

# Intergenerational Bankruptcy Risks: Learning from Parents'

## Mistakes

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## Abstract

This study investigates the effects of parental bankruptcy on children's financial behavior in adulthood. Our quasi-experiment combines a large dataset containing demographic and residence information of Singaporean citizens with a bankruptcy dataset. The results show that children whose parents declared bankruptcy before they were 9 years are 2-3 percentage points less likely to declare bankruptcy than their older siblings who were 9 years and older when the parents' bankruptcy event occurred. The results withstood a battery of robustness tests to rule out alternative hypotheses, including birth order, cohort effects, and truncated sample bias. We tested different channels that drive the intergenerational bankruptcy effects and found evidence supporting the "learning" channel by children who learn to avoid repeating parental bankruptcy mistakes in adulthood.

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## 1 Introduction

Bankruptcy laws vary widely across countries with different socioeconomic characteristics and developments. Many countries have lenient bankruptcy provisions to protect debtors, such as Chapter 13 in the US (Dobbie & Song 2015; Dobbie *et al.* 2017). More generous exemptions reduce bankruptcy costs and improve the post-bankruptcy income of bankrupts. They also cause a lower credit supply (Gropp *et al.*, 1997; Berkowitz & White, 2002; Argyle *et al.*, 2020) and induce strategic behavior of borrowers with low socioeconomic status (Choudhary & Jain, 2022). However, a stricter bankruptcy scheme inflicts higher individual bankruptcy costs (Gross & Souleles 2002). The economic impact also spills over to families and social networks in some cases (Fay *et al.* 2002; Cohen-Cole & Duygan-Bump 2009; Li & White 2009; Miller 2012; Gupta 2019).

The intergenerational bankruptcy literature explores relationships of financial outcomes spanning two generations. More specifically, the research explores how parental bankruptcy events persistently impact children's financial behaviors in adulthood. Evidence of intergenerational relationships in bankruptcy behaviors is correlated with the extent of financial shock that families have gone through during childhood. Financial distress events that are more entrenched, stretching over a longer period, are likely to have more persistent impacts on children's financial behavior in adulthood. The shock transmission is likely weaker in countries with lenient debt relief provisions, which help bankrupt individuals gain fresh starts in a shorter time. However, intergenerational bankruptcy effects are expected to be more persistent and stronger in a strict debt relief regime.

While bankrupts in a lenient regime could obtain fresh starts over 60 to 90 days, bankrupts in a strict regime take longer to clear their bankruptcy status. With one of the most stringent bankruptcy policies worldwide (Efrat 2002), bankrupts in Singapore can take up to 10 years to be discharged (Agarwal *et al.* 2021). Singapore is a natural laboratory to empirically test intergenerational bankruptcy risks, specifically, how parental bankruptcy experiences impact children's financial behavior in adulthood. This study examines key questions and channels that drive intergenerational relationships in bankruptcy: Will children learn from their parent's mistakes and avoid repeating their parents' footsteps when growing up? Will parental bankruptcy events

change children's risk-taking behavior in adulthood? Will parental financial distress deprive their children of their human capital development during childhood?

We merge an administrative dataset on demographic for a large sample of Singaporean adult citizens with a bankruptcy dataset in our analyses. Our merged dataset tracks the financial outcomes during adulthood of two or more siblings of different ages from the same families (i.e., with or without bankruptcy experiences). The merged dataset allows us to overcome time-invariant household heterogeneity limitations facing most household economics research. Our empirical results show that the effects of strict personal bankruptcy law are persistent and can be transmitted across generations. In families with parents' bankruptcy events, the younger children facing parental bankruptcy when they were below 9 years are less likely to default or declare bankruptcy in adulthood than their older siblings who were 9 years and older when the bankruptcy occurred. Compared to the older siblings, the probability of younger siblings declaring bankruptcy in adulthood was lower by 2 to 3 percentage points, and the probability of defaulting on credit cards or other credit facilities was lower by 4 to 8 percentage points. By changing the age cutoffs in our robustness tests, we showed that the effect is stronger during early (before the age of 9) than in later childhood (between the ages of 10 and 17), consistent with the evidence that education in early childhood is more effective (Abington & Blankenau 2013; Gan *et al.* 2022).

We rule out potential alternative explanations, including birth order, cohort effect, and right-censored estimation bias of the data, in a series of robustness tests. First, the birth order hypothesis argues that older children in a bankrupt family take on more responsibility in supporting the family and are less successful in adulthood. The firstborn children would be more likely to default or declare bankruptcy than their younger siblings due to lower education or weaker debt management ability. We found to the contrary that firstborn children are less likely to declare bankruptcy than other children, controlling for their age after their parents declare bankruptcy. The birth order hypothesis also argues that younger children benefit more after their parents have cleared off bankruptcy. Our results show otherwise that members of the bankrupt family are neither better off nor significantly worse off in Singapore. We found no corroborative evidence to support the birth order explanation for the intergeneration bankruptcy outcomes.

Second, if our results are driven by systematic differences, the cohort bankruptcy effects should be similar in the bankrupt and non-bankrupt families. The cohort fixed effects in our models should not confound with the baseline results. However, our results show that older children are significantly more likely to go bankrupt than their younger siblings in bankrupt families. The cohort effect is only marginal among children from non-bankrupt families. Therefore, we rule out the cohort effect as an alternative explanation.

Given that our matched data are only available up to 2012, the right-censored data could bias younger siblings' likelihood to declare bankruptcy downward. We conducted robustness tests using the truncated dependent variable, identifying older siblings' bankruptcy events that occurred at an age less than the youngest sibling's age in 2012. The bankruptcy cases by older siblings that occurred at an age higher than the age of their younger sibling in 2012 are not counted in the truncated sample. The models with the truncated dependent variables produce smaller yet statistically significant effects on bankruptcy outcomes between younger and older siblings.

Medical research suggests that adverse experiences may cause permanent changes in the brain and affect subsequent behavior (Lyyo *et al.* 2011; Labonte *et al.* 2012). We investigate three potential channels: risk-taking, human capital investments, and learning from the parents' bankruptcy, potentially driving changes in the financial outcomes. First, economic and non-economic factors could jointly affect a person's risk preferences.<sup>2</sup> The "risk-taking" channel suggests that children become more risk averse after experiencing negative shock, which affects their financial behavior in adulthood (Kim & Lee 2014; Bernile *et al.* 2017; Guiso *et al.* 2018). Following Grinblatt and Keloharju (2009) and Agarwal *et al.* (2016), we use the probability of being involved in traffic accidents to proxy risk-taking behavior. We find that children in the three age groups when their parents declared bankruptcy: below 4 years old, between the ages of 5 and 9, and above 9 years old, have an equal chance of being involved in traffic accidents. The results imply that the risk-taking behavior is not significantly different between these groups of children, and thus we reject the risk

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<sup>2</sup> There is abundant evidence that careful driving behavior is negatively related to risk-seeking behavior. See, for example, Singh and Thayer (1992), Grinblatt and Keloharju (2009) and Grimm and Treibich (2016).

attitude channel.

Second, previous literature shows that children receiving limited resources and human capital investments during childhood are less likely to become successful entrepreneurs (Kim *et al.* 2006; e. g. , Coleman 2007; Kessler & Frank 2009; Drennan *et al.* 2016; Brush *et al.* 2017). Younger children experiencing parental bankruptcy were worse off and thus had less access to financial services in adulthood. We found evidence against this channel showing that the probability of establishing companies is not different for children experiencing parental bankruptcy at different ages. However, as a caveat to our result, we recognize that being a successful entrepreneur cannot fully measure children's financial outcomes in adulthood.

Third, the literature shows that daughters' financial behavior is closely linked to the bankruptcy of mothers, who are closer and devoted more time to the child-rearing process (Kim *et al.* 2012; Alan *et al.* 2017; Zhao & Min 2021; Brenøe & Epper 2022). Alan *et al.* (2017) found significant transmission effects from mothers to daughters but no effect from mothers to sons. As we do not observe if bankrupt parents devoted more resources or were more involved with their children's financial education, we cannot directly test children's learning from their parent's experiences. In the same spirit as the early literature, we use heterogeneity in the outcomes between different genders of bankrupt parents and children as indirect evidence for the learning channel.

We test the interactive effects of children's gender and bankrupt parents' gender on the financial outcomes of the children in adulthood. We show that mothers' bankruptcy events had stronger effects on the bankruptcy outcomes of their daughters than their sons when they grew up. The daughters' probability of bankruptcy and default was nearly 2 percentage points lower than the sons' when their mothers declared bankruptcy when they were young. Our results support the "learn a lesson" channel that helps children avoid repeating their parents' bankruptcy mistakes in adulthood and are consistent with the previous empirical results (for example, Brenøe & Epper 2022). In Singapore, married couples are not allowed to determine who will declare bankruptcy. Therefore, the selection by the parent with a worse financial situation to declare bankruptcy will not confound this result.

Our paper contributes to two strands of literature. The first strand of literature covers

intergenerational effects of economic behaviors, which shows significant correlations between parents or grandparents and the next generations (Cipriani *et al.* 2013; Alan *et al.* 2017; Zhao & Min 2021; Brenøe & Epper 2022). The literature examines the inherent characteristics of parents, but few discuss how parents' negative or positive experiences affect their children. Gene, education, common cultural background, and socialization are critical in intergenerational transmissions (Barnea *et al.* 2010; Zumbuehl *et al.* 2021; Zhou *et al.* 2022). Zhao and Min (2021) show that the parents' early stock market experiences significantly affect the children's stock market participation.

We show that children experiencing parental bankruptcy when they were young are less likely to bankrupt. While most studies rely on survey data, which may suffer from response bias, we use a large administrative dataset to show empirical evidence of parents' bankruptcy experiences on children's default and bankruptcy likelihood. We show that transmissions of financial risks within the household sector and from the household sector to the banking sector help keep financial stability (Berger & Bouwman 2013; Berger *et al.* 2021).

Second, the financial literacy levels are relatively poor for households worldwide (Lusardi & Mitchell 2009, 2011a; Lusardi & Mitchell 2011b), and the efficacy of financial education programs is questionable (Kim *et al.* 2003; Mandell & Klein 2009; Fernandes *et al.* 2014) for various reasons (Willis 2011). Financial literacy impacts the households' financial well-being (Brown *et al.* 2016; Agarwal *et al.* 2017). Parents play a critical role in developing children's financial literacy (Norvilitis & MacLean 2010; Angulo-Ruiz & Pergelova 2015; Grohmann *et al.* 2015; Tang *et al.* 2015; Tang 2017). Our paper relates to the literature on the influence of financial education in early childhood (Abington & Blankenau 2013; Blankenau & Youderian 2015; Drever & Else-Quest 2021; Gan *et al.* 2022) and family roles (Moschis 1985) in shaping financial behaviors in adulthood. We add new empirical evidence by showing that children experiencing parental bankruptcy during childhood learn to avoid the same financial mistakes of their parents when they grow up. Parental financial failures impacted younger children more than older children in the families.

The remainder of the paper is organized as follows. Section 2 provides a brief overview of bankruptcy law in Singapore. Section 3 covers the data. Section 4 reports the results.

Section 5 discusses potential mechanisms. Section 6 concludes the paper.

## **2 Bankruptcy Law in Singapore**

Declaring bankruptcy should only be considered the last resort to write off the unpaid debt. Singapore has strict bankruptcy laws that could inflict serious social and economic consequences, which disrupt the lives of bankrupts and their families. However, the US has more lenient bankrupt laws under Chapter 7 and Chapter 13 to help individuals to get a fresh start.

This section introduces the bankruptcy law in Singapore from three aspects, namely, (1) how bankrupts are discharged, (2) exempted assets, and (3) penalties imposed before discharge.

In Singapore, creditors usually initiate bankruptcy applications against debtors when they cannot repay their debts. The minimum unpaid debt to qualify for a bankruptcy application was SGD 10,000 (USD 7,000) before 2016. The minimum sum was raised to SGD 15,000 (USD 10,500) after the 2016 adjustments were effected. The Government encourages alternative debt management options before filing for bankruptcy. In 2009, the “Debt Repayment Scheme” (“DRS”) was introduced to help individuals involved in bankruptcy cases write off debt and escape insolvency.

A bankrupt individual must repay most of the debt before being discharged from bankruptcy in Singapore. Before the 2015 Bankruptcy (Amendment) Act that took effect in August 2016, a bankrupt individual could only be discharged in one of three ways: by repaying most of the debt, by order of the High Court, or by a Certificate of Discharge from the Official Assignee (OA) (Gardner 2016). A bankrupt individual must make monthly payments under the supervision of an OA until most of the debt is paid off before being discharged. Otherwise, the individual must apply to the High Court for a discharge order. When assessing whether a discharge order should be granted, the High Court will consider factors such as debt amount, cause of bankruptcy, debtor’s contributions, and conduct during the bankruptcy. The third way to get discharged is to receive a Certificate of Discharge (CD) from an OA. The OA will only issue the CD to discharge a bankrupt individual after the debt is fully paid off or the individual is unable to pay the debt due to certain extenuating circumstances, such as death or illness.

The essence of the bankruptcy law in Singapore is to ensure that a bankrupt is not deprived of basic needs and can carry on with normal work. It will limit luxury spending by a bankrupt and nudge a bankrupt to repay the debt. A list of assets is exempted from the bankruptcy proceedings in Singapore, which include public housing flats owned by debtors, equipment/furniture required for personal use in employment or family, and Central Provident Fund savings for medical and retirement purposes. Non-exempted assets, such as private houses and private cars, are sold, and the proceeds are used to repay creditors.

Financial spending and credit activities of bankrupt individuals are subject to strict monitoring by OAs during bankruptcy. Bankrupt individuals cannot own cars, private houses, or credit cards. Taking a taxi is also regarded as luxury spending. Overseas traveling requires the approval of OAs, which is usually approved only for business or work-related reasons.

Bankrupt individuals' right to start any legal action in court is limited. They are not allowed to serve as company directors without the approval of the OAs. The career progression of a bankrupt is also likely to be disrupted. Another cost of declaring bankruptcy is the loss of privacy. Full names and identity card numbers (NRIC) of bankrupt individuals are public information searchable on the bankruptcy register until they fully repay the debt and are discharged by the High Court or the OAs. The names of bankrupt individuals who do not fully repay their debt remain on the bankruptcy register permanently.

Given the high bankruptcy cost, the bankruptcy rate in Singapore is generally low, where most of the cases were caused by liquidity shocks. On average, the total number of bankruptcy applications is less than 3,000 per year, reaching a peak of 5,000 before the global financial crisis. The per capita bankruptcy rate in 2012 was only 0.057% or 5.7 bankruptcy cases for every 10,000 people. Most bankruptcy cases were initiated by creditors before 2012, with banks initiating 47% of the bankruptcy cases related to credit card default or loan defaults. In the US, less than 1% of bankruptcy cases are initiated by creditors (Evans 2003).

In Singapore, bankruptcy events do not directly affect the life of the bankrupt's family members. First, only borrowers with unpaid debt will become bankrupt, and spouses of

the borrowers will not be liable unless the debt is jointly owed. If one spouse is bankrupt and the other is not, the non-bankrupt spouse's income will *not* be seized to repay the debt unless they volunteer. The court will carefully monitor the couples' income to ensure they do not transfer the income from the bankrupt to the non-bankrupt spouse. In cases of joint debt by the husband and wife, both will go bankrupt if they fail to repay the debt, including joint mortgages from banks. Second, the OAs carefully review the assets owned by bankrupts and their family members and ensure that their basic needs to live and work normally are satisfied while repaying the debt. Lastly, the Government heavily subsidizes school fees and provides generous financial aid to low-income households in Singapore.<sup>3</sup> Therefore, children are unlikely to quit school because of liquidity constraints inflicted by bankruptcy.

Generally, a family declaring bankruptcy faces various restrictions, such as being forced to dispose of private houses and cars and restrictions in career choices. In Singapore, the bankrupt family is neither better nor significantly worse off because they are expected to work normally to repay the debt.

### **3 Data**

This paper employs and merges four different datasets. The first dataset contains individual and demographic details on names, unique identity card numbers (NRIC), date of birth, gender, race, and home addresses with block and unit numbers, for a large sample of 70% of Singaporean residents in 2010.

In Singapore, all residents must register their home addresses with the Police Department and update them within 28 days if they move into a new residence. The data capture up-to-date records of the home addresses of individuals, which we use to identify a household to include individuals staying in the same housing unit.

For precise identification of households, we remove housing units with more than ten residents and those with more than one race. These houses were likely to be rented out. We exclude children who do not live with parents or stay with grandparents from the sample. We also drop households with only one child. We keep only individuals born

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<sup>3</sup> The total fees for ten years of primary and secondary school education in Singapore are about one thousand Singapore dollars before 2012. The total costs at the post-secondary stage vary by school type ranging from a few hundred to a few thousand Singapore dollars.

between 1970 and 1989 to avoid having parents and children from the same family in one regression model, which may wrongly treat parents' bankruptcy events as both outcomes and causes. We identify parents as the older individuals in a household conditioned on the age difference between the youngest parent and the oldest child of more than 21 years, which is the legal marriageable age in Singapore.<sup>4</sup> After filtering the data, we obtain a sample of 291,074 children in 128,904 households.

The second dataset contains bankruptcy records in Singapore from 1960 to 2012. The data include demographic details of bankrupt individuals, such as name, NRIC, birth date, and gender, and bankruptcy information, such as petition date, statutory demand issuance date, discharge date, debt amount, and creditor identity. The bankruptcy year is defined as the year when the petition is filed. We match the bankruptcy data with the household data by the unique NRIC of individuals to identify the relationships between bankrupts and other individuals in a family.

The third dataset contains other non-bankruptcy legal cases in Singapore from 1980 to 2012. The data include the date of a writ of summons issued, the nature of claims, and names and NRICs of defendants and plaintiffs. These legal cases include claims on credit facilities (31%), credit cards (1%), general contract disputes (15%), sales of goods (9%), and land and property-related disputes (3%). We keep only legal claim cases related to unpaid credit cards and other credit facilities, which include bank loans and non-bank credits obtained from moneylenders, pawnbrokers, etc. in our analyses. We define the year of occurrence as the year when a writ is issued for a legal case. We match the legal claims dataset with the matched household dataset using the NRIC of individuals to identify their children who default on credit cards or other credit facilities. Charges on unpaid credit cards or other credit facilities do not necessarily result in bankruptcy if defendants repay the debt timely.

The last dataset contains personal traffic accident events reported in Singapore from the 1980s to 2012. We match the dataset with the matched household data based on NRICs of individuals to identify children involved in traffic accidents. The data include case filing dates, names, and identities of parties involved. Traffic accidents in the dataset

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<sup>4</sup> Anyone below 21 years of age must obtain the consent from their parents and complete a mandatory marriage preparation class to get married.

include car accidents and accidents involving other vehicles, such as motorcycles.

Table 1 reports the summary statistics of the final matched sample. In 2012, which coincides with the last year of our sample period, the average unpaid debt in bankruptcy cases in Singapore was SGD 216,751 (USD 150,000), while the median was SGD 22,920 (USD 16,000). The average monthly income of Singaporeans in the same year was SGD 3,480 (USD 2,400). 47% of the children in the sample are female, marginally lower than the proportion of female residents in Singapore in 2010 (50.7%)<sup>5</sup>. The proportion of children whose parents ever declared bankruptcy is 2.8%. The proportions of children who declared bankruptcy in adulthood and those who defaulted are 0.97% and 4.5%, respectively. The average age of children when their parents declared bankruptcy was 11.9 years.

[Insert Table 1 Here]

The sample includes only children born between 1970 and 1989. To validate a potential concern that the financial behaviors of children in this age group may differ from the population, we plot the total number of bankruptcy cases and other financial-related default cases for children of this age group and the Singaporean population in Figure 1. Default and bankruptcy cases rose from 1997 to 2003 because of the Asian Financial Crisis in 1997 and the SARS outbreak in 2003. The Global Financial Crisis had a marginal impact on bankruptcy but a significant and positive impact on defaults because of the Debt Repayment Scheme introduced in 2009 as an alternative to bankruptcy. The Global Financial Crisis may have caused a rapid deterioration in the financial situation of younger individuals born between 1970 to 1989, who were more vulnerable to the economic downturn than older individuals. Therefore, the two figures show that the bankruptcy and default trends increased faster than the population trend after 2005.

[Insert Figure 1 Here]

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<sup>5</sup> This number is extracted from the Singapore's Census of Population 2010.

## 4 Main Results

### 4.1 Baseline Results

A naïve empirical strategy for testing the effect of parental bankruptcy on children's financial behavior in adulthood is to directly compare households that had declared bankruptcy with those that had not. However, the empirical strategy is incomplete if unobservable household characteristics and inherited financial behavior (Willerslev-Olsen *et al.* 2020; Zhou *et al.* 2022), such as genes, cultural background, and family socioeconomic status, were not controlled. Our model includes the household fixed effects to absorb any time-consistent household-level variation. The fixed-effect strategy was also employed in other studies on the impact of maternal stress levels on children's outcomes (Aizer *et al.* (2016), offspring obesity (Ludwig *et al.* (2013), and the effect of natural disasters during pregnancy (Currie and Rossin-Slater (2013).

We examine within-household variations in the financial behaviors of children when they experience parental bankruptcy events at different ages. More specifically, we empirically test if the negative shock of parental bankruptcy has a differential impact on bankruptcy risk in the adulthood of siblings of different ages. The children's ages when their parents declared bankruptcy is defined as the difference between the year of bankruptcy event and the child's birth year. We sorted children into three age groups relative to the year of parental bankruptcy event: "below 4 years", "5 to 9 years", and "10 to 21 years". The reference group is children aged between 10 and 21 years. Table 5 shows the results of robustness tests based on different reference groups.

The regression equation is defined as follows:

$$Y_{i,h} = \beta_1 1_{Age \leq 4_{i,h}} + \beta_2 1_{Age 5-9_{i,h}} + \beta_3 1_{Female_{i,h}} + \tau_{i,h} + \eta_h + \varepsilon_{i,h} \quad (1)$$

$Y_{i,h}$  is a binary variable indicating the financial behavior of a child  $i$  from household  $h$  in adulthood (after 21 years). We employ two binary variables to represent children's financial behavior in adulthood (i.e., bankruptcy and default on credit cards or other credit facilities):  $1_{Age \leq 4_{i,h}}$  equals 1, if parents declared bankruptcy when child  $i$  was before 4 years old, and otherwise 0, if parents never declared bankruptcy or declared bankruptcy when the child was 4 years and older.  $1_{Age 5-9_{i,h}}$  equals 1 if parents declared bankruptcy when child  $i$  was between 5 and 9 years old, and otherwise 0. The

age threshold of 9 years is aligned with previous research that shows that parental influences are most significant when the children are below 8 years old (Alan *et al.* 2017) and that the cognitive ability stabilizes by 10 years old (Cunha & Heckman 2007). We conduct robustness tests in Table 6 by changing the threshold to 8 and 10 years using a finer age group.

We include the gender of the child and the cohort fixed effects denoted by  $\tau_{i,h}$  to control differences in financial literacy by cohort.  $\eta_h$  denotes the household fixed effects. The unbiased estimates of parental bankruptcy's effect on children's financial behavior in adulthood, as represented by  $\beta_1$  and  $\beta_2$ , are expected to be negative, implying a lower probability of bankruptcy or default in adulthood for a child relative to older siblings between 10 and 21 years when their parents declared bankruptcy.

The baseline results from equation (1) are summarized in Table 2. Younger children's financial behaviors in adulthood are more affected by parental bankruptcy events than older siblings. Children who experience parental bankruptcy events at young ages have a significantly lower probability of declaring bankruptcy or defaulting on credit cards or other credit facilities. Children who were 4 years and younger when experiencing parental bankruptcy events were 3.2 percentage points lower in bankruptcy risk and 8 percentage points lower in default risk compared to their older siblings who were 10 to 21 years of age when their parents' bankruptcy occurred. For children who experienced parental bankruptcy events at the age of 5 to 9 years, the bankruptcy and the default risk are 2.8 and 4 percentage points lower, respectively, relative to the reference age group of siblings (10 to 21 years).

The stronger parental bankruptcy effect in lowering younger siblings' bankruptcy risk in adulthood is not driven by the salience of parents' bankruptcy events. The salience explanation holds only if we observe lower bankruptcy risk in older siblings than in younger siblings. Zhao and Min (2021) examine the learning channel by showing that children learn investment strategies from their parents, which persist as they age or move away from their parents. Our result of differential adulthood bankruptcy risks between younger and older siblings controlling for the cohort is also consistent with the learning channel. The next section will cover more empirical evidence on the learning channel in explaining childhood learning from parents' negative experience.

[Insert Table 2 Here]

## 4.2 Robustness Tests

### 4.2.1 Birth Order

The birth order literature shows that firstborn children usually outperform their younger siblings (Becker & Lewis 1973; Black *et al.* 2018) because parents usually spend more time with firstborn children than those born later (Price 2008). In our context, older children may quit school early to work and take on more responsibility in the family after their parents declared bankruptcy. The birth order of siblings explains that older children would be less successful in adulthood and more likely to declare bankruptcy than their siblings in bankrupt families.

We compare the financial outcomes between firstborn and non-firstborn children in bankrupt families. Given that there is only one firstborn child in each family, as denoted  $1_{Firstborn_{i,h}}$ , a binary variable that equals 1, if a child  $i$  from a household  $h$  is the firstborn child, we compare across families without controlling for the family fixed effects, and the sample includes only bankrupt households. We interact  $1_{Firstborn_{i,h}}$  with the age group indicators  $1_{Age \leq 4_{i,h}}$  and  $1_{Age 5-9_{i,h}}$ , to capture the differential probability of declaring bankruptcy or default between the firstborn and non-firstborn children, conditional on their age when their parents declared bankruptcy. The interaction terms, if not significantly positive, imply that firstborn children are not more likely to declare bankruptcy than non-firstborn children. In other words, the birth-year order does not explain the baseline results.

Table 3 reports the results. The coefficients on the interaction terms in columns (1) and (2) are small in magnitude and not statistically significant. We find no evidence to support the “birth order” explanation and that the impact of parental bankruptcy does not vary by birth order. The results rule out an alternative explanation that older children are worse off than their younger siblings after the parental bankruptcy shock. There was also no evidence that firstborns have higher default and bankruptcy risk than those born later in bankrupt families. In Singapore, creditors usually force debtors into bankruptcy, and bankrupt families are not better off after declaring bankruptcy. Therefore, neither firstborn nor older children were better or worse off after their parents declared bankruptcy.

[Insert Table 3 Here]

#### 4.2.2 Cohort and Age Effect

Two sampling biases could distort the cohort and age effects on bankruptcy risks. First, we identify family members (parents and children) in the same household by their home addresses based on the assumption that children invariably live with their parents. By the housing selection, older siblings who did not move out of their parent's homes could be mechanically worse off than younger siblings living in the same house. In Singapore, high housing prices and long waiting times to apply for subsidized public housing may force many less well-off adult children to live with their parents even after marriage. Second, the bankruptcy outcomes of some younger siblings are truncated if they have yet to declare bankruptcy when the data ended in 2012.

We compare bankruptcy risks across the cohorts in families with bankrupt and non-bankrupt parents to rule out the sample selection and the right-censor explanations. Suppose the main findings that the older siblings are systematically worse off than younger siblings are *fully* explained by the sample selection or the right-censored data. We should expect the same cohort effect across families with and without bankrupt parents.

[Insert Table 4 Here]

The results in Table 4 show that younger children of bankrupt parents born from 1985 to 1989 are 10 percentage points less likely to declare bankruptcy than older siblings born (the omitted reference group) from 1970 to 1974. In families with non-bankrupt parents, younger children from the 1985-1989 birth-year cohort are only 2.9 percentage points less likely to declare bankruptcy than the older sibling from the 1970-1974 cohort. While the results in columns (3) and (6) show a lower probability of bankruptcy for the younger children in both families, the effect is significantly higher in bankrupt families than in non-bankrupt families. We rule out the mechanical effect that older siblings who are worse off when living with their parents could drive the cohort-related bankruptcy outcomes.

We conduct robustness tests to rule out the right-censored bias of our data. We define a truncated dependent variable that equals 1 if an older sibling's bankruptcy event occurs

at an age that is not more than the youngest sibling's age in 2012 (the end of our bankruptcy dataset). Otherwise, it equals 0, if the older siblings never went bankrupt or if it occurs, the age of the older bankrupt sibling is more than the youngest sibling's age in 2012. For example, if two siblings were born in 1982 and 1987, respectively. The older sibling defaulted at 29 years, which is higher than his younger sibling's 25 years of age in 2012. In this case, the older sibling is identified as a non-bankrupt. However, if the older sibling's bankruptcy occurs at the age of 22, which is lower than the 25 years of age of his younger sibling, he is identified as bankrupt.

[Insert Table 5 Here]

We expect the models with the truncated dependent variables to produce insignificant or smaller differential effects on bankruptcy outcomes between younger and older siblings. We rerun the baseline regression in equation (1) with the truncated dependent variable and report the results in Table 5. As expected, the effect is smaller than the results reported in Table 2, and most coefficients are still statistically significant and economically meaningful. In columns (1) and (3), the children aged under 4 years when parents declared bankrupt are 1.7 percentage points less likely to go bankrupt and 3.9 percentage points less likely to default than the reference group (children aged between 10 and 21 years). In columns (2) and (4), the coefficients estimated for the other two groups are more significant when we use a smaller reference group comprising children aged between 18 and 21 years. Children aged 5 to 9 years were 1.8 percentage points less likely to be bankrupt, and 1.9 percentage points less likely to default than the reference group.

#### 4.2.3 Different Age Cutoffs

We conduct more robustness tests on the baseline results by using different age cutoffs and changing the age of the reference group. We define a new set of indicator variables for each age group. The three binary variables:  $1_{Age \leq 8_{i,h}}$ ,  $1_{Age \leq 10_{i,h}}$  and  $1_{Age 10-17_{i,h}}$ , equal 1 if parents declared bankruptcy when child  $i$  ages below 8, below 10 years, and between 10 and 17 years, respectively, and they equal zero otherwise.

We decompose the reference group of children between 10 and 21 years into two sub-groups: children aged between 10 and 17 and above 17, respectively, and use the latter as the reference group in columns (1) and (4) of Table 6. The children aged between 10

and 17 [i.e.,  $1_{Age10-17_{i,h}}$ ] are only 1.9 and 3 percentage points less likely to go bankrupt or default than the reference group, respectively. However, children under 9 years are 4.6 to 5 percentage points less likely to go bankrupt and 7 to 11 percentage points less likely to default. The result is consistent with the previous research that early childhood education is more influential than later childhood education (for example, Abington & Blankenau 2013).

In columns (2) to (3) and columns (5) to (6), we set the age threshold at 8 and 10 years, the results on the two indicators, [ $1_{Age\leq 8_{i,h}}$ ,  $1_{Age\leq 10_{i,h}}$ ], are consistent with the baseline results in Table 2.

[Insert Table 6 Here]

## 5 Potential Channels

We test three potential channels by which the parental bankruptcy shock could be transmitted across generations to affect children's financial behavior:

1. *Risk-taking*: People become risk averse after experiencing a negative shock during childhood (Kim & Lee 2014; Bernile *et al.* 2017; Guiso *et al.* 2018), which affects their financial behavior in adulthood. They borrow less and are less likely to declare bankruptcy and default.
2. *Human capital investments*: Children receiving limited resources and human capital investments during childhood are less likely to become successful entrepreneurs (e. g., Coleman 2007; Kessler & Frank 2009; Drennan *et al.* 2016). Children experiencing parental bankruptcy were worse off and thus had less access to financial services in adulthood.
3. “*Learn a lesson*” from parents' mistakes: Bankrupt parents devote more time to their children's financial education. Children learn from parental bankruptcy experience and avoid making the same mistake. They can better manage their consumption, investments, and other financial products (Tang *et al.* 2015).

Access to credit is another possible channel that could cause bankruptcy outcomes, although the literature has no consensus on the causal effects of the channel. On the one hand, low access to credit pushes households to borrow from more expensive

alternatives, resulting in more financial distress and bankruptcy (Zinman 2010; Melzer 2011; Morgan *et al.* 2012; Danisewicz & Elard 2018). On the other hand, easy access to credit enables households to smooth out temporary negative shocks (Herkenhoff *et al.* 2016), reduce financial distress, and overcome financial setbacks (Dettling & Hsu 2017), which may lower the probability of bankruptcy. Predatory lending to unsophisticated borrowers (Skiba & Tobacman 2019) and strategic abuse of debtor protection (Wang & Overby 2022) are among the credit access channels that could increase bankruptcy. With a strict legal system and consumers' conservative attitude toward debt in Singapore, easy credit access does not necessarily lead to more debt distress and bankruptcy. However, we cannot directly test the credit access channel due to data limitations.

### 5.1 The risk-taking channel

Medical research argues that people may suffer permanent physiological and biological impacts on the brain after adverse experiences (e.g., Lyoo *et al.* 2011; Labonte *et al.* 2012), which could influence subsequent behaviors. Non-economic and economic risk preferences are not perfectly colinear. However, the research shows that driving behavior is negatively related to risk-seeking behavior (Singh & Thayer 1992; Grinblatt & Keloharju 2009; Grimm & Treibich 2016).

Following Grinblatt and Keloharju (2009) and Agarwal *et al.* (2016), we assume that risk-seeking behavior is positively related to reckless and aggressive driving behavior. We employ the traffic accident dataset and use children's likelihood of being involved in traffic accidents to test the "risk-taking" channel. If the children become more risk-averse after parental bankruptcy, they drive or ride more carefully to avoid traffic accidents and cause fewer accidents.

We rerun the regression in equation (1) by replacing  $Y_{i,h}$  with a new binary variable that equals 1 to denote child  $i$  from household  $h$ , who was charged in a traffic accident as a defendant. Table 7 shows that daughters are less likely to get involved in traffic accidents, which is consistent with US-based statistics.<sup>6</sup> Besides, children aged below

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<sup>6</sup> Research conducted by Insurance Institute for Highway Safety (IIHS) shows that females drive more carefully than males. [Accessed March 2023]

4 years or between 5 and 9 years when parents declared bankrupt are not statistically less likely to get involved in traffic accidents than the reference group of children above 9 years when parental bankruptcy occurred. The magnitude of the coefficient is marginal, given the average probability of being involved in traffic accidents of 4.6%. Column (2) shows that the effect of parental bankruptcy is not significantly different by the gender of children.

In the robustness tests not reported in the paper, we employ the three age subgroups as in column (2) of Table 6 and find no significant difference in the traffic accident risks in the three age groups. The results imply that parental bankruptcy has little or no effect on children's risk attitude, as represented by the probability of being involved in traffic accidents.

[Insert Table 7 Here]

## 5.2 The human capital investment channel

Parents with limited access to financial services after declaring bankruptcy are likely to cut down investments in human capital on their children. Children of bankrupt families become worse off if they cannot build enough human capital to compete with other children in schools and job markets. We employ a unique dataset on ownership of companies in Singapore to measure children's success in career outcomes, which could be measured in terms of entrepreneurship and ownership in companies. The literature shows that human capital is a strong predictor of entry and success of entrepreneurship (Kim *et al.* 2006; Brush *et al.* 2017). With a caveat, we recognize that becoming a company owner is not the only measure of success in career outcomes in adulthood.

We empirically test if children who experience parental bankruptcy during childhood are less likely to be successful in the corporate world, i.e., becoming company owners or directors. We drop sole proprietorships and keep only other forms of partnerships, private limited and public-listed companies, in the data, which are more relevant in measuring the corporate success of children when they grow up. We also hope to find corroborative evidence on whether younger siblings in bankrupt families are worse off

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(<https://www.iihs.org/topics/fatality-statistics/detail/males-and-females#:~:text=Speeding-,Overview,impaired%20by%20alcohol%2C%20and%20speeding>)

than older siblings.

[Insert Table 8 Here]

On the assumption that the corporate success of children is equivalent to becoming corporate owners, our results imply that younger children are not significantly worse off than their older siblings in families with parental bankruptcy. We run a regression with an indicator variable equal to 1 if a child becomes a company owner in adulthood as the dependent variable. The results in Table 8 suggest that the age of children when their parents declare bankruptcy does not significantly affect the probability of attaining corporate success in adulthood. We use different age groups as the cutoffs in the robustness tests, as in Table 6, but the results are not reported. None of the age cutoffs could explain significant differences in the probability of becoming company owners in adulthood. We rule out the human capital investment channel in explaining the intergenerational transmissions of parental bankruptcy shock to children's financial outcomes in adulthood.

### 5.3 The “*Learn a lesson*” channel

Previous research shows that children who are close to and communicate more with their mothers are less likely to engage in irresponsible financial behaviors (Kim *et al.* 2012). Empirical studies on intergenerational transmissions show that mothers influence daughters' behavior more than sons' through their parenting roles at home (for example, Alan *et al.* 2017; Brenøe & Epper 2022). The “*Learn a lesson*” channel hypothesizes that bankrupt parents devote more time to their children's financial education and that children are more likely to learn from their parent's mistakes and behave more prudently and responsibly in their financial decision-making. They hold more precautionary savings or spend less on non-essentials. If children learn from their parent's mistakes, daughters should learn more than sons and more from their mothers.

We do not directly observe how children learn from their parents and how parents teach financial education to their children. Based on the previous research, we infer that daughters rather than sons will likely “*learn a lesson*” from their mothers' bankruptcy events. We could not reject the hypothesis if the mothers' bankruptcy has asymmetric effects on the bankruptcy risks of daughters relative to sons. We define a binary variable,

$1_{Mother_h}$  that equals 1 if a mother declares bankruptcy in household  $h$ , and otherwise, 0 if either a father declares bankruptcy or non of the parents declared bankruptcy. We interact  $1_{Mother_h}$  with the child's gender to investigate heterogeneity by genders of the bankrupt parents and the children.

[Insert Table 9 Here]

The results in Table 9 show that the mothers' bankruptcy events have stronger impacts on daughters than on sons. If the bankrupts were mothers, daughters were 1.6 percentage points less likely to declare bankruptcy and 2.6 percentage points less likely to default than sons in the same family. The mothers' bankruptcy shock changes daughters' financial behavior more than sons, and the effect is statistically significant and economically meaningful. The results do not reject the "*Learn a lesson*" channel that explains intergenerational transmissions of parental bankruptcy shock to their daughters' financial outcomes in adulthood.

## 6 Conclusion

This paper merged and used four unique datasets in robust empirical strategies to examine intergenerational influences of parental bankruptcy. The results suggest that younger children who experience parental bankruptcy events during childhood are 2-3 percentage points less likely to declare bankruptcy and 4-8 percentage points less likely to default on credit cards or other credit facilities than their older siblings. We reject the birth order explanation by showing the same probability of adulthood bankruptcy and credit default between firstborn and non-firstborn children. We also reject the explanation that older siblings are mechanically worse off than their younger siblings due to the sample selection and the right-censoring of data.

We examine three potential channels: risk-taking, human capital investment, and "*learning a lesson*," in explaining children's risky behavior in adulthood after experiencing a parental bankruptcy shock during childhood. We reject the risk-taking channel by showing that the probability of being involved in traffic accidents is similar for children experiencing parental bankruptcy at different ages. We also reject the channel that parental bankruptcy during childhood reduces investments in enhancing the human capital of young children. We show that the probability of establishing

companies is not different between children experiencing parental bankruptcy shock at different young ages. Our findings show that children could learn from their parents' mistakes in bankruptcy events, and the learning effect is stronger in the bankrupt mothers-daughters pairs than in the bankrupt mothers-sons pairs. The gender-biased intergenerational transmissions of maternal bankruptcy shock affect the financial behaviors of daughters more significantly than sons. The results do not reject the "*learning a Lesson*" channel.

Our study based on a strict debt relief system sheds useful insights into the intergenerational parental bankruptcy shock transmissions on children's adulthood financial behaviors. The debt relief policies with different degrees of leniency may have a differential impact on children's financial behaviors.

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**Figure 1 Comparison of Children in the Sample and Singapore Population**

Notes: The figure compares bankruptcy numbers and legal default cases on credit cards and other credit facilities in our matched sample and the population. The dashed line represents the numbers by year in the matched sample, and the solid line represents the numbers by year in Singapore.

**Table 1 Summary Statistics**

Variable	Observations	Mean	Std. Dev.
Parent_Bk <sub>h</sub>	291,074	0.028	0.165
Bankruptcy <sub>i,h</sub>	291,074	0.010	0.098
Default <sub>i,h</sub>	291,074	0.045	0.240
Traffic Accidents <sub>i,h</sub>	291,074	0.046	0.210
<b>1</b> Female <sub>i,h</sub>	291,074	0.474	0.499
Age_Parent_Bk <sub>i,h</sub>	8,154	11.903	6.149
<b>1</b> Age≤4 <sub>i,h</sub>	291,074	0.004	0.062
<b>1</b> Age5-9 <sub>i,h</sub>	291,074	0.005	0.071

Notes: The table reports the summary statistics. *Parent\_Bk<sub>h</sub>* is a binary variable equal to 1 if parents from household *h* declare bankruptcy. *Bankruptcy<sub>i,h</sub>* is a binary variable equal to 1 if child *i* declared bankruptcy in adulthood. *Default<sub>i,h</sub>* is a binary variable equal to 1 if child *i* is charged for default on credit cards and other credit facilities. *Traffic Accident<sub>i,h</sub>* is a binary variable equal to 1 if child *i* is charged for causing traffic accidents. *1Female<sub>i,h</sub>* is a binary variable equal to 1 if child *i* is a female. *Age\_Parent\_Bk<sub>i,h</sub>* is the age of child *i* when the parents from household *h* declared bankruptcy. *1Age≤4<sub>i,h</sub>* and *1Age5-9<sub>i,h</sub>* are binary variables equal to 1 if the parents declared bankruptcy when the child *i* was under 4, or between the ages of 5 and 9, respectively.

**Table 2 Parental Bankruptcy and Adulthood Financial Behavior**

<i>DV</i>	(1) Bankruptcy=1	(2) Default=1
$1Age\leq 4_{i,h}$	-0.032*** (0.012)	-0.080*** (0.030)
$1Age5-9_{i,h}$	-0.028*** (0.010)	-0.040* (0.021)
$1Female_{i,h}$	-0.009*** (0.001)	-0.031*** (0.001)
Observations	291,074	291,074
R-squared	0.499	0.520
No. Households	128,904	128,904
No. Bankrupt Households	3,613	3,613
Cohort FE	Yes	Yes
Household FE	Yes	Yes

Notes: The table reports the average probability of going bankrupt and default of children whose parents declared bankruptcy at different ages (equation (1)).  $1Age\leq 4_{i,h}$  and  $1Age5-9_{i,h}$  are binary variables equal to 1 if the parents declared bankruptcy before the child  $i$  was 4, or when the child was between the ages of 5 and 9, respectively. The gender of the children, cohort fixed effects, and household fixed effects are included in the regressions. Standard errors are clustered at the household level and are reported in parentheses. \*, \*\*, \*\*\* denote statistically significant levels at 10%, 5% and 1%, respectively.

**Table 3 Birth Order and Financial Behavior**

<i>DV</i>	(1)	(2)
	Bankruptcy=1	Default=1
<b>1Firstborn<sub>i,h</sub>*1Age≤4<sub>i,h</sub></b>	-0.001 (0.007)	-0.015 (0.028)
<b>1Firstborn<sub>i,h</sub>*1Age5-9<sub>i,h</sub></b>	-0.003 (0.006)	0.009 (0.025)
<b>1Age≤4<sub>i,h</sub></b>	-0.005** (0.003)	-0.025 (0.036)
<b>1Age5-9<sub>i,h</sub></b>	-0.007** (0.003)	-0.011 (0.023)
<b>1Firstborn<sub>i,h</sub></b>	-0.004 (0.009)	0.013 (0.016)
<b>1Female<sub>i,h</sub></b>	-0.014*** (0.002)	-0.051*** (0.005)
Observations	8,154	8,154
R-squared	0.030	0.050
Cohort FE	Yes	Yes
Household FE	No	No

Notes: The table reports the heterogeneous effects of parental bankruptcy on children by birth order. *1Firstborn<sub>i,h</sub>* is a binary variable equal to 1 if child *i* is firstborn. *1Age≤4<sub>i,h</sub>* and *1Age5-9<sub>i,h</sub>* are binary variables equal to 1 if the parents declared bankruptcy before the child *i* was 4, or when the child was between the ages of 5 and 9, respectively. The gender of the children and cohort fixed effects are included in the regressions. Standard errors are clustered at the household level and are reported in parentheses. \*, \*\*, \*\*\* denote statistically significant levels at 10%, 5% and 1%, respectively.

**Table 4 The Probability of Declaring Bankruptcy and Default Across Cohorts**

<i>DV</i>	Bankruptcy=1			Default=1		
	(1)	(2)	(3)	(4)	(5)	(6)
Parent_Bk <sub>h</sub> *1Cohort1975-1979 <sub>i,h</sub>			-0.053** (0.025)			-0.094** (0.046)
Parent_Bk <sub>h</sub> *1Cohort1980-1984 <sub>i,h</sub>			-0.066** (0.026)			-0.118** (0.051)
Parent_Bk <sub>h</sub> *1Cohort1985-1989 <sub>i,h</sub>			-0.072*** (0.027)			-0.141*** (0.052)
1Cohort1975-1979 <sub>i,h</sub>	-0.067*** (0.025)	-0.015*** (0.002)	-0.015*** (0.002)	-0.132*** (0.046)	-0.041*** (0.004)	-0.041*** (0.004)
1Cohort1980-1984 <sub>i,h</sub>	-0.090*** (0.026)	-0.025*** (0.002)	-0.025*** (0.002)	-0.198*** (0.050)	-0.083*** (0.004)	-0.083*** (0.004)
1Cohort1985-1989 <sub>i,h</sub>	-0.100*** (0.026)	-0.029*** (0.002)	-0.029*** (0.002)	-0.241*** (0.051)	-0.103*** (0.005)	-0.103*** (0.005)
1Female <sub>i,h</sub>	-0.017*** (0.004)	-0.009*** (0.001)	-0.009*** (0.001)	-0.049*** (0.010)	-0.030*** (0.001)	-0.031*** (0.001)
Observations	8,154	282,920	291,074	8,154	282,920	291,074
R-squared	0.029	0.013	0.014	0.527	0.519	0.520
No. Household	3,613	125,291	128,904	3,613	125,291	128,904
No. Household with Bankrupt Parent	3,613	0	3,613	3,613	0	3,613
Household FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table reports the children's probability of declaring bankruptcy (columns (1) to (3)) and default (columns (4) to (6)) across age cohorts for the children from families where the parents are bankrupt (columns (1) and (4)) and from the families where the parents are not (columns (2) and (5)). Columns (3) and (6) include all the families. The three binary variables *1Cohort1975-1979<sub>i,h</sub>*, *1Cohort1980-1984<sub>i,h</sub>*, *1Cohort1985-1989<sub>i,h</sub>* indicate the children's birth year. The gender of the children and household fixed effects are included. Standard errors are clustered at the household level and are reported in parentheses. \*, \*\*, \*\*\* denote statistically significant levels at 10%, 5% and 1%, respectively.

**Table 5 Robustness Test with Truncated Dependent Variables**

<i>DV</i>	(1)	(2)	(3)	(4)
	Bankruptcy_Truncate=1		Default_Truncate =1	
$1Age_{\leq 4_{i,h}}$	-0.017* (0.009)	-0.025** (0.011)	-0.039* (0.023)	-0.047* (0.027)
$1Age_{5-9_{i,h}}$	-0.010 (0.007)	-0.018* (0.009)	-0.011 (0.017)	-0.019 (0.023)
$1Age_{10-17_{i,h}}$		-0.008 (0.006)		-0.009 (0.014)
$1Female_{i,h}$	-0.006*** (0.000)	-0.006*** (0.000)	-0.020*** (0.001)	-0.020*** (0.001)
Observations	291,074	291,074	291,074	291,074
R-squared	0.499	0.517	0.520	0.532
Cohort FE	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes

Notes: The table rerun the baseline results with the dependent variables truncated. The dependent variables are equal to 1 only if the individual is younger than the youngest sibling's age in 2012 at declaring bankruptcy or default.  $1Age_{\leq 4_{i,h}}$ ,  $1Age_{5-9_{i,h}}$  and  $1Age_{10-17_{i,h}}$  are binary variables equal to 1 if the parents declared bankruptcy before the child  $i$  was 4, between the ages of 5 and 9, or between the ages of 10 and 17, respectively. The gender of the children, cohort fixed effects, and household fixed effects are included in the regressions. Standard errors are clustered at the household level and are reported in parentheses. \*, \*\*, \*\*\* denote statistically significant levels at 10%, 5% and 1%, respectively.

**Table 6 Robustness Tests: Different Definitions of Age Groups**

<i>DV</i>	(1)	(2)	(3)	(4)	(5)	(6)
	Bankruptcy=1			Default=1		
<b>1Age-4<sub>i,h</sub></b>	-0.050*** (0.016)			-0.110*** (0.035)		
<b>1Age5-9<sub>i,h</sub></b>	-0.046*** (0.014)			-0.070** (0.027)		
<b>1Age10-17<sub>i,h</sub></b>	-0.019** (0.008)			-0.030* (0.017)		
<b>1Age ≤ 8<sub>i,h</sub></b>		-0.025** (0.010)			-0.047** (0.020)	
<b>1Age ≤ 10<sub>i,h</sub></b>			-0.023** (0.010)			-0.044** (0.021)
<b>1Female<sub>i,h</sub></b>	-0.009*** (0.001)	-0.009*** (0.001)	-0.009*** (0.001)	-0.031*** (0.001)	-0.031*** (0.001)	-0.009*** (0.001)
Observations	291,074	291,074	291,074	291,074	291,074	291,074
R-squared	0.499	0.499	0.499	0.520	0.520	0.499
Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table reports the average probability of bankruptcy and default of children whose parents declared bankruptcy at different ages. *1Age-4<sub>i,h</sub>*, *1Age5-9<sub>i,h</sub>*, *1Age10-17<sub>i,h</sub>*, *1Age ≤ 8<sub>i,h</sub>* and *1Age ≤ 10<sub>i,h</sub>* are binary variables equal to 1 if the parents declared bankruptcy when the child was aged under 4, between the ages of 5 and 9, between the ages of 10 and 17, under 8 and 10, respectively. The gender of the children, cohort fixed effects, and household fixed effects are included in the regressions. Standard errors are clustered at the household level and are reported in parentheses. \*, \*\*, \*\*\* denote statistically significant levels at 10%, 5% and 1%, respectively.

**Table 7 Probability of Being Charged in Traffic Accidents**

<i>DV</i>	(1)	(2)
	Traffic Accidents=1	
$1Age \leq 4_{i,h}$	-0.001 (0.023)	-0.009 (0.025)
$1Age 5-9_{i,h}$	-0.002 (0.016)	-0.005 (0.019)
$1Female_{i,h} * 1Age \leq 4_{i,h}$		0.018 (0.021)
$1Female_{i,h} * 1Age 5-9_{i,h}$		0.008 (0.018)
$1Female_{i,h}$	-0.060*** (0.001)	-0.060*** (0.001)
Observations	291,074	291,074
R-squared	0.470	0.470
Cohort FE	Yes	Yes
Household FE	Yes	Yes

Notes: The table reports the average probability of children whose parents declared bankruptcy at different ages being charged as defendants in traffic accidents.  $1Age \leq 4_{i,h}$  and  $1Age 5-9_{i,h}$  are binary variables equal to 1 if the parents declared bankruptcy when the child  $i$  was under 4, or between the ages of 5 and 9, respectively. The gender of the children, cohort fixed effects, and household fixed effects are included in the regressions. Standard errors are clustered at the household level and are reported in parentheses. \*, \*\*, \*\*\* denote statistically significant levels at 10%, 5% and 1%, respectively.

**Table 8 Probability of Company Ownerships**

<i>DV</i>	(1)	(2)
	Company Owner =1	
$1Age \leq 4_{i,h}$	0.008 (0.016)	0.011 (0.017)
$1Age5-9_{i,h}$	-0.001 (0.011)	-0.012 (0.013)
$1Female_{i,h} * 1Age \leq 4_{i,h}$		-0.010 (0.015)
$1Female_{i,h} * 1Age5-9_{i,h}$		0.022* (0.013)
$1Female_{i,h}$	-0.009*** (0.001)	-0.009*** (0.001)
Observations	291,074	291,074
R-squared	0.501	0.501
Cohort FE	Yes	Yes
Household FE	Yes	Yes

Notes: The table reports the average probability of becoming company owners (excluding proprietorships) of children whose parents declared bankruptcy at different ages.  $1Age \leq 4_{i,h}$  and  $1Age5-9_{i,h}$  are binary variables equal to 1 if the parents declared bankruptcy before the child  $i$  was 4, or when the child was between the ages of 5 and 9, respectively. The gender of the children, cohort fixed effects, and household fixed effects are included in the regressions. Standard errors are clustered at the household level and are reported in parentheses. \*, \*\*, \*\*\* denote statistically significant levels at 10%, 5% and 1%, respectively.

**Table 9 Asymmetric Impact of Parental Bankruptcy by the Parent-Child Gender**

<i>DV</i>	(1) Bankruptcy=1	(2) Default=1
<b>1Mother<sub>h</sub>*1Female<sub>i,h</sub></b>	-0.016* (0.009)	-0.026** (0.011)
<b>1Female<sub>i,h</sub></b>	-0.009*** (0.001)	-0.033*** (0.001)
Observations	291,074	291,074
R-squared	0.499	0.480
Cohort FE	Yes	Yes
Household FE	Yes	Yes

Note: The table reports the impact of parents' bankruptcy events on children's adulthood financial behavior by the gender of the bankrupt parent and the gender of the children. *1Mother<sub>h</sub>* is a binary variable equal to 1 if a mother in the household declares bankruptcy. *1Female<sub>i,h</sub>* is a binary variable equal to 1 for females. Cohort fixed effects and household fixed effects are included in the regressions. Standard errors are clustered at the household level and are reported in parentheses. \*, \*\*, \*\*\* denote statistically significant levels at 10%, 5% and 1%, respectively.