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Parental death in childhood and stock market participation: Cross-cultural insights☆

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ABSTRACT

This paper examines cross-country differences in the relationship between traumatic experience in childhood and household stock market participation. We find that US households that experience the death of a parent during childhood are less likely to participate in the stock market. Conversely, experiencing parental death in childhood does not affect stockholdings in China. Further analyses show that the results can be partially explained by the cultural differences between the two countries. Specifically, due to China's emphasis on collectivistic values, Chinese bereaved children are less sensitive to traumatic experience and more likely to receive financial support from in-group members that can "cushion" the adverse impact of parental death. We obtain similar conclusions out-of-sample when extending the analyses to Korean versus English households as well as to other European countries. Overall, our paper highlights novel interactions between personal experience and the cultural environment in shaping financial decision-making behavior.

1. Introduction

This study examines and contrasts how individualistic and collectivistic cultures influence the relationship between early-life traumatic experience and financial decision-making. While the existing literature finds that traumatic events, such as the Great Depression, natural disasters, and violence or wars, have long-lasting scarring effects on risk-taking behavior (Bernile et al., 2017; Bharath and Cho, 2023; Kim et al., 2014; Knüpfer et al., 2017; Kong et al., 2021a; Malmendier and Nagel, 2011), cross-cultural evidence on how early-life traumatic experience is related to households' financial decision-making remains limited. Collectivistic

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cultures may influence how individuals respond to traumatic experiences, since individuals in collectivist societies receive more family support, which can reduce sensitivity to trauma-induced disorders and enhance resilience to stress (e.g., Ozbay et al., 2007). Our study fills this important gap by i) examining the relationship between parental death in childhood and household stock market participation in adulthood in two polar opposite cultural settings: the US and China, and ii) investigating how individualistic and collectivistic values shape this relationship. We also provide cross-cultural evidence from multiple countries to further support our findings.

Prior studies find that cultural and environmental conditions in early life can have significant impact on children's development and subsequent decision-making in adulthood. Specifically, early-life traumatic experience can lead to changes in psychological and personal biases as well as changes in the brain's region pertaining to decision-making. These changes are observed in childhood and remain well into adulthood (e.g., Danese and McEwen, 2012). Consistent with this, prior studies find that traumatic experiences in early life have long-lasting scarring effects on individuals' financial decision-making. For example, "Depression Babies" who experience significant financial and emotional trauma during the Great Depression shy away from taking financial risks even several decades later (Malmendier and Nagel, 2011). In addition, people exposed to the Korean War in childhood are more risk averse five decades later (Kim and Lee, 2014). Our study focuses on the trauma of experiencing parental death in childhood, which is considered one of the most overwhelming and painful events in one's life given the irreplaceable relationships between parents and children.

From a national culture perspective, individualistic and collectivistic cultures may shape how childhood parental death experiences are associated with financial risk-taking in adulthood. Specifically, individuals from collectivistic cultures could be more likely to adapt and recover from the trauma, whereas those from individualistic cultures are more prone to carrying lasting scars that shape their financial decisions. First, collectivistic cultures focus on relationships, social networks, and support systems, while individualistic cultures emphasize self-reliance and personal responsibility (Hsee and Weber, 1999; Kashyap and Hussain, 2018; Mullen, 1994; Summerfield, 2004). Bereaved children in collectivistic countries may receive more familial protection and support during their childhood, potentially leading them to perceive lower risks and become less risk averse than their individualistic counterparts, who have to personally bear losses from their decision-making. Second, collectivistic cultures focus on social harmony and often discourage the open expression of negative emotions. Conversely, individualistic cultures emphasize self-expression, encouraging individuals to freely express their emotions and vulnerability following traumatic events (Kashyap and Hussain, 2018; Mullen, 1994; Summerfield, 2004). Consistent with this, existing literature shows that Chinese and American bereaved individuals have different grief processes. For instance, while grief processing has been shown to cause long-term distress and poor perceived health among Americans, it does not significantly predict future psychological distress among Chinese individuals (Bonanno et al., 2005; Lalande and Bonanno, 2006). Thus, individuals who experience parental death in childhood in individualistic societies may be more sensitive to risky investment in adulthood than those in collectivistic countries.

Drawing from this literature, our main analyses examine the relationship between parental death in childhood and household stock market participation in the world's first and second largest economies, characterized by substantial differences in individualism-collectivism cultural values—the US (individualistic) and China (collectivistic). Using comparable, longitudinal, and nationally representative household survey datasets from the US and China, we find that households that experience parental death in childhood are approximately 1.8 % less likely to hold stocks and/or mutual funds in the US sample. Conversely, in the Chinese sample, experiencing early parental death does not relate to a lower stock market participation rate. Our regressions control for a large comparable set of household demographics, wealth, childhood characteristics, as well as current location-year fixed effects and childhood location-year fixed effects. We also conduct several tests to show that our results are not driven by differences between the Chinese and US samples in their exposure to the stock market.

We further generalize our findings by showing cross-country evidence,[1] including (1) an alternative analysis using Korea (collectivistic) versus England (individualistic) and (2) a broad comparable household survey dataset from 21 European countries and Israel to account for variations in the levels of individualism across different countries. Consistent with our main results, households that experience parental death in childhood in individualistic societies are less likely to invest in stocks than their collectivistic counterparts.

Finally, we analyze two possible cultural mechanisms underlying the relationship between parental death in childhood and stock market participation across the US (individualistic) and China (collectivistic). The first mechanism, *family financial support,* is rooted in Hsee and Weber's (1999) cushion hypothesis, which states that collectivistic cultures like China provide stronger in-group support, acting as a "cushion" against the potentially severe consequences of negative events. The second mechanism, *sensitivity to trauma*, posits that whereas collectivistic cultures discourage negative self-expression and focuses less attention on the personal experience, individualistic cultures encourage people to freely express their vulnerability (e.g., Bonanno et al., 2005; Lalande and Bonanno, 2006), making Americans more sensitive to adverse experiences. Consistent with these mechanisms, we find that Chinese children who experience parental death in childhood are more likely to receive financial support from family members and/or friends or neighbors and are less sensitive to trauma relative to those early-bereaved American counterparts.

Our study makes several contributions to the literature on the interactions between the cultural environment, personal experiences, and decision-making. Reviewing empirical research linking Hofstede's cultural dimensions to international business matters, Kirkman et al. (2006) highlight the importance of testing for the interaction effects of cultural values in cross-country research and behavioral decision-making. Similarly, Chui and Kwock (2008) argue that we need more research to understand the effects of personal experiences and national culture on financial decision-making. Our study is therefore a response to these calls, and our findings provide new

[1] We do not use these surveys as main datasets because the HRS and CHARLS offer more comprehensive variables, allowing us to explore the mechanisms through which parental death affects stock market participation decisions in the later section.

evidence that serves as a steppingstone for further research on household economics in this area.

First, we join a growing body of research that examines the relationship between cultural values and financial decision-making behavior across countries. Recent research suggests that cultures in a country, such as gender norms (Ke, 2018), trust levels (Guiso et al., 2008; An et al., 2022), and corruption norms (DeBacker et al., 2015), can explain cross-country differences in financial outcomes. Being one of the first studies to explore household financial decisions from a national culture perspective, we advance this literature by documenting important interactive effects between personal experience and the cultural environment that can partially explain the cross-country differences in household behavior. Specifically, we show that the *same* personal (traumatic) experience corresponds *differently* to household decision-making, depending on the underlying cultural values of the country.

Second, our work is related to the literature on how financial behavior can be shaped by adverse experience. Unlike prior studies which mainly focus on adverse experience of highly successful and financially sophisticated individuals such as CEOs or managers (Bernile et al., 2017; Betzer et al., 2021; Chen et al., 2021; Liu et al., 2023; Kong et al., 2021a), we use a much more general setting for *laypeople's* financial decisions. Furthermore, rather than focusing on *collectively experienced* events such as macroeconomic shocks (Malmendier and Nagel, 2011), natural disasters (Bernile et al., 2017), and wars or conflicts (Kim and Lee, 2014; Voors et al., 2012), we utilize a plausibly exogenous *individual-specific* event and demonstrate that it can have a long-lasting effect on financial decision-making later in life. To the best of our knowledge, this is the first study that examines the relationship between *idiosyncratic* early-life traumatic experience and financial risk-taking decisions among households.

Third, we add to antecedent literature on the stock market participation puzzle and how the low household stock market participation rate may be explained by housing wealth (Kong et al., 2021b), social interaction (Hong et al., 2004), corporate scandals (Giannetti and Wang, 2016), political uncertainty (Agarwal et al., 2022), and natural disasters (Bharath and Cho, 2023). Our findings indicate that personal experience and cultural circumstances can also explain why some individuals do not participate: regardless of wealth, negative personal experience can deter households from participating in risky stock markets.

2. Data and methodology

2.1. Data

We use two comparable household survey datasets for the US and China. Both survey datasets are longitudinal and nationally representative. Our US data come from the Health and Retirement Study (HRS), a survey of approximately 20,000 middle-aged and older people in America. The survey is conducted by the University of Michigan and funded by the National Institute on Aging and the Social Security Administration. It was first implemented in 1992 and the respondents are followed up every two years. Our US sample includes fourteen HRS survey waves between 1992 and 2018.

Our Chinese data come from the China Health and Retirement Longitudinal Study (CHARLS). The CHARLS can be regarded as a sister study of the HRS because it is designed to ensure comparability with the HRS. Both surveys share similar questionnaire structures and targeted respondents. Specifically, the CHARLS has interviewed middle-aged and older Chinese residents every two or three years since 2011 and is supported by Peking University. Our Chinese sample includes four CHARLS survey waves between 2011 and 2018.

To enable international comparisons, the Gateway to Global Aging Data team harmonizes the survey measures and variables in the HRS with those in other international surveys from the HRS family, including the CHARLS. This is to ensure that the survey variables across countries are as closely comparable as possible.[2] Our analyses are therefore based on the variables in the RAND HRS, Harmonized HRS, and Harmonized CHARLS, which ensures that the variables in the US and Chinese samples are highly comparable.[3] For certain variables that are not provided in the harmonized datasets, we use the raw data from the HRS and the CHARLS.

Both datasets report comprehensive socioeconomic and life history information of the financial respondent and their spouse. These include demographic characteristics (e.g., education, age, marital status), financial characteristics (e.g., household total wealth and income), and childhood characteristics such as information about parents, childhood location, and childhood financial situation. The detailed childhood characteristics in both datasets allow us to isolate the early parental death effect from other potential confounding childhood characteristics such as family financial conditions, health, or parental education levels.

2.2. Empirical model

To estimate the relationship between parental death in childhood and household stock market participation, we use the following empirical model:[4]

$$Household\,Stock\,Market\,Participation_{it} = \alpha_{it} + \beta_1 \times Childhood\,Parental\,Death_i$$

[2] For more details on the harmonized measures, see the website of the Gateway to Global Aging Data https://g2aging.org/

[3] The RAND HRS is a subset of the HRS designed to increase usability created by the RAND Center for the Study of Aging. The naming conventions of the Harmonized CHARLS variables are similar to those of the RAND HRS, Harmonized HRS, and other Harmonized variables.

[4] We estimate our specifications using ordinary least squares (OLS) because we have a large number of fixed effects along several dimensions and using Logit or Probit result in an incidental parameters problem. In unreported tests, we find that our results still hold when using Logit and Probit models.

$$+Controls_{it} + Fixed\,Effects_{it} + \varepsilon_{it}. \quad (1)$$

The dependent variable *Household Stock Market Participation*$_{it}$ is a dummy variable that equals one if household *i* holds stocks or mutual funds in survey year *t* and zero otherwise (Hong et al., 2004; Ke, 2021).[5] The main explanatory variable of interest, *Childhood Parental Death*$_i$, is a dummy variable that equals one if the financial respondent in household *i* experiences parental death between five and 15 years of age and zero otherwise. The financial respondent is the member of the household specifically designated to provide information about the household's financial situation. This person is supposed to be the most knowledgeable person about household financial assets and the primary financial decision-maker in the household (Smith et al., 2010).[6] We follow the prior literature (e.g., Bernile et al., 2017; Chen et al., 2021) and focus on parental deaths occurring between five and 15 years of age because this period is viewed as the formative years for forming early memories. The adverse events experienced during this period are likely to have a long-lasting impact on subsequent decision-making behavior in adulthood (Usher and Neisser, 1993). We show in Section 6 that our results are not driven by any specific age cutoffs.

Following prior studies (e.g., Guisoet al., 2008; Ke, 2021), we include a comprehensive set of control variables, *Controls*$_{it}$, that may be correlated with parental death in childhood and potentially affect household stock market participation. Specifically, we start with a set of demographic characteristics of the financial respondent, including their gender (*Male*), marital status (*Married*) as well as *Age, Age*^{2}*, Years of education*, and the number of people living in the household (*Family Size*). We also include dummy variables that equal one if the financial respondent is currently working (*Working*), has a religious preference (*Has religious preferences*), lives in a rural area (*Rural*), has their longest job tenure in one of the Finance, Insurance, or Real Estate industries in the US sample or whose major is in economics or management in the Chinese sample (*Work in finance*), and is non-white or Hispanic in the US sample or belongs to one of the fifty-five minority ethnic groups in Chinese sample (*Minority*).

We further control for the financial respondent's childhood characteristics. This is to alleviate the concern that parental deaths are not random and can be driven by poor health or poor financial conditions in childhood. In particular, we include the financial respondent's *Father's years of education, Mother's years of education*, and dummy variables that equal one if the financial respondent has *Poor health in childhood, Poor financial situation in childhood*, a father who was unemployed in childhood (*Father's unemployment in childhood*), and a father who belonged to the working class in childhood (*Father's job in childhood*).[7]

Finally, we also control for several household financial characteristics, including the natural logarithm of the household wealth (*Ln (Current wealth*)), the natural logarithm of the household income (*Ln(Current income*)), and a dummy variable indicating whether the household owns a primary residence (*House ownership*). The wealth-related controls capture the household's current wealth in the survey year and are important to isolate the effect of wealth from that of parental death in childhood on stock market participation. The detailed definitions of all variables are provided in the Appendix 1. Each variable definition also includes the specific question asked in the respective household survey.

Our regressions also include a large set of *Fixed Effects*$_{it}$. First, we include current location fixed effects interacted with survey year fixed effects. In the US sample, current location is defined at the Census division level, whereas in the Chinese sample, location is defined at the province level. By adding current location-year fixed effects, we are comparing two otherwise similar households located in the same location in the same year, one with and one without the parental death in childhood experience. Current location-year fixed effects thus control for all time-varying local characteristics, such as socioeconomic conditions, local business cycles, and housing demands. Importantly, they also account for time-varying growth in investment opportunities and the type of investment opportunities accessible to households at a granular local level.

Second, we also include childhood location fixed effects interacted with survey year fixed effects. Childhood locations are likely to affect an individual's access to education, upward mobility, and employment opportunities, which may be correlated with parental deaths and thus shape subsequent stock market participation. Interacting childhood location with year further controls for current socioeconomic conditions and investment opportunities at the childhood location which could affect household financial decision-making.[8]

Table 1 presents summary statistics on the variables included in our analyses in the US sample (Panel A) and Chinese sample (Panel B). Our US sample includes 96,338 household-year observations from 1992 to 2018. The Chinese sample includes 11,127 household-year observations between 2011 and 2018. The proportion of Chinese households that experience parental death between five and 15 years of age is 13.3 %, which is higher than that of US households (4.4 %). The Great Chinese Famine of the 1960s—a period between 1959 and 1961 that witnessed widespread famine, causing 15–55 million estimated deaths—largely contributes to the high parental death in childhood rate in our Chinese sample. We later perform several tests to show that our results are not driven by the Great Chinese Famine.

[5] This measure includes stockholdings in non-retirement accounts only (Hong et al., 2004; Ke, 2021).

[6] In Section 6, we show that our results remain robust when we construct the parental death variable at the household-level, that is, when either member of the household—the financial respondent or their spouse— experiences parental death in childhood. We similarly show that our results are robust to restricting the sample to single households only.

[7] Mother's job in childhood and unemployment in childhood are not available in the data.

[8] For example, households could be home biased and are influenced by investment opportunities at their childhood location.

Table 1
Summary Statistics.

Panel A: The HRS sample

	Observations	Mean	Std. Dev	Median	P5	P95
Key independent variable						
Parental death in childhood	96,338	0.044	0.204	0.000	0.000	0.000
Key dependent variable						
Household stock market participation	96,338	0.257	0.437	0.000	0.000	1.000
Demographic variables						
Age	96,338	64.183	9.393	63.000	51.000	81.000
Male	96,338	0.473	0.499	0.000	0.000	1.000
Married	96,338	0.578	0.494	1.000	0.000	1.000
Years of education	96,338	13.005	3.031	13.000	8.000	17.000
Family size	96,338	2.243	1.260	2.000	1.000	5.000
Working	96,338	0.479	0.500	0.000	0.000	1.000
Minority	96,338	0.282	0.450	0.000	0.000	1.000
Work in finance	96,338	0.051	0.221	0.000	0.000	1.000
Has religious preferences	96,338	0.923	0.266	1.000	0.000	1.000
Rural	96,338	0.289	0.453	0.000	0.000	1.000
Financial variables						
House ownership	96,338	0.772	0.419	1.000	0.000	1.000
Ln(Current wealth)	96,338	15.367	0.144	15.324	15.293	15.580
Ln(Current income)	96,338	10.412	1.571	10.571	8.756	12.157
Current wealth (in 10 thousand dollars)	96,338	39.645	145.567	13.700	−0.080	145.500
Current income (in 10 thousand dollars)	96,338	6.598	25.438	3.900	0.635	19.040
Childhood variables						
Poor health in childhood	96,338	0.013	0.114	0.000	0.000	0.000
Poor financial situation in childhood	96,338	0.274	0.446	0.000	0.000	1.000
Father's years of education	96,338	9.520	4.107	10.000	2.000	16.000
Mother's years of education	96,338	9.896	3.720	11.000	3.000	16.000
Father's unemployment in childhood	96,338	0.000	0.003	0.000	0.000	0.000
Father's job in childhood	96,338	0.798	0.401	1.000	0.000	1.000

Panel B: The CHARLS sample

	Observations	Mean	Std. Dev	Median	P5	P95
Key independent variable						
Parental death in childhood	11,127	0.133	0.339	0.000	0.000	1.000
Key dependent variable						
Household stock market participation	11,127	0.012	0.108	0.000	0.000	0.000
Demographic variables						
Age	11,127	61.789	9.718	62.000	47.000	78.000
Male	11,127	0.543	0.498	1.000	0.000	1.000
Married	11,127	0.772	0.419	1.000	0.000	1.000
Years of education	11,127	5.529	4.115	6.000	0.000	12.000
Family size	11,127	3.002	1.618	2.000	1.000	6.000
Working	11,127	0.608	0.488	1.000	0.000	1.000
Minority	11,127	0.084	0.278	0.000	0.000	1.000
Work in finance	11,127	0.002	0.046	0.000	0.000	0.000
Has religious preferences	11,127	0.661	0.473	1.000	0.000	1.000
Rural	11,127	0.797	0.402	1.000	0.000	1.000
Financial variables						
House ownership	11,127	0.797	0.402	1.000	0.000	1.000
Ln(Current wealth)	11,127	15.811	0.163	15.783	15.772	15.884
Ln(Current income)	11,127	8.878	2.490	9.401	4.615	11.544
Current wealth (in 10 thousand Yuan)	11,127	47.935	471.840	5.616	−2.692	81.515
Current income (in 10 thousand Yuan)	11,127	3.034	8.238	1.210	0.010	10.320
Childhood variables						
Poor health in childhood	11,127	0.130	0.336	0.000	0.000	1.000
Poor financial situation in childhood	11,127	0.396	0.489	0.000	0.000	1.000
Father's years of education	11,127	2.419	3.406	0.000	0.000	9.000
Mother's years of education	11,127	0.590	1.879	0.000	0.000	6.000
Father's unemployment in childhood	11,127	0.026	0.159	0.000	0.000	0.000
Father's job in childhood	11,127	0.822	0.383	1.000	0.000	1.000

This table reports the descriptive statistics of the variables in our US and Chinese samples. Panel A shows the US Health and Retirement Study (HRS) sample from 1992 to 2018. Panel B performs China Health and Retirement Longitudinal Study (CHARLS) sample from 2011 to 2018. Variables are defined in Appendix 1.

3. Main results

3.1. Baseline results

Table 2 reports the baseline results that examine the relationship between parental death in childhood and households' stock market participation. Columns (1) to (3) present the results using the US sample, whereas Columns (4) to (6) show the results using the Chinese sample. Model specifications vary across columns in terms of the control variables and fixed effects included. In Columns (1) and (4), we start with a basic model that includes only household characteristics and current location-year fixed effects. We then progressively include wealth-related variables in Columns (2) and (5), and childhood variables and childhood location-year fixed effects in Columns (3) and (6).

Across all specifications in the US sample, the coefficients on *Parental death in childhood* are negative and statistically significant below the 1 % level, thus indicating that parentally bereaved children are less likely to hold risky assets in their adulthood. The estimated effects are economically meaningful. For instance, the magnitude in Column (3), which includes the full set of control variables and fixed effects, indicates that households with financial respondents who experience parental loss in childhood are approximately 1.8 % less likely to hold stocks and/or mutual funds. The magnitude of the parental death in childhood effect is comparable to those of other determinants of household stock market participation such as the financial respondent's gender (2.2 %) and their years of education (1.8 %).

It is also worth noting that the estimated coefficients on parental death in childhood are relatively stable across all columns in the US sample. For example, the estimation changes only slightly from −0.0153 (in Column (2)) to −0.0177 (in Column (3)) after we additionally control for childhood variables and childhood location-year fixed effects. This suggests that controlling for childhood variables does not materially affect our estimation.

Interestingly, we obtain a very different result when analyzing the Chinese sample. The coefficients on *Parental death in childhood* are statistically insignificant across Columns (4)–(6), and the magnitude of the parental death effect on household risky asset holdings in China is close to zero. The magnitude of the estimation is insensitive to the control variables and fixed effects included in the regressions and, as shown in robustness tests in Section 6, this effect continues to hold under different econometric specifications and across different subsamples. Thus, in contrast to US households, the experience of parental death in childhood does not reduce Chinese households' propensity to participate in the stock market in adulthood.

In Section 5, we perform additional analyses to understand the mechanisms underlying these findings. We find that our results can be partially explained by cultural differences in individual sensitivity to trauma and the levels of family financial support they receive after losing a parent.

3.2. Are the results driven by differences between the US and Chinese samples?

One concern is that our results can be partially driven by differences between the Chinese and US samples in exposure to the stock market in addition to cultural differences. We present two analyses to alleviate this concern: (1) a within-US analysis that exploits variations in Chinese heritage and (2) a cross-US-China analyses to control time-varying country-level characteristics.

3.2.1. Within-US variation in Chinese heritage

In Panel A of Table 3, we focus on US households and exploit variations in their ethnic origins. This within-US approach allows us to differentiate between the Chinese heritage across different geographical locations within the US while controlling for the institutional and economic environment faced by American households. The broad idea is that, because culture is slow moving (see Glazer and Moynihan, 1963), the local population in locations with a high ratio of Chinese heritage would exhibit a greater resemblance in Chinese cultural traits than those in locations with a low ratio of Chinese heritage.

Data on Chinese heritage come from the Integrated Public Use Microdata Series. We proxy for Chinese heritage using four variables: 1) *Chinese ancestry* (the fraction of respondents whose first or second self-reported ancestry or ethnic origin is Chinese), 2) *Chinese* (the fraction of respondents whose ethnicity is Chinese), 3) *Chinese-speaking* (the fraction of respondents who speak Chinese at home), and 4) *Born in China* (the fraction of respondents whose birthplace is China). The data are reported at the division level to protect the privacy of individual households. Our main coefficients of interest are the interaction terms between parental death in childhood and the Chinese heritage. Chinese heritage measures the differential impact of parental death on stock market participation between US locations with a high ratio of Chinese heritage and those with a low ratio of Chinese heritage.

Panel A of Table 3 displays the results. Consistent with our predictions, the Coefficients on the interaction terms are positive and statistically significant across all columns. Thus, the relationship between parental death in childhood and stock market participation is significantly less negative for US households in locations with a high ratio of Chinese heritage relative to those in locations with a low ratio of Chinese heritage. This within-US approach further alleviates the concern that our results are driven by differences in exposure to the stock market and economies between the Chinese and US samples.

3.2.2. Cross-country analyses of the US and China

In Panel B of Table 3, we follow Guiso et al. (2003) to combine our US and Chinese samples into one single sample and run a cross-country regression. The primary advantage of this approach is that it allows us to directly control for time-varying country-level characteristics that could affect stock participation rates, such as the economic growth and types of investment opportunities in each country. Our main coefficient of interest is the interaction term *Parental death in childhood* x *US sample*, which measures the differential

Table 2
Baseline Regressions.

Dependent variable:	*Household stock market participation*					
Sample:	US			China		
	(1)	(2)	(3)	(4)	(5)	(6)
Parental death in childhood	−0.0272***	−0.0153***	−0.0177***	0.0024	0.0022	0.0015
	(0.0058)	(0.0056)	(0.0056)	(0.0026)	(0.0026)	(0.0025)
Age	−0.0018	−0.0080***	−0.0068***	−0.0008	−0.0007	−0.0006
	(0.0016)	(0.0016)	(0.0016)	(0.0012)	(0.0012)	(0.0010)
Age^2	0.0039***	0.0073***	0.0068***	0.0004	0.0004	0.0003
	(0.0012)	(0.0012)	(0.0012)	(0.0010)	(0.0010)	(0.0008)
Male	0.0342***	0.0253***	0.0223***	−0.0046**	−0.0045*	−0.0019
	(0.0028)	(0.0033)	(0.0032)	(0.0023)	(0.0023)	(0.0022)
Married	0.1001***	0.0315***	0.0310***	0.0050**	0.0037	0.0004
	(0.0029)	(0.0035)	(0.0035)	(0.0025)	(0.0025)	(0.0022)
Years of education	0.0307***	0.0204***	0.0175***	0.0024***	0.0021***	0.0014***
	(0.0004)	(0.0007)	(0.0007)	(0.0004)	(0.0003)	(0.0003)
Family size	−0.0150***	−0.0104***	−0.0102***	−0.0019***	−0.0026***	−0.0016***
	(0.0010)	(0.0010)	(0.0010)	(0.0006)	(0.0006)	(0.0006)
Working	0.0023	−0.0216***	−0.0238***	−0.0079***	−0.0084***	−0.0044**
	(0.0030)	(0.0030)	(0.0030)	(0.0022)	(0.0022)	(0.0020)
Minority	−0.1489***	−0.1047***	−0.0873***	−0.0008	−0.0013	−0.0004
	(0.0028)	(0.0036)	(0.0037)	(0.0042)	(0.0041)	(0.0042)
Work in finance	0.0794***	0.0550***	0.0521***	0.1961**	0.1915**	0.1733**
	(0.0067)	(0.0069)	(0.0069)	(0.0851)	(0.0847)	(0.0851)
Has religious preferences	−0.0127**	−0.0092*	−0.0053	−0.0036	−0.0036	−0.0027
	(0.0051)	(0.0049)	(0.0049)	(0.0034)	(0.0034)	(0.0033)
Rural	−0.0455***	−0.0364***	−0.0306***	−0.0208***	−0.0180***	−0.0123***
	(0.0031)	(0.0031)	(0.0031)	(0.0026)	(0.0024)	(0.0028)
House ownership		0.0701***	0.0715***		0.0012	0.0024
		(0.0054)	(0.0055)		(0.0026)	(0.0025)
Ln(Current wealth)		0.7415***	0.7336***		0.0337***	0.0270***
		(0.1034)	(0.1033)		(0.0076)	(0.0059)
Ln(Current income)		0.0210***	0.0209***		0.0023***	0.0013***
		(0.0017)	(0.0017)		(0.0004)	(0.0004)
Poor health in childhood			−0.0298***			0.0056*
			(0.0091)			(0.0029)
Poor financial situation in childhood			0.0038			−0.0047***
			(0.0029)			(0.0017)
Father's years of education			0.0033***			0.0008**
			(0.0004)			(0.0004)
Mother's years of education			0.0022***			0.0007
			(0.0005)			(0.0009)
Father's unemployment in childhood			−0.1058***			0.0038
			(0.0223)			(0.0056)
Father's job in childhood			−0.0167***			−0.0136
			(0.0041)			(0.0039)
Survey year*Current location FE	YES	YES	YES	YES	YES	YES
Survey year*Childhood location FE	NO	NO	YES	NO	NO	YES
N	96,338	96,338	96,338	11,127	11,127	11,127
R2	0.152	0.222	0.227	0.059	0.064	0.220

This table reports regressions that estimate the relationship between parental death in childhood and household stock market participation. The dependent variable is a dummy that equals one if the household holds stocks or mutual funds. The main independent variable of interest is *Parental death in childhood*, which is a dummy that equals one if the financial respondent experiences parental death between five and 15 years of age. Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

impact of parental death in childhood on stock market participation across the US and the Chinese samples.[9]

In Column (1), we include country-level characteristics that capture investment opportunities (*GDP growth* and *Stock return*) and housing market (*Real residential property prices*) for each country in each survey year. Consistent with our main findings, the association between parental death in childhood and stock market participation is significantly more negative in the US relative to China. In Column (2), instead of adding country-level control variables, we include country-year fixed effects to absorb all time-varying country-level characteristics that may affect stock market participation. We continue to find that the negative association between parental death in childhood and stock market participation is stronger in the US relative to China. Notably, the magnitude of the coefficient estimates on *Parental death in childhood* x *US sample* remains stable across columns, implying that our results are largely orthogonal to

[9] To conduct the US-China cross-country analysis, we restrict the US sample to 2012–2018 (i.e., the last four waves) to sync with the Chinese sample period.

Table 3
Within-US Variation in Chinese Heritage and Cross-US-China Analyses.

Panel A: Within-US variation in Chinese heritage				
Dependent variable:	*Household stock market participation*			
Sample:	US			
	(1)	(2)	(3)	(4)
Parental death in childhood	−0.0308***	−0.0293***	−0.0289***	−0.0290***
	(0.0088)	(0.0087)	(0.0087)	(0.0087)
*Parental death in childhood*Chinese ancestry*	0.0116**			
	(0.0056)			
*Parental death in childhood*Chinese*		0.0122*		
		(0.0065)		
*Parental death in childhood*Chinese-speaking*			0.0151*	
			(0.0083)	
*Parental death in childhood*Born in China*				0.0160*
				(0.0087)
Control variables	YES	YES	YES	YES
Survey year*Current location FE	YES	YES	YES	YES
Survey year*Childhood location FE	YES	YES	YES	YES
N	76,103	76,103	76,103	76,103
R2	0.234	0.234	0.234	0.234
Panel B: Cross-US-China analyses between the US and China				
Dependent variable:	*Household stock market participation*			
Sample:	US and China			
	(1)		(2)	
*Parental death in childhood*US sample*	−0.0328***		−0.0328***	
	(0.0093)		(0.0093)	
Parental death in childhood	0.0124***		0.0124***	
	(0.0043)		(0.0043)	
US sample	0.2044***			
	(0.0523)			
Stock return	−0.1493**			
	(0.0748)			
GDP growth	0.0017			
	(0.0044)			
Real residential property prices	−0.0024**			
	(0.0011)			
Control variables	YES		YES	
Survey year FE	YES		YES	
Survey year*Country FE	NO		YES	
N	44,851		44,851	
R2	0.265		0.265	

This table reports the within-US variation in Chinese heritage and cross-US-China analyses. The dependent variable is a dummy that equals one if the household holds stocks or mutual funds. Panel A reports the within-US variation in Chinese heritage in the US sample. *Chinese ancestry* is the fraction of respondents whose first or second self-reported ancestry or ethnic origin is Chinese at the location. *Chinese* is the fraction of respondents whose race is Chinese at the location. *Chinese-speaking* is the fraction of respondents who speak Chinese at home. *Born in China* is the fraction of respondents whose birthplace is China. Panel B combines the US and Chinese samples into one sample to run cross-US-China analyses. Column (1) includes country-level *GDP growth, Stock return*, and *Real residential property prices*. Column (2) further includes survey year*country fixed effects to absorb all time-varying country-level characteristics. In this analysis, we restrict the US sample to 2012–2018 to sync with the Chinese sample period. We also follow Guiso et al. (2003) and convert *Current income* and *Current wealth* to decile indicator variables and convert *Years of education* and *Father's* and *Mother's Years of Education* into dummies indicating whether they are above the sample median. Control variables are collapsed for brevity and identical to those in Table 2. Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

unobserved heterogeneity across countries that varies over time.

4. Cross-country analyses

Our analysis thus far has focused on the world's two largest economies—the US and China—which are characterized by stark individualistic/collectivistic differences. Another reason for focusing on China and the US is that their household surveys share similar and more comprehensive questionnaires, which facilitates our comparative analyses. In this subsection, we attempt to generalize our results by extending the analysis to multiple countries: first by comparing Korea with England, and second by performing a cross-country analysis of 21 European countries and Israel. We select these countries because of the available household survey data with parental death information in the HRS family.

First, we perform out-of-sample tests by analyzing two alternative countries that show analogous differences in terms of their cultural values: South Korea (a country with a collectivistic culture) and England (a country with an individualistic culture). The Korean sample includes seven survey waves between 2006 and 2018 from the Korean Longitudinal Study of Aging (KLoSA). The English sample includes nine survey waves between 2002 and 2018 from the English Longitudinal Study of Aging (ELSA). Both household surveys are in the HRS family and focus on middle-aged and older households.[10]

Panel A of Table 4 displays the results of Korea/England. In our English sample, parental death in childhood is associated with a 3.4 % lower likelihood of stock market participation in adulthood. In contrast, experiencing early parental death is not associated with a lower stock market participation rate in adulthood in the Korean sample. Thus, similar to our China/US results, the Korea/England evidence confirms that the relationship between parental death in childhood and stockholdings is more negative in countries with more individualistic cultures. This helps extend our main findings to other countries and helps to address concerns that our results could be driven by factors (specific to China or the US) that are not already controlled for in the regressions.

Second, we use a broad sample of European countries from the Survey of Health, Aging, and Retirement from Europe (SHARE) from 2006 to 2019, which includes six survey waves. A dataset incorporating multiple countries with different cultures allows us to account for variations in the levels of individualism across countries. We exclude countries with many missing values for the key variables and/or are missing cultural, risk, and ambiguity aversion indices. Our final sample includes 21 European countries and Israel.

Drawing from our earlier results, we expect the negative relationship between parental death in childhood and stock market participation in adulthood to be stronger in countries with more individualistic cultures. Our main coefficient of interest is therefore the interaction between *Parental death in childhood* and the Hofstede's Individualism (*IDV*) index in the country. Because individualism can be potentially correlated with other cultural dimensions, our regressions also include the interactions between *Parental death in childhood* and Hofstede's *Uncertainty Avoidance (UAI), Masculinity (MAS), Power Distance (PDI),* and *Long-term Orientation (LTO)* indices.[11] Given that we analyze financial risk-taking, we also consider country-level differences in risk and ambiguity aversion by interacting *Parental death in childhood* with Rieger et al.'s (2015) measures of *Ambiguity Aversion, Relative Risk Premium (RRP) in Gains,* and *RRP in Losses*.

Panel B of Table 4 displays the results.[12] We find that the coefficient on the interaction term between *Parental death in childhood* and *IDV* is negative and statistically significant at the 1 % level, indicating that the negative relationship between parental death in childhood experience and risky asset holdings is stronger in countries with more individualistic cultures. In contrast, the interactions between *Parental death in childhood* and other country-level cultural indices are not statistically significant. Overall, the results indicate and confirm that cultural differences, and in particular differences in cultural values related to the degree of individualism/collectivism, play an important role in explaining the negative relationship between parental death in childhood and financial decision-making across countries.

While Hofstede's framework is widely used, one concern is that its individualism dimension reflects the broad societal values about personal goals and independence and may not fully capture variations within a culture regarding family financial support. In a robustness test, we use an alternative index which offers a more detailed and context-specific understanding of family ties and support networks. Following Schulz et al. (2019), we define *Kinship intensity* based on the prevalence of cousin marriage during the 20th century, where a higher value indicates a society that places greater importance on family bonds and group cohesion. As shown in Appendix 2, the coefficient of the interaction term between *Parental death in childhood* and *Kinship intensity* is positive and significant, indicating that the negative relationship between parental death in childhood and stock ownership is weaker in countries with higher kinship intensity. This is consistent with our main findings in Panel B of Table 4 that the relationship is weaker in countries with a stronger emphasis on collectivism.

5. Economic mechanisms

In this section, we explore underlying mechanisms through which the individualism-collectivism nexus moderates the relationship between the experience of parental death in childhood and household stock market participation. As aforementioned, culture in the US is highly individualistic, whereas Chinese society is more collectivistic. Individualistic cultures emphasize independence and self-expression, whereas collectivistic cultures prioritize familial reliance and tend to discourage the open expression of negative emotions in order to maintain social harmony. We evaluate two channels, both rooted in individualistic/collectivistic cultural values, that may affect how American and Chinese individuals respond to negative experience in childhood: (1) the family support channel and (2) the sensitivity to trauma channel.

[10] We do not control for current location-year fixed effects in the English sample and for childhood location-year fixed effects in the Korean sample due to data availability.

[11] *Individualism* describes cultures that emphasize self-reliance and individualistic behavior, *Uncertainty Avoidance* measures the extent to which an individual is uncomfortable with unpredictability and ambiguity, *Masculinity* emphasizes competition, assertiveness, and material success, *Power Distance* measures the importance of hierarchy in a society, and *Long-term Orientation* describes long-term pragmatic cultures with a greater propensity to take calculated risks when making investment choices.

[12] We do not include father's employment status and childhood financial condition in the regressions due to a high number of missing values. Additionally, we do not include the minority variable because equivalent measures of ethnicity/race or minority status are unavailable in SHARE.

Table 4
Evidence from Other Countries.

Panel A: England versus Korea		
Dependent variable:	*Household stock market participation*	
Sample:	England	Korea
	(1)	(2)
Parental death in childhood	−0.0343***	−0.0007
	(0.0110)	(0.0014)
Control variables	YES	YES
Survey year*Current location FE	N/A	YES
Survey year*Childhood location FE	YES	N/A
N	26,240	42,670
R2	0.216	0.031

Panel B: Multiple-country analysis	
Dependent variable:	*Household stock market participation*
Sample:	SHARE
	(1)
*Parental death in childhood*IDV*	−0.1253***
	(0.0457)
*Parental death in childhood*UAI*	−0.0084
	(0.0477)
*Parental death in childhood*PDI*	−0.0092
	(0.0356)
*Parental death in childhood*MAS*	0.0260
	(0.0292)
*Parental death in childhood*LTO*	0.0674
	(0.0426)
*Parental death in childhood*Ambiguity Aversion*	0.1596*
	(0.0864)
*Parental death in childhood*RRP in Losses*	0.0748*
	(0.0404)
*Parental death in childhood*RRP in Gains*	0.0334
	(0.0411)
Parental death in childhood	−0.0601
	(0.0552)
Control variables	YES
Survey year*Country FE	YES
Survey year*Country of birth FE	YES
N	92,257
R2	0.252

This table reports regressions that estimate the relationship between parental death in childhood and household stock market participation using data from other countries. The dependent variable is a dummy that equals one if the household holds stocks or mutual funds. Panel A reports regressions using England and Korea samples. England's data comes from the English Longitudinal Study of Aging (ELSA) and Korean data comes from the Korean Longitudinal Study of Aging (KLoSA). Main independent variables of interest are *Parental death in childhood* between five and 15 years of age (Korea sample) and *Parental death in childhood* before the age of 16 (England sample) due to the data availability. We do not include current location fixed effects in the English sample and childhood location fixed effects in the Korean sample due to data availability. Panel B reports the regression using the Survey of Health, Ageing and Retirement in Europe (SHARE). *IDV, UAI, PDI, MAS,* and *LTO* are cultural indices from Hofstede et al. (2010). *Ambiguity Aversion, RRP in Losses,* and *RRP in Gains* are drawn from Rieger et al. (2015). Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

5.1. Family support

The first possible explanation postulates that the support children receive from their relatives following a parent's passing can mitigate the negative impact of such an experience. This hypothesis is rooted in Hsee and Weber's (1999) "cushion hypothesis," which states that in highly collectivistic cultures such as China, people tend to provide support—especially financial support—to in-group members who are facing trouble. This type of support can be viewed as a "cushion" to catch the in-group members when they "fall," thereby cushioning the potentially adverse consequences of risky financial decisions. In contrast, in individualistic cultures that emphasize independence, people tend to personally bear the potential losses of risky decisions without any "cushion." The presence of such a "cushion" implies that Chinese individuals face lower objective financial risks and are on average less risk-averse than their American counterparts (Hsee and Weber, 1999). In other words, family support is similar to insurance and absorbs the downside risks of individuals' financial decisions (Weber et al., 1998). We therefore expect that children in China are more likely to receive family support following a parent's passing and are thus "cushioned" against its negative impact.

To test for this channel, we use survey questions on the family support that individuals receive during their formative years and young adulthood. In the US sample, the dependent variable is *Family financial support*, a dummy variable that equals one if the respondent receives financial support from relatives during childhood. In the Chinese sample, the dependent variables are *Family financial support*, a dummy variable that equals one if the respondent receives financial support from family members when s/he was a young adult, and *Family and non-family financial support,* a dummy variable that equals one if the respondent receives financial support from either family or non-family members (such as friends or neighbors) when s/he was a young adult.[13]

Table 5 reports the results. In line with our expectation, we find that Chinese children are significantly more likely to receive financial support from family and/or non-family members following the death of a parent. Specifically, in our Chinese sample, experiencing parental death during formative years increases the likelihood of receiving financial support from family members by 1.6 % (Column (2)) and from family and/or non-family members by 2.1 % (Column (3)) during young adulthood. In contrast, no such effect is found in the US sample. That is, parental death in childhood is not associated with receiving more financial support from family members in the US sample (Column (1)).[14]

5.2. Sensitivity to trauma

The second explanation focuses on differences in individual sensitivity to traumatic childhood experience. The existing literature suggests that in individualistic cultures like the US encourage people to freely express their emotions and vulnerability after traumatic events (e.g., Summerfield, 2004). Conversely, in collectivistic cultures such as China, people focus on social harmony and are generally discouraged from negative self-expression. Consistent with this, Jobson and O'Kearney (2008) find that PTSD trauma survivors from individualistic cultures report more trauma-related memories than those without PTSD. In contrast, there is no such reported difference from collectivist participants. This suggests that people from individualistic cultures can be more sensitive to traumatic experience than those from collectivistic cultures.

As a first test of this explanation, we examine how the loss of a parent during childhood affects an individual's propensity to participate in social activities in adulthood. Social activity participation is a suitable proxy for trauma sensitivity given the close link between childhood stress and poor social ties in adulthood (Miller et al., 2011). We define *Social activities* as whether the respondent participates in social activities at least once a week.

In Panel A of Table 6, we find that American respondents who experience parental loss in childhood are approximately 3.9 % less likely to participate in social activities (Column (1)). In contrast, parental death does not affect social activity participation among Chinese respondents (Column (2)). Since social interactions tend to facilitate stock market participation (Hong et al., 2004), this can partially explain why US households that experience parental death in childhood are less likely to participate in the stock market.

Our second test focuses on the impact of parental death in childhood on subjective life expectancy. Early life traumatic experience can lead to a lower lifetime expectancy because it causes an increased risk of developing physical and mental health problems (Ferraro et al., 2016). *Lifetime expectancy* is the ratio of the self-reported probability of living for another 10 years divided by the same probability reported by people of the same age and gender. A larger value means that the respondent expects to live longer compared to others of the same age and gender.

Consistent with our expectation, Panel B of Table 6 shows that experiencing the loss of a parent during childhood significantly reduces the life expectancy of US respondents (Column (1)). In contrast, in the Chinese sample, the estimated effect of parental death in childhood on life expectancy is statistically insignificant and the magnitude is close to zero (Column (2)). Given that people with lower subjective life horizons are less likely to participate in the equity market and tend to hold smaller equity portfolio shares (Spaenjers and Spira, 2015), this helps to partly explain the differential association between parental death in childhood and stock market participation in adulthood across the two countries. Overall, our results suggest that traumatic childhood experience has more severe effects on the emotions and expectations of individualistic respondents relative to collectivistic respondents.

6. Additional analyses and robustness tests

Moderating effects of household wealth? While our baseline regressions already control for current household wealth and household income, we further evaluate whether the relationship between parental death in childhood and stockholdings varies depending on the levels of household wealth. To test this, we interact *Parental death in childhood* with *Higher wealth group*, a dummy that equals one if the household's wealth is above the sample median. As shown in Appendix 3, the interaction term is statistically insignificant, suggesting that household wealth does not moderate the relationship between parental death in childhood and stock market participation in adulthood in either the US (Column (1)) or the Chinese sample (Column (2)).

Non-financial risk-taking behavior. While our main analyses focus on risky financial behavior, we also investigate the link between parental death in childhood experience and self-destructive non-financial risk-taking behavior. In the US sample, we analyze three outcome variables: 1) *Smoking*, defined as a dummy that equals one if the respondent smokes now; 2) *Dangerous driving*, defined

[13] The support variables in the US and Chinese questionnaires differ slightly. Young adulthood (i.e., 18 to 25 years of age) is a period that follows the parental death in childhood (i.e., five to 15 years of age). Therefore, this allows us to capture whether bereaved children receive support following a parent's passing.

[14] One may argue that we do not find US respondents to receive financial support from their relatives because they already receive Social Security benefits and insurance payments following their parent's passing. Panel G of Appendix 9 shows that this is not the case.

Table 5
Family Financial Support Channel.

Dependent variables:	*Family financial support*	*Family financial support*	*Family and non-family financial support*
Sample:	US	China	
	(1)	(2)	(3)
Parental death in childhood	0.0143	0.0158*	0.0214**
	(0.0146)	(0.0089)	(0.0100)
Control variables	YES	YES	YES
Childhood location FE	YES	YES	YES
N	15,586	7220	7220
R2	0.077	0.045	0.050

This table evaluates the family financial support channel. Regressions estimate the effect of parental death in childhood on whether respondents receive support following a parent's death. In the US sample, the dependent variable is *Family financial support*, defined as a dummy that equals one if the financial respondent receives financial support from relatives during childhood (Column (1)). In the Chinese sample, the dependent variables are *Family financial support*, defined as a dummy that equals one if the financial respondent receives financial support from family members when s/he was a young adult (Column (2)), and *Family and non-family financial support,* defined as a dummy that equals one if the respondent receives financial support from either family or non-family members (such as friends or neighbors) when s/he was a young adult (Column (3)). The main independent variable of interest is *Parental death in childhood* between five and 15 years of age. Because the dependent variable happens in the respondent's early life and is unrelated to their current characteristics, the regressions only control for childhood characteristics, childhood location fixed effects, and time-invariant demographic characteristics such as male and years of education. Each household appears in regressions once. The results are robust otherwise. Control variables are collapsed for brevity and identical to those in Table 2. Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$.

Table 6
Sensitivity to Traumatic Events.

Panel A: Parental death in childhood and social activities		
Dependent variable:	*Social activities*	
Sample:	US	China
	(1)	(2)
Parental death in childhood	−0.0392**	0.0064
	(0.0185)	(0.0137)
Control variables	YES	YES
Survey year*Current location FE	YES	YES
Survey year*Childhood location FE	YES	YES
N	18,721	11,127
R2	0.071	0.146
Panel B: Parental death in childhood and lifetime expectancy		
Dependent variable:	*Lifetime expectancy*	
Sample:	US	China
	(1)	(2)
Parental death in childhood	−0.0595*	−0.0076
	(0.0306)	(0.0154)
Control variables	YES	YES
Survey year*Current location FE	YES	YES
Survey year*Childhood location FE	YES	YES
N	70,681	9758
R2	0.165	0.167

This table evaluates the sensitivity to trauma channel by estimating the effect of parental death in childhood on social activities in Panel A and lifetime expectancy in Panel B. *Social activities* is defined as a dummy whether the respondent participates in social activities at least once a week. *Lifetime expectancy* is defined as the ratio of self-reported probability of living for another 10 years divided by the same probability reported by people of the same age and gender. The main independent variable of interest is *Parental death in childhood* between five and 15 years of age. Control variables are collapsed for brevity and identical to those in Table 2. Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$.

as the willingness to take risks while driving; and 3) *Unhealthy behavior*, defined as the willingness to take risks with one's health. Questions about dangerous driving and unhealthy behavior use a zero-to-10 scale, where a higher value indicates a higher willingness to take the risk. In the Chinese sample, we analyze *Smoking* because this is the only variable available in the survey dataset.[15]

Appendix 4 displays the results. Parental death in childhood does not have any statistically significant effect below the 5 % level on non-financial risk-taking behavior in both the US and Chinese samples. This is in line with the financial support channel that adverse childhood experience is associated with financial risk-taking but not with non-financial risk-taking behavior. Our evidence is also consistent with Weber et al. (1998) that Americans are more risk averse than Chinese only in the domain of financial risk but not in the domain of social risk. This is because collectivist values can "cushion" against the downside of financial risk-taking, thereby increasing an individual's willingness to take financial risk.

Sensitivity analyses. We conduct several sensitivity analyses for our main dependent and independent variables. First, we use alternative age cutoffs for formative years. Our main analyses focus on parental deaths occurring during the formative years (i.e., between five and 15 years of age). This period is viewed as the formative years for forming early memories, which have a long-lasting impact on subsequent decision-making behavior (Usher and Neisser, 1993). In Panel A of Appendix 5, we evaluate the sensitivity of our results to alternative age cut-offs. Each row displays an alternative age cutoff and its corresponding set of regressions. Columns (1) and (2) report the results for the US and Chinese samples, respectively. We begin by adjusting the higher end of the age range, using five to 16 (Row (1)) and five to 17 (Row (2)). We similarly adjust the lower end of the age range, using four to 15 (Row (3)) and three to 15 (Row (4)). Finally, we extend both directions of the age range, using four to 16 (Row (5)) and three to 17 (Row (6)). Our results remain robust across all rows. As shown in Panel A of Appendix 5, our findings remain robust to alternative cutoffs in both directions of the age range.

Second, some households may perceive stock market investment as a hobby rather than a risky investment. Thus, one could argue that for stock market investment to be viewed as a risky activity, it needs to represent a substantial fraction of households' wealth. To test this, we use three dummy dependent variables indicating whether the percentage of household wealth invested in the stock market is above 5 %, 10 %, and 20 %. As shown in Panel B (US sample) and Panel C (Chinese sample) of Appendix 5, our findings remain robust across different thresholds of household wealth invested in the stock market.

Are Chinese respondents used to tougher living conditions? An important historical event in China is the Great Chinese Famine between 1959 and 1961 that witnessed widespread famine and natural disasters, causing 15–55 million estimated deaths (e.g., Cheng et al., 2023). Accordingly, one concern is that because Chinese respondents did tend to experience a relatively tougher life, they are insensitive to negative experience such as parental death.

Appendix 6 presents various tests that address this concern that our results in China may be affected by the Great Chinese Famine. In Panel A, we sequentially control for dummy variables indicating whether the family of any household member experienced any of the following events during the Great Chinese Famine (GCF): *Family experienced starvation during the GCF* (Column (1)), *Family members starved to death during the GCF* (Column (2)), *Family did not have enough food in childhood* (Column (3)), and *Family moved away from the famine-stricken area* (Column (4)). Column (5) includes all four indicators in the same regressions. As shown in Panel A, the insignificant relationship between parental death in childhood and stock market participation remains robust after we control for famine indicators.

In Panel B, we examine whether our results vary with the local severity of the famine. Column (1) adds an interaction term between *Parental death in childhood* and the *Local famine severity index* constructed by Feng and Johansson (2018). The results indicate that the local famine severity does not moderate the relationship between parental death in childhood and risky asset holdings. In sum, the findings suggest that our Chinese-based results are unlikely to be driven by the Great Chinese Famine or, more generally, by the fact that Chinese people are more used to tougher living conditions.

One-to-one matching of US sample to Chinese sample. In Appendix 7, we use propensity score matching to cross-match the US and Chinese samples. This cross-country matching approach, used in Bartram et al. (2012) and Conyon and He (2011), allows us to minimize the observable differences between the two samples. Specifically, we use the one-to-one nearest neighbor matching with replacement and caliper set to 0.05 to match US households to Chinese households. We match based on all covariates in Table 2 (including the parental death in childhood indicator) and survey year fixed effects. This allows us to match each US household to a Chinese household with the most similar observable characteristics. Using the matched samples, we re-estimate the baseline regressions in Table 2 and show the results in Appendix 7. In line with our main results, we find that parental death in childhood is negatively related to the stock market participation rate in the matched US sample, but not in the matched Chinese sample.

One-to-one matching of households with parental death and those without such experience. In Appendix 8, we perform a one-to-one propensity score matching of households that experience parental death in childhood to households that do not have a similar experience. We use the nearest neighbor method with the replacement and caliper set to 0.05. We match based on all covariates in Table 2. We perform this separately for the US and the Chinese samples. Thus, unlike Appendix 7 which cross-matches US to Chinese households, this table matches bereaved to non-bereaved households in the same country. This process removes observable differences in household, wealth, and childhood-related characteristics between bereaved and non-bereaved households. As shown in Appendix 8, we continue to find parental death in childhood is negatively associated with equity holdings in the matched US sample (Column (1)), while showing a statistically insignificant association with equity holdings in the matched Chinese sample (Column (2)).

Further robustness tests. Appendix 9 presents additional robustness tests. We find that none of the following empirical variations

[15] The base rates of smoking in the US and China are 16.4% and 29.9%, respectively.

have a material impact on our baseline results: (1) employing an alternative dependent variable—the fraction of risky assets (i.e., stocks and mutual funds divided by total financial assets) (Panel A),[16] (2) decomposing the parental death in childhood variable into the father's death and the mother's death and finding that both indicators significantly reduce stock market participation in the US sample (Panel B), (3) constructing the parental death variable at the household-level, that is, when either member of the household—the financial respondent or their spouse— experiences parental death in childhood (Panel C), (4) restricting the sample to single households (Panel D), (5) restricting the sample to financial respondents who are working (Panel E), (6) excluding observations in which the financial respondent is separated from their parents for a long time during their childhood because they could be less affected by their parent's passing (Panel F), and (7) controlling for whether the respondents receive Social Security during their formative years (Panel G).[17]

7. Discussions and conclusions

In this paper, we provide novel cross-country evidence of the relationship between parental death in childhood and household stock market participation in adulthood from a national culture perspective. Investigating household stock market participation behavior is relevant because the stockholdings of households contribute to firms' access to financing, overall market capitalization, and country economic performance. Although standard models suggest that every household should hold risky assets to take advantage of the positive equity premium (Merton, 1969), the stock market participation rate remains low across countries (e.g., Guiso et al., 2008). Given the relatively small participation costs, it is difficult to explain this non-participation. In a different vein, past personal experience has been shown to have a long-term impact on financial decision-making behavior in adults (e.g., Malmendier and Nagel, 2011). For example, investors tend to overweight their personal experience (e.g., Choi et al., 2009; Kaustia and Knüpfer, 2008), and households shy away from taking financial risk after experiencing adverse investment outcomes (e.g., Andersen et al., 2019; Malmendier and Nagel, 2011). We show that the interactions between the cultural environment and personal experiences play a crucial role in explaining the variation in household financial decision-making across countries.

Using comparable and nationally-representative household survey data, we find that the experience of parental death in childhood is more negatively associated with household stock market participation in individualistic countries relative to their counterparts in collectivistic countries. Our primary analyses focus on the US and China—the world's first and second largest economies, characterized by substantial differences in individualistic and collectivistic cultural values. We obtain similar conclusions using samples from England, South Korea, and 21 European countries and Israel.

Our findings indicate that cultural differences, and in particular differences in individualism/collectivism dimensions, form plausible channels that explain the results. The first mechanism, *family financial support*, is rooted in Hsee and Weber's (1999) cushion hypothesis, which suggests that in collectivistic cultures like China, in-group members provide support during hardship, mitigating the consequences of negative events. In contrast, in individualistic cultures that emphasize independence, people tend to personally bear the potential losses of risky decisions without any cushion. Due to the presence of this cushion, the negative impact of risky financial decisions faced by Chinese individuals may be mitigated relative to their American counterparts (Hsee and Weber, 1999; Weber and Hsee, 1998). Consistent with this explanation, we find that Chinese children who experience parental death during their formative years are more likely to receive financial support from family and/or non-family members such as their friends or neighbors during young adulthood. Conversely, parental death in childhood is not associated with family financial support in the US sample.

The second mechanism, *sensitivity to trauma*, focuses on differences in sensitivity to traumatic events between the US and China. Whereas collectivistic cultures such as China may discourage negative self-expression, individualistic cultures like the US encourage people to freely express their vulnerability (e.g., Bonanno et al., 2005; Lalande and Bonanno, 2006). Thus, Americans may be more sensitive to adverse experience. To test for this mechanism, we examine the effect of experiencing parental death in childhood on sensitivity to trauma in adulthood. Consistent with our expectation, we find that American respondents who experience the loss of a parent during childhood are significantly less likely to engage in social activities and have a lower life expectancy in adulthood, relative to those early-bereaved Chinese respondents. Thus, American respondents are more sensitive to traumatic experience and thereby less likely to make risky financial decisions.

Our findings have important socioeconomic implications. Stock market nonparticipation can imply welfare losses for households which, in turn, negatively affects long-run economic growth. Our findings suggest that childhood trauma is significantly related to financial decision-making later in life, particularly in individualistic cultures, where familial financial support is weaker and individuals are more sensitive to trauma. Policymakers could strengthen government safety nets to compensate for the lack of in-group support, particularly through financial support, to mitigate the scarring effects of childhood trauma. For example, expanding child welfare programs, such as survivor benefits for bereaved families, could help alleviate the financial disadvantages faced by children who experience early bereavement. Additionally, psychological interventions, such as trauma-focused therapy or resilience training, could reduce sensitivity to trauma, thereby promoting stock market participation and improving the long-term financial outcomes for households affected by traumatic experiences.

Our study has limitations that future research could address. First, while stock market participation is a proxy of household financial risk-taking behavior, it is challenging for internationally comparable survey data to capture more comprehensive dimensions of financial risk-taking, such as household risk attitudes, lottery participation, or gambling behavior. Furthermore, we cannot observe

[16] We employ Tobit model censored at 0 in Columns (2) and (4).

[17] We do not control for these variables in the main analyses because they have many missing values.

the specific causes of parental death in the datasets. The causes of parental death could influence the financial decision-making of bereaved children in adulthood. For instance, if parental death is random and unexpected, rather than anticipated or caused by genetic deficiency, bereaved children may be more (or less) conservative in risky investments in adulthood. Future research, particularly experimental studies, could explore how cultural factors influence the relationship between specific causes of parental death, as well as their effects on various forms of financial risk-taking. Second, although we use early-life traumatic events as a source of plausibly exogenous experience and control for a broad set of childhood and adulthood variables, as well as fixed effects, endogeneity may still exist. For instance, omitted variables such as the amount of childhood inheritance could influence financial decision-making in adulthood. Third, while this paper focuses on the cultural dimension of individualism and collectivism, future studies could examine how other cultural dimensions influence how personal experiences shape household financial decision-making. Additionally, while our study focuses on negative experiences, it would be valuable to explore how positive or fortunate experiences, viewed through a cultural lens, might similarly shape financial behavior.

Declaration of competing interest

Disclosure statement for Yibing Wang "Parental death in childhood and stock market participation: Cross-cultural insights"
The author declares that she has no relevant or material financial interests that relate to the research described in this paper.
Disclosure statement for Tarik Driouchi
"Parental death in childhood and stock market participation: Cross-cultural insights"
The author declares that he has no relevant or material financial interests that relate to the research described in this paper.
Disclosure statement for Duc Duy Nguyen
"Parental death in childhood and stock market participation: Cross-cultural insights"
The author declares that he has no relevant or material financial interests that relate to the research described in this paper.

Appendix 1. Variable Definitions

Health and Retirement Studies (HRS):

Variable name	*Definition*	*Corresponding survey question(s)*
Household characteristics at the household-level		
Household stock market participation	=1 if the household holds stocks or mutual funds	Do you (or your husband/wife/partner) have any shares of stock or mutual funds?
Fraction of risky assets in financial assets	The fraction of risky assets (i.e., stocks and mutual funds) divided by total financial assets.	Risky assets=How much would you have if you (or your husband/wife/partner) sold all stocks and mutual funds and paid off anything you owed on it? Value of financial assets is based on total non-housing financial wealth in the harmonized datasets.
Family size	Number of people living in the household	How many residents are there in your households?
Rural	=1 if the household lives in rural	Whether lives in urban or rural area
House ownership	=1 if the household owns their primary residence	This variable is based on the household ownership of the primary residence in the harmonized datasets.
Ln(Current wealth)	Natural logarithm of all household wealth components less all debt	Value is based on total household wealth in the harmonized datasets.
Ln(Current income)	Natural logarithm of the total household income	Value is based on total household income in the harmonized datasets.
Financial respondent characteristics at the individual-level		
Parental death in childhood	=1 if the respondent experiences the death of the father and/or mother between five and 15 years of age	This variable is coded based on several questions: Is your father still living?; In what year did he died?; Is your mother still living?; In what year did she died?; In what year were you born? Note: Respondent age at parental death = Parental death year – Respondent birth year. If both parents have passed away, respondent age is based on the first parental death.
Age	The respondent's age at the time of the survey	What is your date of birth?
Male	=1 if the respondent is male	Could you indicate your gender?
Married	=1 if the respondent is married or partnered	Are you currently married, partnered, separated, divorced, widowed, or have you never been married?
Years of education	The respondent's years of education	What is the highest grade of school or year of college you completed?
Working	=1 if the respondent is working	Are you doing any work for pay at the present time?
Minority	=1 if the respondent is Non-White or Hispanic	What race do you consider yourself to be: White/Caucasian, Black/African American, or other? Do you consider yourself Hispanic or Latino?
Work in finance	=1 if the respondent's longest work tenure is in the Finance, Insurance, or Real Estate industries	What is the industry of your longest-held job?
Has religious preferences	=1 if the respondent has religious preferences	What is your religious preference?

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(*continued*)

Health and Retirement Studies (HRS):

Variable name	*Definition*	*Corresponding survey question(s)*
Poor health in childhood	=1 if the respondent's self-rated health in childhood is poor	During childhood, would you say your health was excellent, very good, good, fair, or poor?
Poor financial situation in childhood	=1 if the respondent's self-rated financial situation in childhood is poor	During childhood, would you say your family was pretty well off financially, about average, or poor?
Father's years of education	The respondent's father years of education	What is the highest grade of school your father completed?
Mother's years of education	The respondent's mother years of education	What is the highest grade of school your mother completed?
Father's unemployment in childhood	=1 if the respondent's father had no job for several months or more during the respondent's childhood	During your childhood, was there a time of several months or more when your father had no job?
Father's job in childhood	=1 if the respondent's father was a blue-collar worker during the respondent's childhood	What was your father's occupation in your childhood?
Family financial support	=1 if the respondent received financial support from relatives during childhood	During childhood, was there a time when you or your family received financial help from relatives?
Social activities	=1 if the respondent attends social activities at least once a week	This variable is coded based on several social activities, which include going to a sport, social, or other club, participating in local community groups, doing volunteer work, attending an education or training course, caring for a sick or disabled adult, and interacting with children or friends
Lifetime expectancy	The ratio between the self-reported probability of living another 10 years and that reported by other respondents of the respondent's age and gender	This variable is based on self-reported probability of living another 10 years.
Smoking	=1 if the respondent smokes	Do you smoke now?
Dangerous driving	A zero-to-10 scale measuring willingness to take risk while driving	How willing you are to take risk while driving on a scale of 0 to 10 where 0 means "unwilling to take any risks" and 10 means "fully prepared to take risks"
Unhealthy behavior	A zero-to-10 scale measuring willingness to take risk with one's health	How willing you are to take risk with your health on a scale of 0 to 10 where 0 means "unwilling to take any risks" and 10 means "fully prepared to take risks"
Social Security Benefits in Childhood	=1 if the respondent receives Social Security between five and 15 years of age	In what year did you start to receive Social Security benefits?

China Health and Retirement Longitudinal Study (CHARLS)

Variable name	*Definition*	*Corresponding survey question(s)*
Household characteristics at the household-level		
Household stock market participation	=1 if the household holds stocks or mutual funds	Do you (or your husband/wife/partner) have any shares of stock or mutual funds?
Fraction of risky assets in financial assets	The fraction of risky assets (i.e., stocks and mutual funds) divided by total financial assets.	Risky assets=What is the present market value of all the stocks and mutual funds you (or your husband/wife/partner) are currently holding? Value of financial assets is based on total non-housing financial wealth in the harmonized datasets.
Family size	Number of people living in the household	How many residents are there in your households?
Rural	=1 if the household lives in rural	Whether lives in urban or rural area
House ownership	=1 if the household owns their primary residence	This variable is based on the household ownership of the primary residence in the harmonized datasets.
Ln(Current wealth)	Natural logarithm of all household wealth components less all debt	Value is based on total household wealth in the harmonized datasets.
Ln(Current income)	Natural logarithm of the total household income	Value is based on total household income in the harmonized datasets.
Financial respondent characteristics at the individual-level		
Parental death in childhood	=1 if the respondent experiences the death of the father and/or mother between five and 15 years of age	This variable is coded based on several questions: Is your father still living?; In what year did he died?; Is your mother still living?; In what year did she died?; In what year were you born? Note: Respondent age at parental death = Parental death year – Respondent birth year. If both parents have passed away, respondent age is based on the first parental death.
Age	The respondent's age at the time of the survey	What is your date of birth?
Male	=1 if the respondent is male	Could you indicate your gender?
Married	=1 if the respondent is married or partnered	Are you currently married, partnered, separated, divorced, widowed, or have you never been married?
Years of education	The respondent's years of education	What is the highest grade of school? Notes: Illiterate = 0 year; Did not finish primary school = 3 years; Sishu = 5 years; Elementary school = 6 years; Middle school = 9 years; High school = 12 years; Vocational school = 14 years; Two/Three Year College = 15 years; Bachelor = 16 years; Master/PhD = 19 years.
Working	=1 if the respondent is working	Do you have any paid work or unpaid family business?

(*continued on next page*)

(*continued*)

Health and Retirement Studies (HRS):		
Variable name	*Definition*	*Corresponding survey question(s)*
Minority	=1 if the respondent belongs to one of fifty-five minority ethnic groups in China	Are you a minority ethnic group?
Work in finance	=1 if respondent's major is in economics or finance in any of their education degrees	What are your majors in vocational school, three-year college, four-year college master's program, and Ph.D. program?
Has religious preferences	=1 if the respondent has religious preferences	Do you believe in religion?
Poor health in childhood	=1 if the respondent's self-rated health in childhood is poorer than their children of the same age	During childhood, compared to other children of the same age, would you say your health was much healthier, somewhat healthier, about average, somewhat less healthy, or much less healthy?
Poor financial situation in childhood	=1 if the respondent's self-rated financial situation in childhood is poorer than the average family in the same location	During childhood, compared to the average family in the same community/village at the time, would you say your family's financial situation is a lot better off than them, somewhat better off than them, the same as them, someone worse off than them, or a lot worse off than them?
Father's years of education	The respondent's father years of education	What is the highest grade of school your father completed?
Mother's years of education	The respondent's mother years of education	What is the highest grade of school your mother completed?
Father's unemployment in childhood	=1 if the respondent's father had no job for at least part of the time during the respondent's childhood	During your childhood, was there part of time or all time that your father neither work for pay or work in a family business?
Father's job in childhood	=1 if the respondent's father occupation was related to farming during the respondent's childhood	What was your father's occupation in your childhood?
Family financial support	=1 if the respondent received financial support from family members when s/he was a young adult	When you were a young adult, was there anyone who provided you with financial support? Was it provided by family members or others?
Family and non-family financial support	=1 if the respondent received financial support from family and/or non-family members when s/he was a young adult	When you were a young adult, was there anyone who provided you with financial support?; Was it provided by family members or others?
Social activities	=1 if the respondent attends social activities at least once a week	This variable is coded based on several social activities, which include going to a sport, social, or other club, participating in local community groups, doing volunteer work, attending an education or training course, caring for a sick or disabled adult, and interacting with children or friends
Lifetime expectancy	The ratio between the self-reported probability of living another 10 years and that reported by other respondents of the respondent's age and gender	This variable is based on self-reported probability of living another 10 years. There are five levels of probability of living in the CHARLS: almost impossible, not very likely, maybe, very likely, and almost certain that are assigned values of 0.1, 0.3, 0.5, 0.7, and 0.9, respectively
Smoking	=1 if the respondent smokes	Do you smoke now?

Appendix 1 reports the variable definitions and the survey question(s) corresponding to each variable in the HRS and CHARLS. The survey questions have been shortened for brevity. Some variables are obtained from the harmonized dataset and do not have a single corresponding survey question. Please refer to the Gateway to Global Aging Data website: https://g2aging.org/ for more details on the harmonized measures.

Appendix 2. Kinship Intensity

Dependent variable:	*Household stock market participation*
Sample:	SHARE
	(1)
Parental death in childhood	−0.0254***
	(0.0079)
*Parental death in childhood*Kinship intensity*	0.0129***
	(0.0033)
Control variables	YES
Survey year*Country FE	YES
Survey year*Country of birth FE	YES
N	47,875
R2	0.302

This table reports regressions using the Survey of Health, Ageing and Retirement in Europe (SHARE). The dependent variable is a dummy variable that equals one if the household holds stocks or mutual funds. The main independent variable of interest is *Parental death in childhood*Kinship intensity*. *Kinship intensity* is the prevalence of cousin marriage during the 20th century following Schulz et al. (2019). Robust standard errors are reported in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Appendix 3. Are the Results Driven by Wealth?

Dependent variable:	*Household stock market participation*	
Sample:	US	China
	(1)	(2)
Parental death in childhood	−0.0116**	0.0024
	(0.0049)	(0.0018)
*Parental death in childhood*Higher wealth group*	−0.0032	−0.0020
	(0.0125)	(0.0052)
Higher wealth group	0.2139***	0.0015
	(0.0085)	(0.0018)
Control variables	YES	YES
Survey year*Current location FE	YES	YES
Survey year*Childhood location FE	YES	YES
N	96,338	11,127
R2	0.261	0.220

This table tests whether the relationship between parental death in childhood and household stock market participation varies depending on the levels of household wealth. *Higher wealth group* is a dummy that equals one if the household's wealth is above the sample median. Control variables are collapsed for brevity and identical to those in Table 2. Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Appendix 4. Non-financial Risk-taking Behavior

Panel A: US non-financial risky behavior			
Dependent variables:	*Smoking*	*Dangerous driving*	*Unhealthy behavior*
Sample:	US		
	(1)	(2)	(3)
Parental death in childhood	0.0061	0.0811	0.0144
	(0.0058)	(0.1584)	(0.1727)
Control variables	YES	YES	YES
Survey year*Current location FE	YES	YES	YES
Survey year*Childhood location FE	YES	YES	YES
N	96,028	8764	8831
R2	0.078	0.084	0.059

Panel B: China non-financial risky behavior	
Dependent variable:	*Smoking*
Sample:	China
	(1)
Parental death in childhood	−0.0232*
	(0.0121)
Control variables	YES
Survey year*Current location FE	YES
Survey year*Childhood location FE	YES
N	10,500
R2	0.340

This table reports regressions that estimate the relationship between parental death in childhood and non-financial risk-taking behavior. The dependent variables are *Smoking* (a dummy that equals one if the respondent smokes now), *Dangerous driving* (the respondent's willingness of taking risks while driving using a zero-to-10 scale), and *Unhealthy behavior* (the respondent's willingness of taking risks with health using a zero-to-10 scale). The main independent variable of interest is *Parental death in childhood* between five and 15 years of age. Control variables are collapsed for brevity and identical to those in Table 2. Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Appendix 5. Sensitivity Analyses

Panel A: Alternative age cutoffs for formative years		
Dependent variable:	*Household stock market participation*	
Sample:	US	China
	(1)	(2)
(1): Parental death in childhood (age 5–16)	−0.0198***	0.0022
	(0.0052)	(0.0024)
(2): Parental death in childhood (age 5–17)	−0.0220***	0.0014
	(0.0049)	(0.0022)
(3): Parental death in childhood (age 4–15)	−0.0175***	0.0022
	(0.0055)	(0.0026)
(4): Parental death in childhood (age 3–15)	−0.0111**	0.0022
	(0.0053)	(0.0025)
(5): Parental death in childhood (age 4–16)	−0.0196***	0.0029
	(0.0051)	(0.0024)
(6): Parental death in childhood (age 3–17)	−0.0168***	0.0020
	(0.0047)	(0.0022)
Control variables	YES	YES
Survey year*Current location FE	YES	YES
Survey year*Childhood location FE	YES	YES
N	96,338	11,127

Panel B: Different thresholds of stock investment in the US			
Dependent variables:	*Different thresholds of stock percentage in wealth*		
	>5 %	>10 %	>20 %
Sample:	US		
	(1)	(2)	(3)
Parental death in childhood	−0.0205***	−0.0154***	−0.0154***
	(0.0050)	(0.0046)	(0.0039)
Control variables	YES	YES	YES
Survey year*Current location FE	YES	YES	YES
Survey year*Childhood location FE	YES	YES	YES
N	96,338	96,338	96,338
R2	0.17	0.142	0.105

Panel C: Different thresholds of stock investment in China			
Dependent variables:	*Different thresholds of stock percentage in wealth*		
	>5 %	>10 %	>20 %
Sample:	China		
	(1)	(2)	(3)
Parental death in childhood	0.0028	0.0024	0.0030
	(0.0024)	(0.0023)	(0.0022)
Control variables	YES	YES	YES
Survey year*Current location FE	YES	YES	YES
Survey year*Childhood location FE	YES	YES	YES
N	11,127	11,127	11,127
R2	0.207	0.191	0.199

This table reports results of sensitivity analyses. Panel A reports alternative age cutoffs for formative years. The dependent variable is a dummy that equals one if the household holds stocks or mutual funds. Rows (1)-(6) are separate regressions and each row uses an alternative age cutoff of parental death in childhood. Panels B and C report different thresholds for the percentage of household wealth invested in the stock markets in the US and China, respectively. We use three dependent variables indicating whether the percentage of household wealth invested in the stock market is above 5 %, 10 %, and 20 %. Control variables are collapsed for brevity and identical to those in Table 2. Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Appendix 6. Are Results Driven by the Great Chinese Famine?

Panel A: Controlling for four indicators of historical background

Dependent variable:	*Household stock market participation*				
Sample:	China				
	(1)	(2)	(3)	(4)	(5)
Parental death in childhood	0.0019	0.0015	0.0015	0.0014	0.0017
	(0.0026)	(0.0026)	(0.0025)	(0.0026)	(0.0027)
Family experienced starvation during the GCF	0.0004				0.0017
	(0.0029)				(0.0031)
Family members starved to death during the GCF		−0.0008			−0.0005
		(0.0025)			(0.0027)
Family did not have enough food in childhood			−0.0008		−0.0026
			(0.0025)		(0.0027)
Family moved away from the famine-stricken area				−0.0005	−0.0002
				(0.0027)	(0.0028)
Control variables	YES	YES	YES	YES	YES
Survey year*Current location FE	YES	YES	YES	YES	YES
Survey year*Childhood location FE	YES	YES	YES	YES	YES
N	10,638	10,746	11,085	10,720	10,245
R2	0.220	0.220	0.220	0.219	0.223

Panel B: Local severity index of the famine

Dependent variable:	*Household stock market participation*
Sample:	China
	(1)
Parental death in childhood	−0.0025
	(0.0040)
*Parental death in childhood*Local famine severity index*	0.0003
	(0.0002)
Control variables	YES
Survey year*Current location FE	YES
Survey year*Childhood location FE	YES
N	10,476
R2	0.147

This table reports tests that examine whether our results are driven by the Great Chinese Famine (GCF). The dependent variable is a dummy variable that equals one if the household holds stocks or mutual funds. In Panel A, we control for four indicators of the GCF separately in Columns (1) to (4) and for all four famine indicators in Column (5). In Panel B, we add an interaction term between *Parental death in childhood* and the *Local famine severity index* of the famine conducted by Feng and Johansson (2018). Control variables are collapsed for brevity and identical to those in Table 2. Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Appendix 7. One-to-one Matching of US Sample to Chinese Sample

Dependent variable:	*Household stock market participation*		
Sample:	US	China	US and China
	(1)	(2)	(3)
Parental death in childhood	−0.0206**	0.0019	−0.0141*
	(0.0085)	(0.0036)	(0.0080)
*Parental death in childhood*US sample*			−0.0491***
			(0.0184)
Control variables	YES	YES	YES
Survey year*Current location FE	YES	YES	NO
Survey year*Childhood location FE	YES	YES	NO
Survey year*Country FE	NO	NO	YES
N	30,264	1588	31,852
R2	0.231	0.309	0.274

This table performs a cross-country propensity score matching between the 2012–2018 US sample and the 2011–2018 Chinese sample. The dependent variable is a dummy variable that equals one if the household holds stocks or mutual funds. The main independent variable of interest is *Parental death in childhood* between five and 15 years of age. Column (1) reports the results using the matched US sample and Column (2) reports the results using the matched Chinese sample. The control variables are collapsed for brevity and are identical to those in Table 2. Column (3) combines the matched US and Chinese samples to run one cross-country regression and further controls for the country-year fixed effects. Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Appendix 8. Propensity Score Matching of Households Experiencing Parental Death in Childhood to Households without Such Experience

Dependent variable:	*Household stock market participation*	
Sample:	US	China
	(1)	(2)
Parental death in childhood	−0.0152**	0.0017
	(0.0077)	(0.0027)
Control variables	YES	YES
Survey year*Current location FE	YES	YES
Survey year*Childhood location FE	YES	YES
N	8209	2662
R2	0.281	0.509

This table performs propensity score matching for the treatment group (i.e., households that experience early parental loss between five and 15 years of age) and the control group (i.e., households that do not experience parental death in childhood between five and 15 years of age). The analysis is performed separately for each of the US and Chinese samples. The dependent variable is a dummy variable that equals one if the household holds stocks or mutual funds. The main independent variable of interest is *Parental death in childhood* between five and 15 years of age. Variables are defined in Appendix 1. Control variables are collapsed for brevity and identical to those in Table 2. Robust standard errors are reported in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Appendix 9. Further Robustness Tests

Panel A: An alternative measure of stock market participation				
Dependent variable:	*Fraction of risky assets in financial assets*			
Sample:	US		China	
	(1)	(2)	(3)	(4)
Parental death in childhood	−0.0172***	−0.0135***	−0.0003	0.0086
	(0.0037)	(0.0041)	(0.0009)	(0.8848)
Control variables	YES	YES	YES	YES
Survey year*Current location FE	YES	YES	YES	YES
Survey year*Childhood location FE	YES	YES	YES	YES
N	96,337	96,338	11,127	11,127
R2 (Pseudo R2)	0.172	0.194	0.181	0.320
Model	OLS	Tobit	OLS	Tobit

Panel B: Childhood father death and mother death		
Dependent variable:	*Household stock market participation*	
Sample:	US	China
	(1)	(2)
Father's death in childhood	−0.0135*	0.0001
	(0.0072)	(0.0028)
Mother's death in childhood	−0.0185**	0.0030
	(0.0083)	(0.0040)
Control variables	YES	YES
Survey year*Current location FE	YES	YES
Survey year*Childhood location FE	YES	YES
N	92,298	9672
R2	0.225	0.231

Panel C: Parental death at the household level		
Dependent variable:	*Household stock market participation*	
Sample:	US	China
	(1)	(2)
Parental death in childhood	−0.0215***	−0.0006
	(0.0045)	(0.0021)
Control variables	YES	YES
Survey year*Current location FE	YES	YES
Survey year*Childhood location FE	YES	YES
N	93,176	10,615
R2	0.227	0.236

Panel D: Single households only		
Dependent variable:	*Household stock market participation*	
Sample:	US	China
	(1)	(2)
Parental death in childhood	−0.0215***	−0.0014
	(0.0065)	(0.0038)
Control variables	YES	YES
Survey year*Current location FE	YES	YES
Survey year*Childhood location FE	YES	YES

(*continued on next page*)

(*continued*)

Panel D: Single households only		
Dependent variable:	*Household stock market participation*	
Sample:	US	China
	(1)	(2)
N	40,619	2516
R2	0.221	0.186

Panel E: Working households only		
Dependent variable:	*Household stock market participation*	
Sample:	US	China
	(1)	(2)
Parental death in childhood	−0.0206**	0.0039
	(0.0094)	(0.0024)
Control variables	YES	YES
Survey year*Current location FE	YES	YES
Survey year*Childhood location FE	YES	YES
N	46,104	6683
R2	0.200	0.147

Panel F: Excluding the respondent who separated with parents in childhood		
Dependent variable:	*Household stock market participation*	
Sample:	US	China
	(1)	(2)
Parental death in childhood	−0.0174***	−0.0009
	(0.0062)	(0.0025)
Control variables	YES	YES
Survey year*Current location FE	YES	YES
Survey year*Childhood location FE	YES	YES
N	87,105	10,247
R2	0.225	0.227

Panel G: Controlling for social security	
Dependent variable:	*Household stock market participation*
Sample:	US
	(1)
Parental death in childhood	−0.0229***
	(0.0062)
Social Security benefits in childhood	−0.0190
	(0.0372)
Control variables	YES
Survey year*Current location FE	YES
Survey year*Childhood location FE	YES
N	75,613
R2	0.233

This table reports other robust tests. In Panel A, the dependent variable is *Fraction of risky assets in financial assets*, defined as the ratio of the value of risky assets (i.e., stocks and mutual funds) to total financial assets. From Panels B to G, the dependent variable is a dummy that equals one if the household holds stocks or mutual funds. Panel B decomposes the parental death in childhood variable into two indicators of the father's death (*Father's death in childhood*) and the mother's death (*Mother's death in childhood*). In Panel C, the parental death variable is at the household level, which is a dummy that equals one if either member of the household (i.e., the financial respondent or their spouse) experiences parental death in childhood. Panel D restricts the sample to single households. Panel E restricts the sample to those who are working. Panel F excludes financial respondents who are separated from their parents for a long time in childhood. Panel G controls for a dummy variable indicating whether the financial respondent receives Social Security during formative years. Control variables are collapsed for brevity and identical to those in Table 2. Variables are defined in Appendix 1. Robust standard errors are reported in parentheses. $*p < 0.1$; $**p < 0.05$; $***p < 0.01$.

Data availability

The authors do not have permission to share data.

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