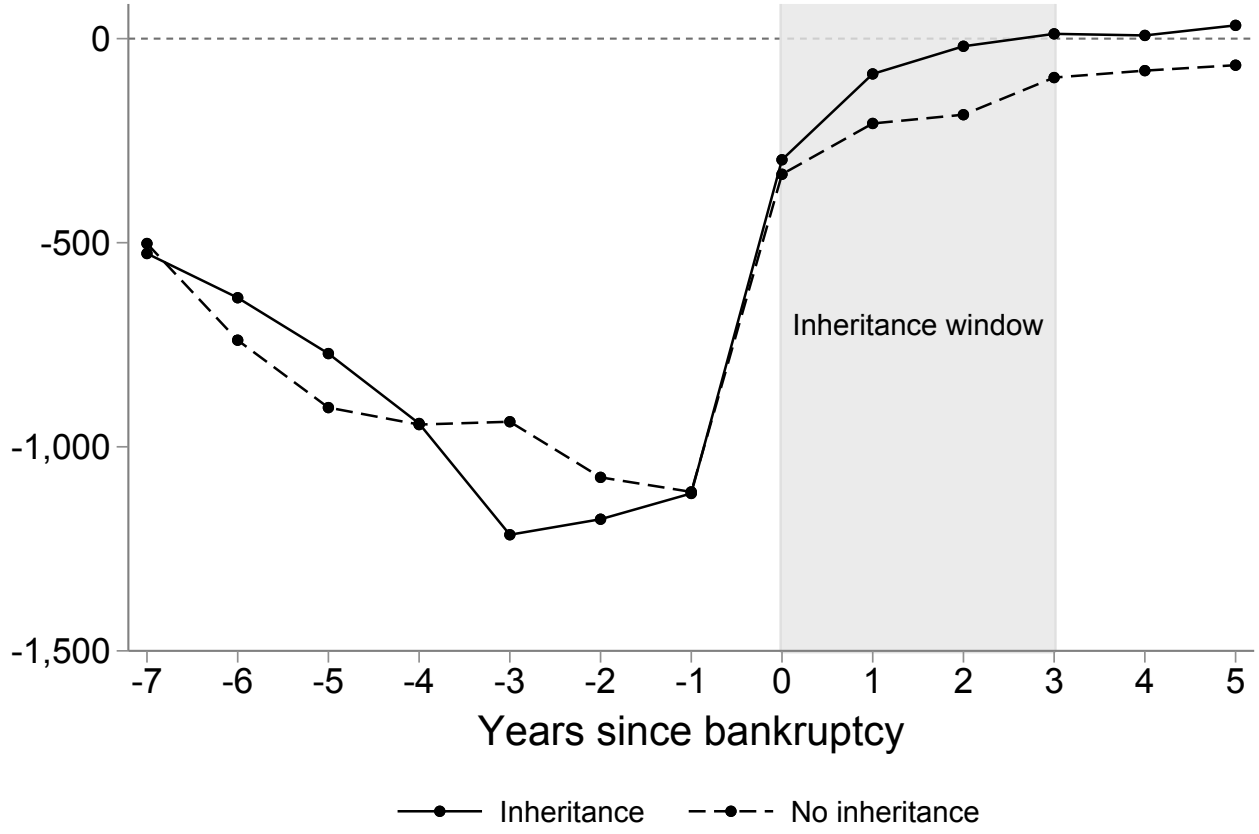


Figure 3: Entrepreneurship around bankruptcy

This figure plots the dynamics of the share of individuals who own a business. The horizontal axis shows the years since bankruptcy, with year 0 denoting the year in which the court issues a bankruptcy ruling. The solid line represents bankrupt individuals who receive an inheritance between event years 0 and 3 (the "treated group"). The dashed line refers to a control group of bankrupt individuals who do not receive an inheritance; this group is matched to the treated group based on the following characteristics: the same bankruptcy year, bankruptcy chapter, and gender and is of a similar age at the time of the ruling (± 1 year) with similar net wealth at event year -1. The shaded area between event years 0 and 3 represents the treatment window, during which inheritance events occur.

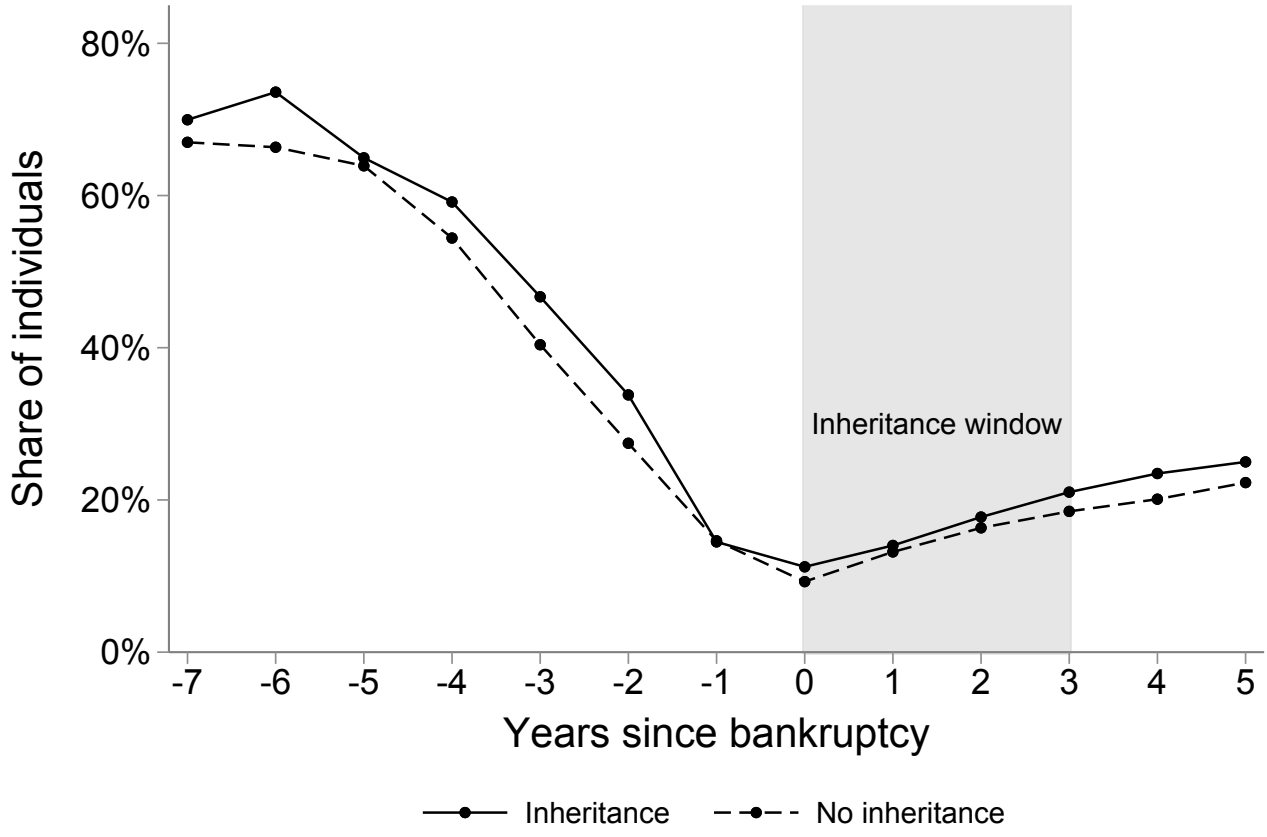
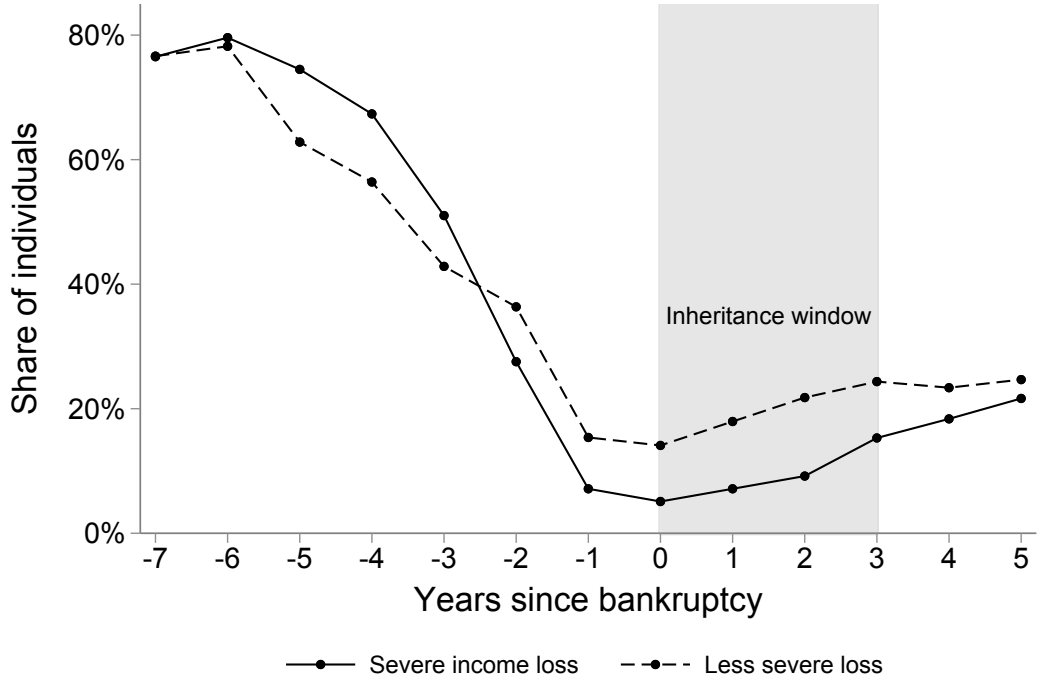


Figure 4: Severe losses and entrepreneurship around bankruptcy

This figure plots the dynamics of the share of individuals who own a business, focusing on those who receive an inheritance between event years 0 and 3 (the treated group). The top panel plots the dynamics split by whether the individual in the treated group experiences negative entrepreneurial income before bankruptcy. The bottom panel plots the dynamics split by whether the individual in the treated group files for bankruptcy under the business debt chapter, which is available for entrepreneurs with large business debts. Similar figures based on the third measure of severe losses (*Full personal liability*) and those based on the control group are reported in Appendix Figures A.4 and A.5, respectively.



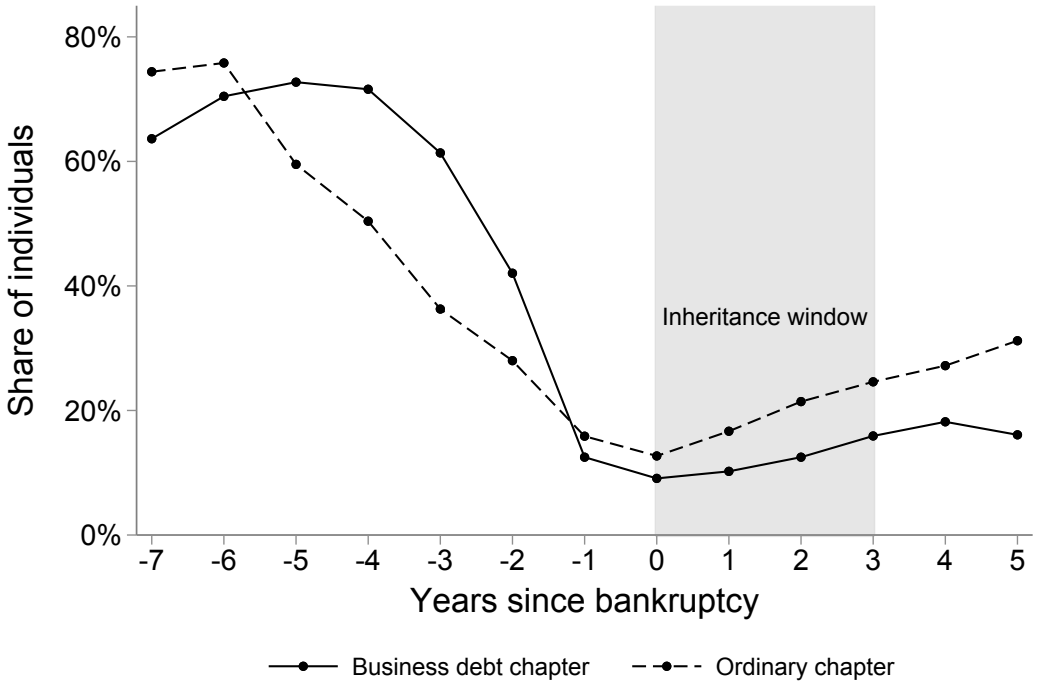


Figure 5: Income before and during entrepreneurship

This figure plots averages of labor and entrepreneurial income for the matched sample. The sample consists of two types of individuals: (1) those who restart a business after bankruptcy, referred to as "serial entrepreneurs," and (2) the matched sample of individuals who start a business for the first time and have not experienced bankruptcy, referred to as "first-time entrepreneurs." First-time entrepreneurs are of a similar age ($\pm$1 year) and have the same gender, years of education, and incorporation choice; they have similar pre-entrepreneurial labor income; and they start their businesses at the same time that the serial entrepreneurs restart. I observe individuals from the year of (re)starting a business up to five years afterward. For each type of entrepreneur, the figure reports averages of labor and entrepreneurial income that are (a) measured over the three years before entrepreneurship (labelled "Before entrepreneurship") and (b) measured over all years during entrepreneurship (labelled "During entrepreneurship"). One Euro is equivalent to DKK 7.45. The light grey bars represent serial entrepreneurs who receive an inheritance, and the dark grey bars correspond to first-time entrepreneurs matched to them. Black bars indicate the difference in income levels between the light and dark grey bars.

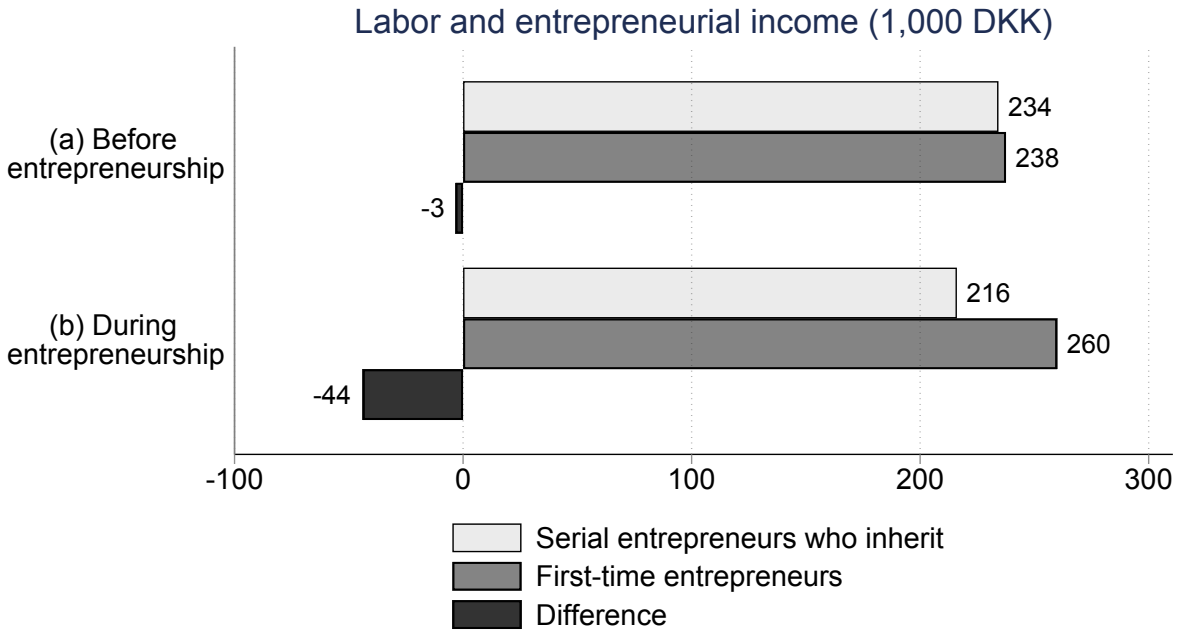


Table 1: Summary statistics

This table presents the mean and standard deviation of the main variables for the sample of entrepreneurs who go bankrupt between 2006 and 2016. Each column refers to one of the three groups of individuals in my sample: (a) all bankrupt entrepreneurs, (b) the "treated group" of entrepreneurs who receive an inheritance between the year of bankruptcy and three years afterward, and (c) the "control group," which consists of entrepreneurs who do not receive an inheritance after bankruptcy and are matched to the treated group using procedures outlined in Section 3.3. For every variable, I compute the difference in average characteristics between the treated and control groups and test whether this difference is statistically different from zero. The variables in this table are measured at the year of bankruptcy, except for those in Panel A. Panel A reports net wealth and total income, each measured at one year before bankruptcy and in thousands of 2015 DKK (1 Euro $\approx$ DKK 7.45). Panel B presents demographic data. Panel C reports the ruling bankruptcy chapter (business debt or ordinary chapters) and the discharge ratio (the share of debt discharged in bankruptcy to total unsecured debt). Panel D reports business experience from seven years to one year before bankruptcy, such as indicators for ownership of limited or unlimited liability companies. *Severe income loss* is an indicator variable equal to one if the individual experiences negative entrepreneurial income before bankruptcy. *Low past performance* is an indicator variable equal to one if the individual's annual entrepreneurial income has always remained in the bottom decile in the industry before bankruptcy. Standard deviations are in parentheses, and *t*-statistics are in brackets.

	All	Matched sample		Difference
		Treated (1)	Control (2)	(1)-(2)
A. Wealth and income (1,000 DKK)				
Pre-bankruptcy wealth	-1,200.7	-1,114.3	-1,110.5	-3.8
	(2,152.0)	(1,780.2)	(1,806.6)	[-0.0]
Pre-bankruptcy income	282.4	280.3	282.4	-2.1
	(137.9)	(126.4)	(134.6)	[-0.2]
B. Individual characteristics				
Age	43.8	47.6	47.4	0.2
	(8.4)	(6.9)	(6.8)	[0.3]
Male (%)	73.1	80.4	80.0	0.4
	(44.4)	(39.8)	(40.1)	[0.1]
Years of education	11.7	11.7	11.5	0.2
	(1.8)	(1.9)	(1.9)	[1.2]
C. Bankruptcy case characteristics				
Business debt chapter (%)	45.7	41.1	40.0	1.1
	(49.8)	(49.3)	(49.1)	[0.2]
Discharge ratio (%)	91.0	90.3	92.1	-1.8
	(13.5)	(14.6)	(11.3)	[-1.4]
D. Pre-bankruptcy personal business experience				
Pre-bankruptcy LLC owner (%)	18.4	21.0	19.0	2.0
	(38.7)	(40.8)	(39.3)	[0.5]
Pre-bankruptcy ULC owner (%)	82.8	82.2	81.0	1.3
	(37.8)	(38.3)	(39.3)	[0.3]
Severe income loss (%)	61.6	55.7	62.7	-7.0
	(48.6)	(49.8)	(48.5)	[-1.3]
Low past performance (%)	4.4	2.2	2.5	-0.2
	(20.6)	(14.8)	(15.5)	[-0.1]
Number of individuals	4,851	214	205	

Table 2: Inheritance as a proxy for wealth protected in bankruptcy

This table reports estimates from OLS regressions, examining the effect of post-bankruptcy inheritances on the levels of net wealth, total debt, and total assets (measured in thousands of 2015 DKK, where 1 Euro $\approx$ DKK 7.45), and the logarithms of total debt and of total assets, respectively. The control group consists of individuals of the same bankruptcy year, bankruptcy chapter, gender, and similar age ($\pm$ 1 year) and net wealth. The sample includes observations from seven years before bankruptcy until five years after. *After bankruptcy discharge* (*After inheritance*) is an indicator variable equal to one for years following the individual's bankruptcy (inheritance event). I use inheritance events that occur between the year of bankruptcy and three years after. Other control variables are defined in Table 1. All columns include individual, calendar-year, and age-group (dummies for every five-year bin of age) fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) Net wealth	(2) Total debt	(3) Total assets	(4) Log(total debt)	(5) Log(total assets)
After bankruptcy discharge	909.2***	-1,303.1***	-337.1***	-1.65***	-0.16
	(10.29)	(-9.81)	(-5.02)	(-17.09)	(-1.35)
After inheritance	269.3**	-142.0	143.9	-0.16	0.64***
	(2.57)	(-0.60)	(0.88)	(-1.15)	(3.84)
Individual fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Age group fixed effects	Yes	Yes	Yes	Yes	Yes
R^2	0.11	0.15	0.10	0.31	0.07
Individual-year observations	5,400	5,400	5,400	5,001	5,193

Table 3: Wealth protected in bankruptcy and serial entrepreneurship

This table reports the regression results from a linear probability model examining the effect of post-bankruptcy inheritances on the probability of owning a business. The dependent variable, *Owner*, is an indicator variable equal to one if the individual owns any company in the year. The primary independent variable, *After inheritance*, is an indicator variable equal to one for years following the individual's inheritance event. *After inheritance* × *Inherited wealth* is equal to the amount of inherited wealth (measured in millions of 2015 DKK) in post-inheritance years, and zero otherwise. *After inheritance* × *Large inheritance* is an indicator variable equal to one for individuals receiving an above-median inheritance in the years following the inheritance event, and zero otherwise. The sample consists of individuals from the treated and control groups, from the year of bankruptcy until five years afterward. Control variables are defined in Table 1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
After inheritance	0.048		0.054
	(1.64)		(1.39)
After inheritance × Inherited wealth		0.055	
		(1.03)	
After inheritance × Large inheritance			-0.012
			(-0.24)
Business debt chapter	-0.062*	-0.060*	-0.061*
	(-1.83)	(-1.79)	(-1.82)
Discharge ratio	0.002**	0.002**	0.002**
	(2.39)	(2.32)	(2.41)
Pre-bankruptcy wealth	-0.000*	-0.000*	-0.000*
	(-1.78)	(-1.73)	(-1.79)
Pre-bankruptcy income	-0.000	-0.000*	-0.000
	(-1.61)	(-1.66)	(-1.60)
Age	-0.000	-0.001	-0.000
	(-0.18)	(-0.23)	(-0.16)
Male	0.101***	0.104***	0.100***
	(3.14)	(3.25)	(3.09)
Years of education	0.019**	0.020**	0.020**
	(2.29)	(2.34)	(2.29)
Year fixed effects	Yes	Yes	Yes
R^2	0.06	0.06	0.06
Individual-year observations	2,480	2,480	2,480

Table 4: Experiencing severe income losses and serial entrepreneurship

This table reports the regression results from a linear probability model examining the effect of experiencing severe income losses on the probability of owning a business after bankruptcy. The dependent variable, *Owner*, is an indicator variable equal to one if the individual owns any company in the year. The primary independent variable, *After inheritance*, is an indicator variable equal to one for years following the individual's inheritance event. The interacted variable, *Severe income loss*, is an indicator variable equal to one if the individual experiences negative entrepreneurial income before bankruptcy. By construction, this measure is defined only for those who have owned unlimited liability companies before bankruptcy. *After inheritance* × *Inherited wealth* is equal to the amount of inherited wealth (measured in millions of 2015 DKK) in post-inheritance years, and zero otherwise. *After inheritance* × *Large inheritance* is an indicator variable equal to one for individuals receiving an above-median inheritance in the years following the inheritance event, and zero otherwise. The sample consists of individuals from the treated and control groups, from the year of bankruptcy until five years afterward. Control variables are defined in Table 1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
After inheritance	0.131***		0.149**
	(2.78)		(2.38)
After inheritance × Severe income loss	-0.136**		-0.145*
	(-2.31)		(-1.81)
After inheritance × Inherited wealth		0.190***	
		(6.01)	
After inheritance × Inherited wealth × Severe income loss		-0.206***	
		(-5.87)	
After inheritance × Large inheritance			-0.040
			(-0.43)
After inheritance × Large inheritance × Severe income loss			0.023
			(0.20)
Severe income loss	0.056*	0.030	0.055*
	(1.68)	(0.94)	(1.68)
Business debt chapter	-0.027	-0.027	-0.026
	(-0.71)	(-0.69)	(-0.68)
Discharge ratio	0.001	0.001	0.001
	(1.56)	(1.42)	(1.53)
Pre-bankruptcy wealth	-0.000	-0.000	-0.000
	(-1.03)	(-1.04)	(-1.04)
Pre-bankruptcy income	-0.000**	-0.000**	-0.000**
	(-2.46)	(-2.50)	(-2.47)
Age	0.000	0.000	0.000
	(0.07)	(0.12)	(0.11)
Male	0.051	0.055	0.050
	(1.28)	(1.38)	(1.24)
Years of education	0.019*	0.021**	0.019*
	(1.93)	(2.20)	(1.93)
Year fixed effects	Yes	Yes	Yes
R^2	0.05	0.07	0.05
Individual-year observations	2,018	2,018	2,018

Table 5: Experiencing severe indebtedness and serial entrepreneurship

This table reports the regression results from a linear probability model examining the effect of experiencing severe indebtedness from entrepreneurship on the probability of owning a business after bankruptcy. The dependent variable, *Owner*, is an indicator variable equal to one if the individual owns any company in the year. The primary independent variable, *After inheritance*, is an indicator variable equal to one for years following the individual's inheritance event. The interacted variable, *Business debt chapter*, is an indicator variable equal to one if the individual files for bankruptcy under the business debt chapter, which is available for entrepreneurs with large business debts. *After inheritance* × *Inherited wealth* is equal to the amount of inherited wealth (measured in millions of 2015 DKK) in post-inheritance years, and zero otherwise. *After inheritance* × *Large inheritance* is an indicator variable equal to one for individuals receiving an above-median inheritance in the years following the inheritance event, and zero otherwise. The sample consists of individuals from the treated and control groups, from the year of bankruptcy until five years afterward. Control variables are defined in Table 1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
After inheritance	0.103***		0.099**
	(2.75)		(1.98)
After inheritance × Business debt chapter	-0.132**		-0.111
	(-2.31)		(-1.42)
After inheritance × Inherited wealth		0.060	
		(1.04)	
After inheritance × Inherited wealth × Business debt chapter		-0.091	
		(-0.56)	
After inheritance × Large inheritance			0.007
			(0.10)
After inheritance × Large inheritance × Business debt chapter			-0.040
			(-0.41)
Business debt chapter	-0.014	-0.053	-0.014
	(-0.37)	(-1.50)	(-0.36)
Discharge ratio	0.002**	0.002**	0.002**
	(2.35)	(2.31)	(2.35)
Pre-bankruptcy wealth	-0.000*	-0.000*	-0.000*
	(-1.77)	(-1.73)	(-1.78)
Pre-bankruptcy income	-0.000	-0.000	-0.000
	(-1.54)	(-1.63)	(-1.54)
Age	-0.000	-0.000	-0.000
	(-0.15)	(-0.18)	(-0.11)
Male	0.101***	0.104***	0.100***
	(3.15)	(3.23)	(3.10)
Years of education	0.020**	0.020**	0.020**
	(2.30)	(2.35)	(2.29)
Year fixed effects	Yes	Yes	Yes
R^2	0.06	0.06	0.06
Individual-year observations	2,480	2,480	2,480

Table 6: Experiencing *full* personal liability from business failure and serial entrepreneurship

This table reports the regression results from a linear probability model examining the effect of experiencing *full* personal liability from business failure on the probability of owning a business after bankruptcy. The dependent variable, *Owner*, is an indicator variable equal to one if the individual owns any company in the year. The primary independent variable, *After inheritance*, is an indicator variable equal to one for years following the individual's inheritance event. The interacted variable, *Full personal liability*, is an indicator variable equal to one if the individual solely owned an unlimited liability company prior to bankruptcy, as opposed to owning a limited liability company. *After inheritance* × *Inherited wealth* is equal to the amount of inherited wealth (measured in millions of 2015 DKK) in post-inheritance years, and zero otherwise. *After inheritance* × *Large inheritance* is an indicator variable equal to one for individuals receiving an above-median inheritance in the years following the inheritance event, and zero otherwise. The sample consists of individuals from the treated and control groups, from the year of bankruptcy until five years afterward. Control variables are defined in Table 1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
After inheritance	0.126		0.217**
	(1.64)		(2.12)
After inheritance × Full personal liability	-0.102		-0.194*
	(-1.27)		(-1.80)
After inheritance × Inherited wealth		0.131***	
		(3.84)	
After inheritance × Inherited wealth × Full personal liability		-0.121***	
		(-2.79)	
After inheritance × Large inheritance			-0.155
			(-1.21)
After inheritance × Large inheritance × Full personal liability			0.159
			(1.17)
Full personal liability	-0.216***	-0.234***	-0.216***
	(-3.85)	(-4.68)	(-3.85)
Business debt chapter	-0.052	-0.051	-0.052
	(-1.62)	(-1.59)	(-1.62)
Discharge ratio	0.002**	0.001*	0.002**
	(1.98)	(1.77)	(1.98)
Pre-bankruptcy wealth	-0.000	-0.000	-0.000
	(-1.16)	(-1.15)	(-1.13)
Pre-bankruptcy income	-0.000**	-0.000**	-0.000*
	(-2.05)	(-2.15)	(-1.92)
Age	-0.002	-0.002	-0.002
	(-1.05)	(-0.91)	(-1.02)
Male	0.090***	0.090***	0.086***
	(2.83)	(2.90)	(2.72)
Years of education	0.014	0.015*	0.013
	(1.56)	(1.68)	(1.54)
Year fixed effects	Yes	Yes	Yes
R^2	0.13	0.13	0.13
Individual-year observations	2,480	2,480	2,480

Table 7: Returns to post-bankruptcy serial entrepreneurship

This table reports estimates from OLS regressions examining the effect of post-bankruptcy inheritances on entrepreneurial profit in the matched sample. The matched sample consists of two types of individuals: (1) those who restart a business after bankruptcy (referred to as "serial entrepreneurs") and (2) the matched sample of individuals who start a business for the first time and do not experience bankruptcy (referred to as "first-time entrepreneurs"). First-time entrepreneurs are of similar age ($\pm$1 year) and have the same gender, years of education, and incorporation choice; they have similar pre-entrepreneurial labor income; and they start their businesses at the same time as the serial entrepreneurs restart. I observe individuals from the year of (re)starting a business to five years afterward. The dependent variable, *Labor and entrepreneurial income*, is the level of labor and entrepreneurial income (measured in thousands of 2015 DKK, where 1 Euro $\approx$ DKK 7.45). In Columns 1–3, I include all individual-year observations, and in Columns 4–6, I limit the sample to observations where the business survives. The primary independent variable, *After inheritance*, is an indicator variable equal to one for years following the individual's inheritance event. *After inheritance* $\times$ *Inherited wealth* is equal to the amount of inherited wealth (measured in millions of 2015 DKK) in post-inheritance years, and zero otherwise. *After inheritance* $\times$ *Large inheritance* is an indicator variable equal to one for individuals receiving an above-median inheritance in the years following the inheritance event, and zero otherwise. *Past bankruptcy* is an indicator variable equal to one for all serial entrepreneurs in the matched sample. Control variables are defined in Appendix Table A.1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and t-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Labor and entrepreneurial income			Labor and entrepreneurial income (conditional on survival)		
	(1)	(2)	(3)	(4)	(5)	(6)
After inheritance	-63.8***		-34.8	-59.8**		-31.9
	(-2.64)		(-1.20)	(-2.28)		(-1.02)
After inheritance $\times$ Inherited wealth		-43.1***			-41.1***	
		(-2.91)			(-2.75)	
After inheritance $\times$ Large inheritance			-61.7**			-60.4*
			(-2.00)			(-1.91)
Past bankruptcy	-10.4	-31.2	-11.0	-5.5	-26.3	-6.0
	(-0.30)	(-1.00)	(-0.32)	(-0.14)	(-0.76)	(-0.15)
Pre-entrepreneurial wealth	0.0	0.0	0.0	0.0	0.0	-0.0
	(0.39)	(0.43)	(0.12)	(0.22)	(0.26)	(-0.08)
Pre-entrepreneurial labor income	0.7***	0.7***	0.7***	0.8***	0.8***	0.8***
	(10.90)	(10.73)	(11.16)	(10.48)	(10.30)	(10.75)
Age	-1.1	-1.2	-1.0	0.2	0.1	0.3
	(-0.72)	(-0.79)	(-0.68)	(0.11)	(0.06)	(0.17)
Male	17.1	14.8	16.4	19.8	18.3	18.7
	(0.66)	(0.58)	(0.63)	(0.72)	(0.67)	(0.68)
Years of education	0.6	0.1	0.6	0.1	-0.5	-0.0
	(0.14)	(0.01)	(0.14)	(0.02)	(-0.10)	(-0.00)
Starting a limited liability company	51.0**	55.0**	53.2**	50.5**	56.3**	54.0**
	(2.37)	(2.52)	(2.49)	(2.08)	(2.30)	(2.24)
Years of business experience	7.0**	7.0**	7.0**	6.4*	6.6*	6.3*
	(2.15)	(2.12)	(2.15)	(1.73)	(1.77)	(1.72)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.43	0.43	0.44	0.44	0.43	0.44
Individual-year observations	1,213	1,213	1,213	998	998	998

Table 8: Comparing low entrepreneurial quality versus experience of severe losses

This table reports the regression results from a linear probability model examining the effects of experiencing low relative performance in the past and severe losses from prior entrepreneurship on the probability of owning a business after bankruptcy. The dependent variable, *Owner*, is an indicator variable equal to one if the individual owns any company in the year. The primary independent variable, *After inheritance*, is an indicator variable equal to one for years following the individual's inheritance event. The first interacted variable, *Low past performance*, is an indicator variable equal to one if the individual's annual entrepreneurial income has always remained at the bottom decile in the industry before bankruptcy. The second interacted variable, *Severe income loss*, is an indicator variable equal to one if the individual experiences negative entrepreneurial income before bankruptcy. The third interacted variable, *Business debt chapter*, is an indicator variable equal to one if the individual files for bankruptcy under the business debt chapter. The fourth interacted variable, *Full personal liability*, is an indicator variable equal to one if the individual solely owned an unlimited liability company prior to bankruptcy, as opposed to owning a limited liability company. The sample consists of individuals from the treated and control groups, from the year of bankruptcy until five years afterward. Control variables are defined in Table 1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
After inheritance	0.054*	0.126***	0.103***	0.117
	(1.69)	(2.69)	(2.63)	(1.22)
After inheritance × Low past performance	-0.167*	-0.162	-0.217**	-0.145
	(-1.81)	(-1.60)	(-2.31)	(-1.59)
After inheritance × Severe income loss		-0.129**		
		(-2.19)		
After inheritance × Business debt chapter			-0.125*	
			(-1.95)	
After inheritance × Full personal liability				-0.086
				(-0.86)
Low past performance	-0.049	-0.037	-0.030	-0.021
	(-0.59)	(-0.40)	(-0.37)	(-0.24)
Severe income loss		0.058*		
		(1.65)		
Business debt chapter	-0.049	-0.040	-0.002	-0.048
	(-1.25)	(-1.00)	(-0.05)	(-1.30)
Full personal liability				-0.258***
				(-3.63)
Discharge ratio	0.002**	0.001	0.002*	0.001*
	(2.03)	(1.58)	(1.95)	(1.73)
Pre-bankruptcy wealth	-0.000	-0.000	-0.000	-0.000
	(-1.47)	(-1.07)	(-1.45)	(-0.63)
Pre-bankruptcy income	-0.000***	-0.000**	-0.000***	-0.000***
	(-2.69)	(-2.46)	(-2.62)	(-2.87)
Age	-0.000	0.000	-0.000	-0.002
	(-0.15)	(0.03)	(-0.17)	(-0.80)
Male	0.071*	0.053	0.071*	0.063
	(1.71)	(1.25)	(1.72)	(1.56)
Years of education	0.024**	0.018*	0.024**	0.014
	(2.55)	(1.79)	(2.50)	(1.45)
Year fixed effects	Yes	Yes	Yes	Yes
R^2	0.06	0.05	0.07	0.13
Individual-year observations	2,022	1,902	2,022	2,022

A Appendix

A.1 Detailed procedures in bankruptcy proceedings

Liquidation proceedings for individual debtors (*personlig konkurs*) Under liquidation proceedings for private individuals, debtors liquidate their assets to pay the debt. Liquidation proceedings can be filed by either a debtor or creditor. During my sample period, it costs DKK 750 to file for bankruptcy. In addition, the filer must provide security of DKK 30,000 to cover the administrative costs. If the court decides that the debtor is insolvent, i.e., has no ability to meet debt obligations (of either secured or unsecured debt), it issues a liquidation decree. The court then appoints a trustee who collects and sells the assets owned by the debtor. All assets that are deemed not necessary to have a modest home and live a modest life will be liquidated. The proceeds from the sale are used to repay debt. Importantly, liquidation does not automatically discharge the remaining unpaid debt. To receive the discharge, debtors need to apply separately for bankruptcy proceedings.

Bankruptcy proceedings (*gældssanering*) Bankruptcy proceedings begin when the debtor files with the court in the jurisdiction where he or she lives. There is no fee associated with filing. Upon submission, the debtor is mandated to provide a comprehensive disclosure of their financial situation to the court, including any prospective inheritances or renunciations thereof (Hindborg 2017, pp. 59–60). The court reviews the filing and will dismiss it if it fails to meet the requirements for bankruptcy protection. Key requirements include the following: the majority of debt should *not* consist of debts for private consumption purposes; the debtor must not have engaged in financially irresponsible behavior, such as accumulating debt without attempts at repayment; and the debtor must have a stable financial situation, characterized by a reliable income stream from regular employment and no expected wealth gains. According to Kilborn (2009), about 60% of filings are dismissed at this stage. Filing dismissals are not announced on the State

Gazette.

If the requirements are met, the court formally opens a bankruptcy case and announces the opening on the State Gazette. After opening the case, the court summons creditors to submit claims and asks the debtor to submit a repayment plan. Under the repayment plan, the debtor uses all disposable income to pay part of the unsecured debt. The installments are paid monthly and last three to five years. If the plan is feasible, the court accepts it and issues the ruling for bankruptcy, which discharges any remaining unpaid debt.[40] In my sample, about 10% of cases are rejected at this stage. The ruling is announced on the State Gazette. After the ruling, debtors are allowed to shorten the repayment duration by paying all or part of the installments at once. The source of such down payment can be, for example, a loan from a third party or cash windfalls. In addition, a ruling can be cancelled if the debtor grossly neglects the duty (e.g., failing to repay installments) or if the court or a creditor discovers that the debtor failed to disclose material information to creditors (e.g., concealing information about anticipated increases in wealth or income at filing). The cancellation of a ruling is announced on the State Gazette.

Other differences between ordinary and business debt chapters While bankruptcies under either ordinary or business debt chapters follow similar court procedures, they differ in both filing requirements and consequences after ruling.[41] Here, I list other differences between them that are not mentioned in Section 2 of the main text. First, following a ruling under the business debt chapter, the debtor is prohibited from filing for bankruptcy under the same chapter for a subsequent 10-year period. Second, if a debtor under the business debt chapter did not have stable income at the time the plan was approved, upon subsequent acquisition of a stable income source (due to a new job or business comeback), the court may modify the repayment terms to increase the repayment

[40] If the court considers the debtor to have no ability to pay, such as due to a permanent illness, then the debtor may receive an immediate discharge from the entire unsecured debt.

[41] Bankruptcy under business debt chapter is commonly referred to as bankruptcy in connection with liquidation (*gældssanering i forbindelse med konkurs)* in Denmark, as it requires the debtor to be under liquidation proceeding before filing for bankruptcy.

amount.

A.2 Identifying inheritances from administrative registers

I outline the procedure for identifying inheritance events. I follow Andersen and Nielsen (2012) and Larsen et al. (2023), who capture inheritance events by combining several administrative registers in Denmark. The only difference from Andersen and Nielsen (2012) is that I examine all types of parental deaths, rather than sudden deaths.

The starting point is to identify deceased parents who cause a termination of the household. Terminations occur when the deceased has no spouse (a widow, widower, divorced, or never married) or both parents die in the same calendar year. For measuring the size of inheritances, I use wealth of the deceased parent(s) at the end of the year preceding death. I aggregate both parents' wealth if they die in the same year. This procedure generates the size of the estate.

Next, I only retain estates with positive wealth, discarding ones with zero or negative values. Estates with net worth exceeding DKK 242,400 in 2006 are subject to a 15% estate tax for children. This threshold is adjusted annually by a price index. Then, I link the estate to the children of the deceased who are over age 18 (beneficiaries). Following Andersen and Nielsen (2012), I restrict the sample to cases where all beneficiaries are children of the deceased. According to Danish inheritance law, inheritances are by default equally divided among children. I therefore equally divide the amount of the estate to yield the size of an inheritance.

In the final step, I link these inheritance events to the bankrupt entrepreneurs in my sample. I include parental deaths that occur after the bankruptcy ruling and up to three years after the year of ruling (event years 0, 1, 2, and 3).

A.3 Example of the State Gazette of Denmark

[Figure A.1 about here.]

[Figure A.2 about here.]

A.4 Matching serial entrepreneurs to first-time entrepreneurs

I start the matching procedure by identifying 123 failed entrepreneurs who restart after bankruptcy in my main sample (of which 65 individuals experience inheritance events). Next, for each failed entrepreneur who restarts after bankruptcy, I look for a first-time entrepreneur from the Danish population. To control for the individual's entrepreneurial quality, I match failed entrepreneurs who restart after bankruptcy (referred to as the "serial entrepreneurs") with those of similar characteristics who become entrepreneurs for the *first time* (the "first-time entrepreneurs"). The matching takes the following steps:

1. I require that the first-time entrepreneur starts a business in the same year and has the same incorporation choice (starting an unlimited or limited liability company), years of education, and gender, and is of a similar age (± 1 year) as the matched serial entrepreneur.
2. Among potential matches, I select the nearest neighbor based on pre-entrepreneurial income (averaged over three years before the entrepreneurship). I further refine the accuracy of matching by excluding matched pairs with substantial differences in income levels (an absolute difference exceeding 100,000 DKK and a relative difference exceeding 25%).

After matching, my matched sample consists of 110 unique serial entrepreneurs and 110 first-time entrepreneurs. I observe them from the year of starting a business through the five subsequent years.

I provide summary statistics of the matched sample in Appendix Table A.1. The variables are reported at the year of starting the business, except Panel A. Panel A reports levels of wealth and labor income before the start of entrepreneurship. Serial entrepreneurs have lower wealth than first-time business owners, which is expected because serial

entrepreneurs are typically in bankruptcy proceedings before restarting. In addition, in Panel C, the two types of entrepreneurs have different years of business experience. This difference in experience is because, by definition, first-time entrepreneurs have no prior business experience. Finally, Panel D shows that around 50% of serial entrepreneurs experience inheritance events. They are marginal entrepreneurs who respond to greater wealth protection and restart a business, and they are, therefore, the focus of second-chance policies.

[Table A.1 about here.]

[Table A.2 about here.]

A.5 Additional descriptive figures

[Figure A.3 about here.]

[Figure A.4 about here.]

[Figure A.5 about here.]

[Figure A.6 about here.]

A.6 Compare *within* bankrupt entrepreneurs who restart

In Section 4.4, I assess post-bankruptcy income levels of serial entrepreneurs by using a comparison group consisting of first-time entrepreneurs with similar characteristics. An alternative way to evaluate the marginal quality of serial entrepreneurs is to compare income levels *within* only bankrupt entrepreneurs. To this end, I return to my main sample that consists of treated and control groups of bankrupt entrepreneurs. Using all bankrupt entrepreneurs, I compare entrepreneurial profits for those who restart with and without receiving an inheritance. This within-group analysis helps answer whether greater wealth protection relaxes financial constraints of high-quality entrepreneurs.

I start with a descriptive analysis. Appendix Figure A.6 plots averages of the labor and entrepreneurial income of individuals who own or do not own a business, split by whether the individual receives an inheritance. The figure shows that, outside of entrepreneurship, individuals who receive an inheritance and those who do not have only a small difference in income. However, when they become entrepreneurs, the two groups exhibit a large difference, driven by decreased income among the treated group.

To more formally compare the returns to serial entrepreneurship between the treated and control groups, I estimate the following OLS regression:

$$Income_{it} = \alpha_y + \beta_1 After\ inheritance_{it} + \beta_2 Owner_{it} + \beta_3 After\ inheritance_{it} \times Owner_{it} + \gamma X'_{it} + \varepsilon_{it}, \tag{5}$$

where the dependent variable, $Income_{it}$, is the level of income of individual i in event year t. $Income_{it}$ is measured in two ways: *Labor and entrepreneurial income* and *Total income*. Similar to previous equations, I use three measures to capture the effects of wealth shocks: *After inheritance*, *After inheritance* $\times$ *Inherited wealth*, and *After inheritance* $\times$ *Large inheritance*. The interacted variable, $Owner_{it}$, is an indicator variable equal to one if individual i owns a business in event year t. As in previous equations, I include calendar-year fixed effects (α_y) and control variables X'_{it}. The coefficient of interest is β_3, which estimates the difference in income levels between serial entrepreneurs who receive inheritances and those who do not. Standard errors are clustered at the individual level.

Appendix Table A.3 reports the results estimating Equation 5. The results show that the marginal entrepreneurs earn less relative to entrepreneurs who do not receive inheritances. For example, in Column 1, the coefficient on *After inheritance* $\times$ *Owner* suggests that, individuals who own a business after inheritance events earn on average 65,000 DKK less entrepreneurial income for each year of entrepreneurship. In Columns 4–6, I find similarly lower total income. The economic magnitude represents about 20–30% less income, given that the average labor and entrepreneurial income or total income is 222,000

or 272,000 DKK for serial entrepreneurs who receive inheritances.

A.7 Additional robustness tests

In this subsection, I present results from additional robustness tests.

[Table A.3 about here.]

[Table A.4 about here.]

[Table A.5 about here.]

[Table A.6 about here.]

Figure A.1: Example of a front page of the State Gazette

This figure displays a sample front page from the State Gazette. The document index located in the bottom-right corner (outlined by a dotted line for emphasis) specifies the page numbers for various sections. For example, notices on bankruptcy and liquidation proceedings (*Gældssanering* and *Konkursboer*) are listed from pages 31 and 39, respectively.

STATSTIDENDE

NR. 174 09.09.2016 113 . ÅRGANG

Udgivet i henhold til lov nr. 419 af 31. maj 2000.

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INDHOLD (*Index*)

JUSTITSMINISTERIET
CIVILSTYRELSEN

Figure A.2: Example of bankruptcy notices published in the State Gazette

This figure displays a sample page of bankruptcy notices from the State Gazette. Notices on bankruptcy rulings are grouped under the subheading *Kendelse* (Ruling), which is outlined by a dotted line for emphasis. Personally identifiable information — such as full names, dates of birth, CVR-numbers, and street addresses — has been modified to preserve anonymity.

torerne ikke får mulighed for at øve indflydelse på skifterettens afgørelse om gældssanering.

John Mikkel Jensen har drevet virksomheden JollyShopping.com v/ John Jensen, CVR-nr. 12345678.

Retten i Randers, den 07.09.2016.

Retskreds
Randers

.....

S07092016-304
I gældssaneringssagen for

Thomas Thomasen

Fødselsdato 10.02.1945
Møllebakken 9
3400 Hillerød

Sagsnr. 1608-773

indkaldes kreditorerne til møde i Retten i Hillerød, Lokale B, Søndre Jernbanevej 18 B, stuen, 3400 Hillerød,

mandag den 10.10.2016, kl. 13.00,

til behandling af skyldnerens forslag til gældssanering.

Forslaget med bilag ligger til eftersyn i skifteretten.
Udeblivelse medfører, at kreditorerne ikke får mulighed for at udøve indflydelse på skifterettens afgørelse om gældssanering.

Hillerød, den 07.09.2016.

Advokat Kristian Kristiansen

Retskreds
Hillerød

Kendelse (*Ruling*)

S07092016-37
Skifteretten i Hjørring har den 06.09.2016 afsagt kendelse om gældssanering for

Alice Mette Jakobsen

Fødselsdato 10.01.1964
Sønderparken 20
9800 Hjørring

Sagsnr. SKS SKIF-261/2016

på følgende vilkår:

Usikret gæld stiftet af Alice Mette Jakobsen før den 12.05.2016 nedsættes til en dividende på 0,6890%, der betales med en engangsudlodning, når kendelse om gældssanering er endelig.

Hjørring, den 06.09.2016.

Som skifterettens medhjælper:
Jens Jensen, advokat
Advokaterne Jens and Jesper
Vestergade 3
9800 Hjørring

Retskreds
Hjørring

.....

S07092016-92
Sø- og Handelsrettens skifteret har den 06.09.2016 afsagt kendelse om gældssanering for

Jesper Rasmus Jespersen

Fødselsdato 19.10.1938
Waargrethevej 2, 4 th
2300 København S

Sagsnr. G 46/16-K

på følgende vilkår:

Skyldnerens gæld stiftet inden den 12.04.2016 nedsættes til 34,94%, som afdrages over en fem-årige periode.

Sø- og Handelsretten, Skifteretten, den 07.09.2016.

Retskreds
Sø- og Handelsretten

.....

S07092016-99
Sø- og Handelsrettens skifteret har den 06.09.2016 afsagt kendelse om gældssanering for

Ali Hesam Amadu

Fødselsdato 14.07.1957
Vestergade 14, 4 th.
2100 København Ø

Sagsnr. G 76/16-K

på følgende vilkår:

Skyldnerens gæld stiftet inden den 13.04.2016 nedsættes til 7,15952% og afdrages over en fem-årig periode.

Sø- og Handelsretten, Skifteretten, den 07.09.2016.

Retskreds
Sø- og Handelsretten

.....

S07092016-106
Sø- og Handelsrettens skifteret har den 06.09.2016 afsagt kendelse om gældssanering for

Annie Rasmussen

Fødselsdato 25.12.1980
Christian 8.s Vej 2B, 1 tv.
1805 Frederiksberg C

Sagsnr. G 36/16-K

på følgende vilkår:

Skyldnerens gæld stiftet inden den 08.03.2016 nedsættes til 4,65628% og afdrages over med 4,18564% 4 uger efter endelig kendelse om gældssanering og 0,47064% den 01.05.2017.

Sø- og Handelsretten, Skifteretten, den 07.09.2016.

Retskreds
Sø- og Handelsretten

.....

Figure A.3: Inheritance timing

This figure reports the distribution of inheritance timing over event time, grouped by seven bins. The first bin represents the share of individuals who receive an inheritance within the first six months following their bankruptcy ruling date. Similarly, subsequent bins group people by intervals of six months.

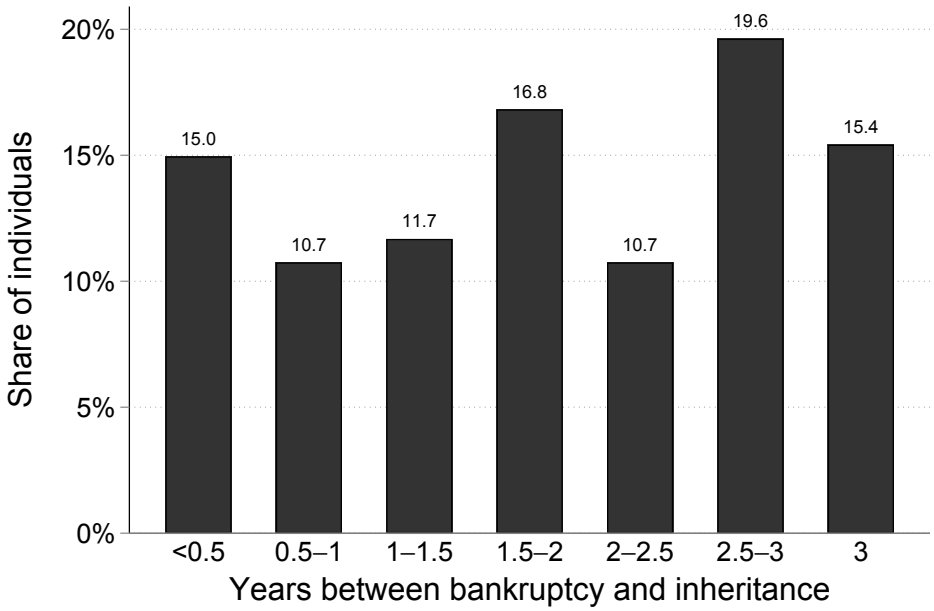

Figure A.4: Being fully personally liable and entrepreneurship around bankruptcy

This figure plots the dynamics of the share of individuals who own a business. The top (bottom) panel displays the dynamics for the treated (control) group. Within each panel, the dynamics are further split by whether the individual solely owned an unlimited liability company before bankruptcy.

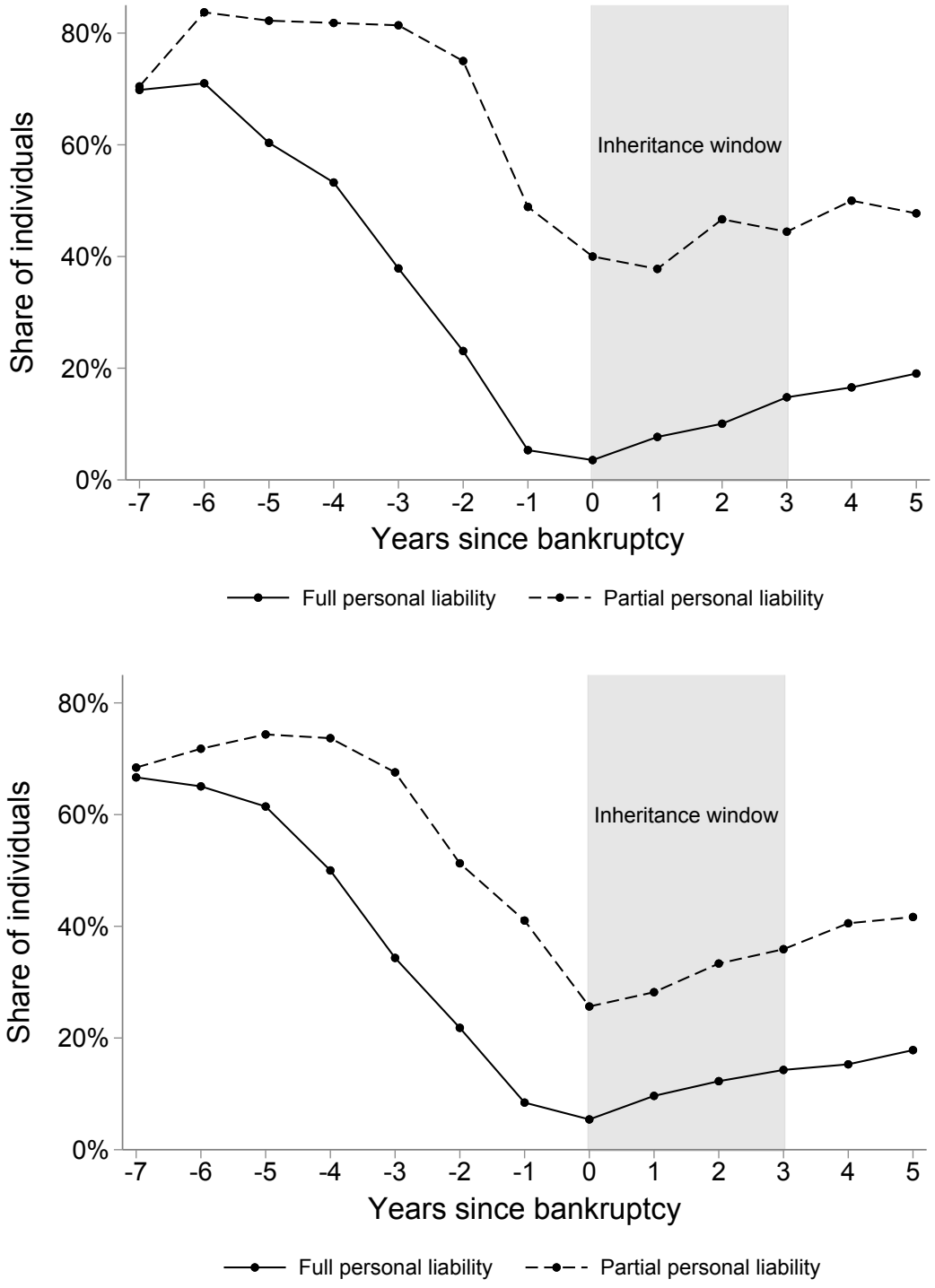

Figure A.5: Severe losses and entrepreneurship around bankruptcy: Control group

This figure plots the dynamics of the share of individuals who own a business among those who do not receive an inheritance and are matched to the treated group ("control group"). The top panel plots the dynamics split by whether the individual in the control group experiences negative entrepreneurial income before bankruptcy. The bottom panel plots the dynamics split by whether the individual in the control group files for bankruptcy under the business debt chapter, which is available for entrepreneurs with large business debts. The shaded area between event years 0 and 3 represents the treatment window, during which inheritance events occur. Figure 4 provides a similar visualization based on the treated group.

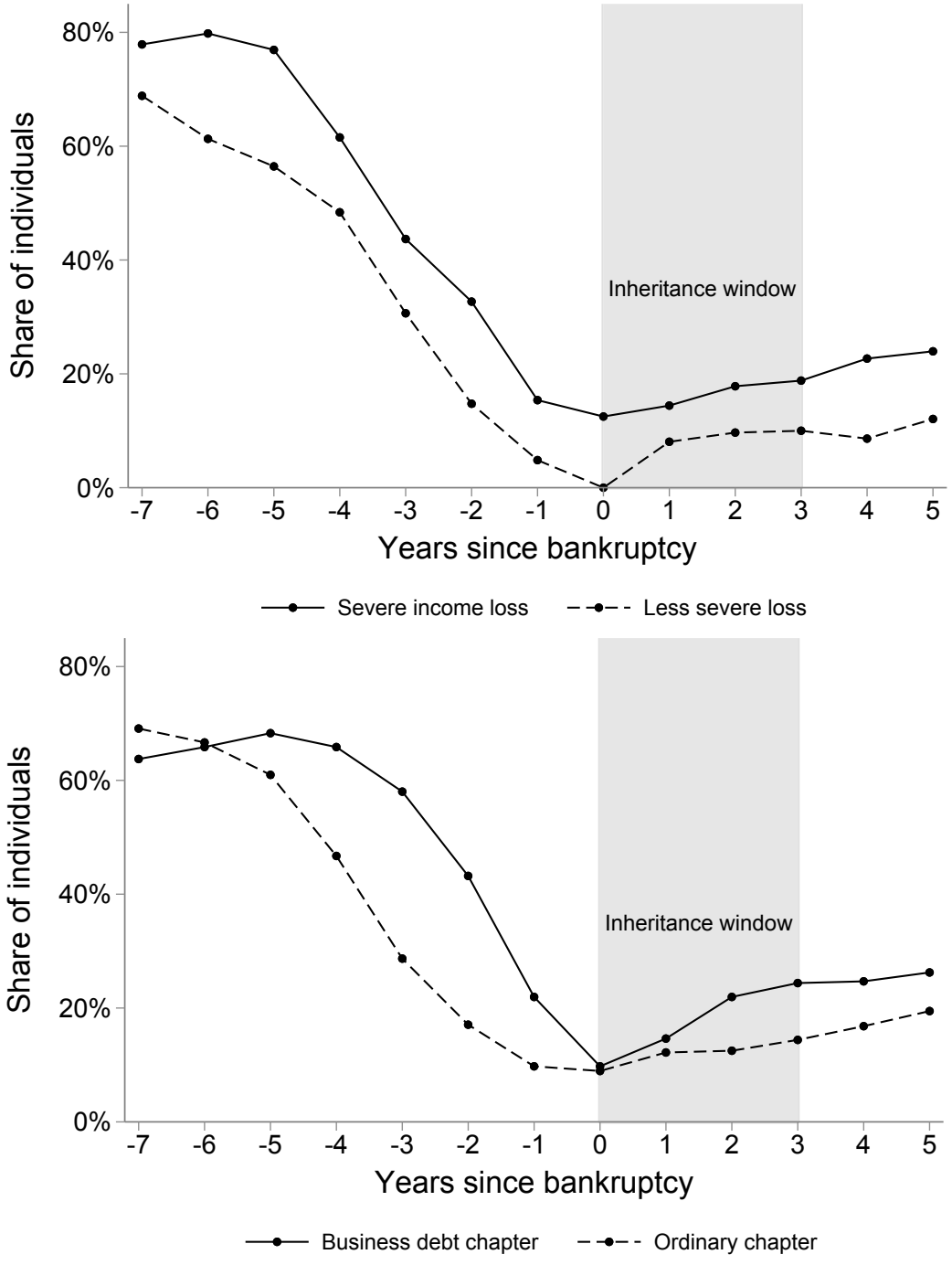

Figure A.6: Income of bankrupt entrepreneurs who restart or do not

This figure plots average income within the main sample, which consists of bankrupt entrepreneurs who receive an inheritance after bankruptcy (the "treated group") and entrepreneurs who do not receive an inheritance after bankruptcy and are matched to the treated group (the "control group"). For both groups, I report averages of labor and entrepreneurial income for individuals (a) who do not own a business after bankruptcy (labelled "Non-entrepreneur") and (b) who start a new business after bankruptcy (labelled "Entrepreneur"). One Euro is equivalent to DKK 7.45. Light (dark) grey bars represent the treated (control) group. I report the difference in income levels between light and dark grey bars in black bars.

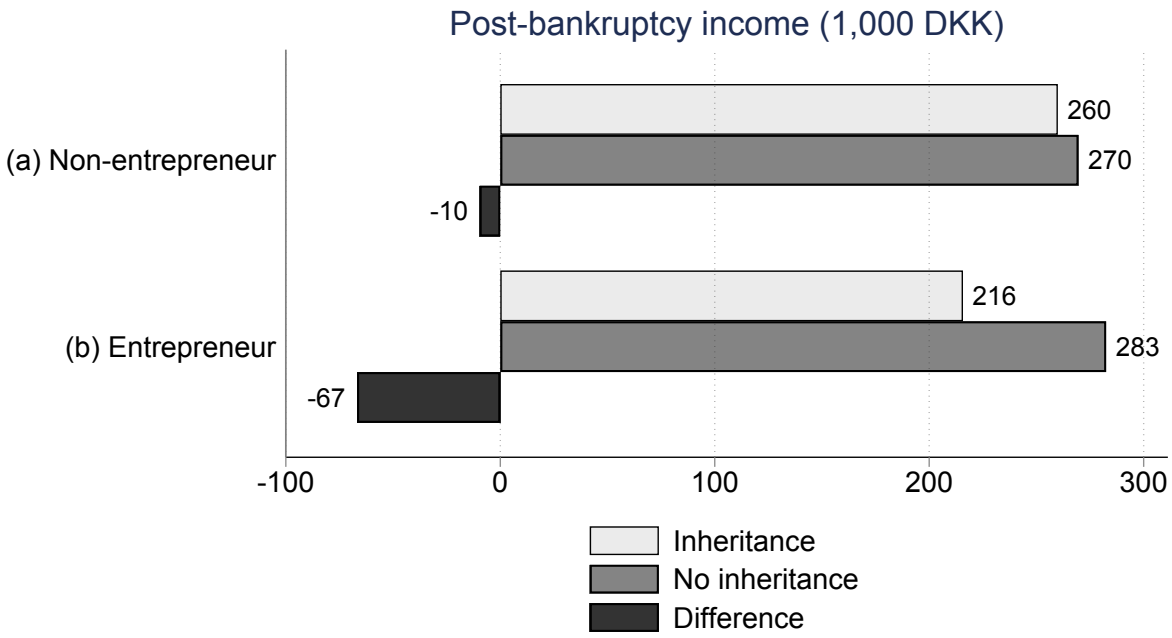

Table A.1: Summary statistics for the matched sample of serial and first-time entrepreneurs

This table presents the mean and standard deviation of the main variables for two types of individuals in the sample: (1) those who restart a business after bankruptcy (referred to as "serial entrepreneurs") and (2) the matched sample of individuals who start a business for the first time and do not experience bankruptcy (referred to as "first-time entrepreneurs"). First-time entrepreneurs are of a similar age ($\pm$1 year) and have the same gender, years of education, and incorporation choice as the matched serial entrepreneurs. They also have similar pre-entrepreneurial labor income and start their businesses at the same time as the serial entrepreneurs restart. For every variable, I compute the difference in average characteristics between the two types of entrepreneurs and test whether this difference is statistically different from zero. The variables in this table are measured at the year of (re)starting the business, except for those in Panel A. Panel A reports net wealth (measured at one year before the start of entrepreneurship) and labor income (averaged over three years before the entrepreneurship). Both are reported in thousands of 2015 DKK (1 Euro $\approx$ DKK 7.45). Panel B presents demographic data. Panel C reports entrepreneurial characteristics, such as the incorporation choice and past experience as a business owner. Panel D reports the fraction of entrepreneurs who experience an inheritance event. The last row reports the number of individuals in each group. Standard deviations are in parentheses, and *t*-statistics are in brackets.

	Matched sample		Difference
	Serial entrepreneurs (1)	First-time entrepreneurs (2)	(1)-(2)
A. Pre-entrepreneurship wealth and income (1,000 DKK)			
Pre-entrepreneurial wealth	-608.4	591.7	-1,200.1***
	(2,633.9)	(1,531.7)	[-4.1]
Pre-entrepreneurial labor income	251.0	254.5	-3.4
	(180.4)	(183.7)	[-0.1]
B. Individual characteristics			
Age	49.2	49.1	0.1
	(6.4)	(6.4)	[0.1]
Male	0.9	0.9	0.0
	(0.3)	(0.3)	[0.0]
Years of education	11.9	11.9	0.0
	(2.0)	(2.0)	[0.0]
C. Entrepreneurial characteristics			
Starting a limited liability company (%)	55.5	55.5	0.0
	(49.9)	(49.9)	[0.0]
Years of business experience	6.4	0.0	6.4***
	(4.0)	(0.0)	[16.7]
D. Experiencing windfall wealth after bankruptcy			
Inheritance event (%)	50.9	0.0	50.9***
	(50.2)	(0.0)	[10.6]
Number of individuals	110	110	

Table A.2: Survival likelihood

This table reports the regression results from a linear probability model, examining the effect of post-bankruptcy inheritances on the probability of remaining as a business owner in the matched sample. The matched sample consists of two types of individuals: (1) those who restart a business after bankruptcy (referred to as "serial entrepreneurs") and (2) the matched sample of individuals who start a business for the first time and do not experience bankruptcy (referred to as "first-time entrepreneurs"). First-time entrepreneurs are of a similar age (±1 year) and have the same gender, years of education, and incorporation choice as the serial entrepreneurs. They also have similar pre-entrepreneurial labor income and start their businesses at the same time as the serial entrepreneurs restart. I observe individuals from the year of (re)starting a business to five years afterward. The dependent variable, *Owner*, is an indicator variable equal to one if the individual owns any company in the year. The primary independent variable, *After inheritance*, is an indicator variable equal to one for years following the individual's inheritance event. *After inheritance* × *Inherited wealth* is equal to the amount of inherited wealth (measured in millions of 2015 DKK) in post-inheritance years, and zero otherwise. *After inheritance* × *Large inheritance* is an indicator variable equal to one for individuals receiving an above-median inheritance in the years following the inheritance event, and zero otherwise. *Past bankruptcy* is an indicator variable equal to one for individuals who experienced bankruptcy (and is thus equal to one for all serial entrepreneurs in the sample). Control variables are defined in Appendix Table A.1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
After inheritance	0.086*		0.144***
	(1.88)		(2.72)
After inheritance × Inherited wealth		0.008	
		(0.36)	
After inheritance × Large inheritance			-0.124*
			(-1.92)
Past bankruptcy	0.040	0.075	0.039
	(0.78)	(1.60)	(0.75)
Pre-entrepreneurial wealth	-0.000*	-0.000*	-0.000*
	(-1.66)	(-1.78)	(-1.89)
Pre-entrepreneurial labor income	0.000***	0.000***	0.000***
	(3.87)	(3.85)	(3.98)
Age	0.000	0.001	0.001
	(0.12)	(0.15)	(0.18)
Male	-0.030	-0.025	-0.031
	(-0.52)	(-0.42)	(-0.53)
Years of education	0.007	0.008	0.007
	(0.83)	(0.91)	(0.84)
Starting a limited liability company	0.130***	0.128***	0.135***
	(3.18)	(3.11)	(3.27)
Years of business experience	-0.004	-0.004	-0.004
	(-0.58)	(-0.53)	(-0.59)
Year fixed effects	Yes	Yes	Yes
R^2	0.11	0.11	0.12
Individual-year observations	1,213	1,213	1,213

Table A.3: Returns to post-bankruptcy serial entrepreneurship

This table reports estimates from OLS regressions examining the effect of inheritances on serial entrepreneurs' income. The dependent variables, *Labor and entrepreneurial income* and *Total income*, are the levels of labor and entrepreneurial and total income (measured in thousands of 2015 DKK, where 1 Euro ≈ DKK 7.45). The primary independent variable, *After inheritance*, is an indicator variable equal to one for years following the individual's inheritance event. The interacted variable, *Owner*, is an indicator variable equal to one if the individual owns any company in the year. *After inheritance* × *Inherited wealth* is equal to the amount of inherited wealth (measured in millions of 2015 DKK) in post-inheritance years, and zero otherwise. *After inheritance* × *Large inheritance* is an indicator variable equal to one for individuals receiving an above-median inheritance in the years following the inheritance event, and zero otherwise. The sample consists of individuals from the treated and control groups, from the year of bankruptcy until five years afterward. Control variables are defined in Table 1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Labor and entrepreneurial income			Total income		
	(1)	(2)	(3)	(4)	(5)	(6)
After inheritance	-17.3		-26.2	-8.2		-14.3
	(-1.31)		(-1.56)	(-0.89)		(-1.26)
After inheritance × Owner	-65.3**		-67.1*	-57.2**		-69.6**
	(-2.15)		(-1.80)	(-2.05)		(-2.14)
After inheritance × Inherited wealth		4.2			3.3	
		(0.49)			(0.54)	
After inheritance × Inherited wealth × Owner		-27.3			-26.3	
		(-1.37)			(-1.53)	
After inheritance × Large inheritance			16.9			11.5
			(0.74)			(0.71)
After inheritance × Large inheritance × Owner			5.0			26.7
			(0.12)			(0.72)
Owner	22.7	-1.9	22.6	-3.5	-24.1	-3.7
	(0.92)	(-0.10)	(0.91)	(-0.16)	(-1.41)	(-0.16)
Business debt chapter	61.8***	64.4***	61.3***	19.9*	21.9*	19.4*
	(4.18)	(4.36)	(4.15)	(1.72)	(1.89)	(1.68)
Discharge ratio	-0.9*	-0.8	-0.9*	-0.5	-0.4	-0.5
	(-1.84)	(-1.64)	(-1.86)	(-1.22)	(-1.07)	(-1.26)
Pre-bankruptcy wealth	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
	(-0.98)	(-0.96)	(-0.95)	(-0.67)	(-0.65)	(-0.63)
Pre-bankruptcy income	0.6***	0.6***	0.6***	0.5***	0.5***	0.5***
	(8.68)	(8.50)	(8.68)	(8.60)	(8.43)	(8.63)
Age	-4.0***	-4.0***	-4.1***	-2.1***	-2.2***	-2.2***
	(-4.13)	(-4.11)	(-4.19)	(-2.94)	(-2.95)	(-2.99)
Male	58.8***	56.7***	60.0***	42.7***	41.5***	43.5***
	(3.83)	(3.71)	(3.86)	(4.53)	(4.44)	(4.56)
Years of education	0.7	0.2	0.7	0.5	0.1	0.6
	(0.21)	(0.05)	(0.21)	(0.19)	(0.03)	(0.22)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.32	0.31	0.32	0.31	0.30	0.31
Individual-year observations	2,480	2,480	2,480	2,480	2,480	2,480

Table A.4: Experiencing severe income loss versus tenure in business

This table reports the regression results from a linear probability model examining the effects of experiencing low relative performance and severe income loss from prior entrepreneurship on the probability of owning a business after bankruptcy. The dependent variable, *Owner*, is an indicator variable equal to one if the individual owns a company in the year. The main independent variable, *After inheritance*, is an indicator variable equal to one if the year is after the inheritance event for the individual. The first interacted variable, *Severe income loss*, is an indicator variable equal to one if the individual experiences negative entrepreneurial income before bankruptcy. The second interacted variable, *Long tenure in ULC*, is an indicator variable equal to one for the individual whose tenure in ULCs before bankruptcy is above the median, which is 3.5 years. By construction, these two measures are defined only for those who have owned unlimited liability companies before bankruptcy. The sample consists of individuals from the treated and control groups, from the year of bankruptcy until five years afterward. Control variables are defined in Table 1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)
After inheritance	0.169***
	(3.19)
Severe income loss	0.056*
	(1.73)
Long tenure in ULC	-0.025
	(-0.69)
After inheritance × Severe income loss	-0.129**
	(-2.17)
After inheritance × Long tenure in ULC	-0.090
	(-1.55)
Business debt chapter	-0.006
	(-0.15)
Discharge ratio	0.001
	(1.41)
Pre-bankruptcy wealth	-0.000
	(-1.11)
Pre-bankruptcy income	-0.000***
	(-2.73)
Age	0.001
	(0.24)
Male	0.053
	(1.32)
Years of education	0.019*
	(1.95)
Year fixed effects	Yes
R^2	0.06
Individual-year observations	2,018

Table A.5: The role of age

This table reports the regression results from a linear probability model examining the effect of inheritances after bankruptcy on the probability of owning a business. The dependent variable, *Owner,* is an indicator variable equal to one if the individual owns a company in the year. The main independent variable, *After inheritance,* is an indicator variable equal to one if the year is after the inheritance event for the individual. The first interacted variable, *Age at bankruptcy,* is the individual's age at bankruptcy. The second interacted variable, *Above median age,* is an indicator variable equal to one for individuals whose age at bankruptcy is above the median, which is 48.5 years old. The sample consists of individuals from the treated and control groups, from the year of bankruptcy until five years afterward. Control variables are defined in Table 1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)
After inheritance	0.097	0.011
	(0.51)	(0.28)
Age at bankruptcy	-0.001	
	(-0.45)	
After inheritance × Age at bankruptcy	-0.001	
	(-0.27)	
Above median age		-0.030
		(-0.81)
After inheritance × Above median age		0.074
		(1.31)
Business debt chapter	-0.063*	-0.062*
	(-1.86)	(-1.87)
Discharge ratio	0.002**	0.002**
	(2.42)	(2.34)
Pre-bankruptcy wealth	-0.000*	-0.000*
	(-1.82)	(-1.81)
Pre-bankruptcy income	-0.000*	-0.000
	(-1.66)	(-1.63)
Male	0.101***	0.101***
	(3.15)	(3.15)
Years of education	0.020**	0.019**
	(2.32)	(2.28)
Year fixed effects	Yes	Yes
R^2	0.06	0.06
Individual-year observations	2,480	2,480

Table A.6: Effect of severe income loss across bankruptcy chapters

This table reports the regression results from the linear probability model in equation 3 examining the effect of experiencing severe income losses on the probability of owning a business after bankruptcy in two separate samples split by bankruptcy chapter. The dependent variable, *Owner*, is an indicator variable equal to one if the individual owns a company in the year. The main independent variable, *After inheritance*, is an indicator variable equal to one if the year is after the inheritance event for the individual. The interacted variable, *Severe income loss*, is an indicator variable equal to one if the individual experiences negative entrepreneurial income before bankruptcy. By construction, this measure is defined only for those who have owned unlimited liability companies before bankruptcy. The sample consists of individuals from the treated and control groups, from the year of bankruptcy until five years afterward. Control variables are defined in Table 1. All columns include calendar-year fixed effects. Standard errors are clustered at the individual level, and *t*-statistics are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) Ordinary chapter	(2) Business debt chapter
After inheritance	0.128**	0.157*
	(2.31)	(1.89)
Severe income loss	0.051	0.093
	(1.30)	(1.36)
After inheritance × Severe income loss	-0.124*	-0.200*
	(-1.75)	(-1.93)
Discharge ratio	0.002	0.001
	(1.53)	(0.84)
Pre-bankruptcy wealth	0.000	-0.000
	(0.02)	(-1.02)
Pre-bankruptcy income	-0.000***	-0.000
	(-2.76)	(-1.15)
Age	-0.001	0.003
	(-0.30)	(0.52)
Male	0.075*	0.011
	(1.80)	(0.10)
Years of education	0.033***	-0.010
	(2.82)	(-0.65)
Year fixed effects	Yes	Yes
R^2	0.09	0.05
Individual-year observations	1,290	728