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Antti Lehtoranta

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Childhood experience of father's job loss and stock market participation

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Abstract

Using data from the Panel Study of Income Dynamics (PSID), I document that childhood experience of father's job loss decreases the propensity to own stocks as an adult. If this experience takes place at the age of 5–10 years, the probability of owning stocks decreases by 2.9 percentage points in a sample with mean stock market participation rate of 17%. This finding is robust to alternative definitions of age ranges and controlling for random unobserved effects. I also find an effect of similar magnitude in the Health and Retirement Study (HRS) data.

Keywords: stock market participation, personal experience, job loss

JEL codes: D03, D14, D83, G11, J64

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1. Introduction

Father's job loss constitutes a major shock to family life, and children are likely to remember it for the rest of their lives. Personal experience may affect both subjective expectations and attitudes towards risk. On the one hand, individuals who overweight personal experience and have experience about father's job losses may hold a higher subjective probability of labor income shocks than peers without such experience. On the other hand, traumatic experiences may affect the formation of risk preferences. The personal-experience hypothesis predicts that households with a job-loss experience should be less willing to invest in risky assets and thus be less likely to participate in the stock market.

Identifying the causal effect from adult personal experience to household behavior is not easy because unobserved household characteristics may be causal factors to both the personal experience and the stock market participation choice. The use of childhood experiences alleviates this concern: characteristics that do not affect the childhood experiences cannot bias the causal inference. Only such unobserved characteristics that were determined before or during childhood and affect both the experience and the later stock market choice, could bias inference. Given that I investigate the effects of job losses, it is sufficient for the identification of causal effect of childhood experience to assume that the job-loss events are uncorrelated with unobserved pre-childhood characteristics that also affect stock market participation choices later in life.

I study the effect of father's job loss on children's stock market participation using data from the Panel Study of Income Dynamics (PSID). PSID surveys the job histories of US families and their children after they have moved away from home and formed their own households. This sampling method allows me to create father's job-loss indicators that were collected soon after any job-loss event. This mitigates concerns for recall bias that could otherwise affect the measurement of the job-loss variable.

I find that the childhood experience of father losing his job due to factory closing or lay-off is associated with a 2.9 percentage points lower likelihood for the household to participate in the stock market. Compared to the sample average stock market participation rate, 17%, the estimated experience effect is economically large. I find no stock market participation effect when father quits his job voluntarily: the experience effect thus appears to arise solely from the experience of involuntary job losses.

I also investigate the childhood-experience effect for a sample of near or already retired households using data from the Health and Retirement Study (HRS). HRS asks all participants whether before the age of 16 their father was unemployed for a period of several months or more. I find that the childhood experience of father's unemployment reduces the stock market participation rate by 2.9 percentage points. The absolute size of the childhood-experience effect is thus similar both in the PSID and HRS data sets. However, as the HRS average stock market participation rate is higher at 29%, the relative importance of the experience effect is smaller for the older population. Overall, the results are consistent with the idea that the relative importance of personal experience is reduced

over time.

The main specification of the estimated model only controls for factors at childhood. Adding a variable for log household income in adulthood in the regression will produce a similar experience effect. While this decreases the precision of the experience-effect estimate, it remains significant at conventional levels. Thus the childhood effect of father's unemployment is robust to unobserved factors determined before childhood that may affect adult stock market participation via the household income channel.

My research relates to three strands of literature. First, I contribute to the literature studying the effect of personal experience on investing (see, e.g. [Kaustia and Knüpfer, 2008](#); [Choi et al., 2009](#); [Barnea, Cronqvist, and Siegel, 2010](#); [Tokuoka, 2013](#); [Knüpfer, Rantapuska, and Sarvimäki, 2014](#)). The article perhaps most closely related to mine is that of [Malmendier and Nagel \(2011\)](#), who suggest that stock market returns experienced over a lifetime are associated with household stock ownership. These stock market returns are identical to all members of the same cohort, so they might just as well proxy for cohort-specific differences in participation (see, for example, [Ameriks and Zeldes, 2004](#)). My paper offers a much stronger identification of the personal-experience effect because the experiences can be observed at the level of an individual.

Second, my paper adds to the literature on the determinants of stock market participation. Prior studies have shown it to be associated with a large number of investor-level characteristics, such as financial awareness ([Guiso and Jappelli, 2005](#)), financial literacy ([van Rooij, Lusardi, and Alessie, 2011](#)), genetic differences ([Barnea, Cronqvist, and Siegel, 2010](#)),

intelligence (Grinblatt, Keloharju, and Linnainmaa, 2011), internet access (Bogan, 2008), peer performance in the stock market (Kaustia and Knüpfer, 2012), social interaction (Hong, Kubik, and Stein, 2004; Brown et al., 2008), and trust (Guiso, Sapienza, and Zingales, 2008).

Third, my paper is related to the literature on the effects of job losses. I review this literature in detail in the next section.

The paper proceeds as follows. Section 2 discusses childhood experience of father's job loss. Section 3 describes the data used, and Section 4 shows the estimation results. Section 5 concludes.

2. Childhood experience of father's job loss

Father's job loss can have a severe impact on a household. Ruhm (1991) finds that workers that have experienced job losses have lower incomes in the near term. Jacobson, LaLonde, and Sullivan (1993) find evidence also for long-term income effects. In addition to reduced income, job losses scar workers in many other ways. Chan and Stevens (2001) show that job loss reduces the probability of gaining employment. Strully (2009) shows that job displacement causes health problems, and Sullivan and von Wachter (2009) find evidence of increased mortality especially in the short term.

Childhood experience of father's unemployment can affect stock market participation choices later in life via at least two distinct channels. Schmidt (1999) finds that average expectations of job displacement likelihoods deviate from actual rates of displacements. Heterogeneous beliefs about the labor market risk results in heterogeneous beliefs about

household background risk. Overweighting of personal and family experiences on job losses leads to higher subjective background risk expectations, and thus personal experience of job loss causes households to refrain from participating in the stock market. Alternatively the childhood experience of the adverse outcomes from economic risk can affect the formation of risk attitudes. Although risk preferences can partially be explained by genetics ([Cesarini et al., 2009](#)), upbringing and environment are important factors in forming individual risk preferences. A childhood experience about the negative effects of an economic shock may lead to different value weighting of such events in future expectations. Those who do not have personal experience of job losses may fail to anticipate the different types of job-displacement scarring effects, and thus expect utility loss from a job loss to be smaller than those who have personal experience of job-loss effects.

The effect of father's job loss is likely to differ depending on the age of a child. I follow [Bradley et al. \(2001\)](#) and divide childhood into 5-year intervals: early childhood (0–5 yrs), middle childhood (5–10 yrs), and early adolescence (10–15 yrs). While the early childhood is a time of rapid learning of language and cognitive skills, memories from this young age may not be retained. Personal experience that is not memorable is unlikely to affect expectations. [Fontanari et al. \(2014\)](#) show that probabilistic thinking develops around the age of five. Expectations require at least rudimentary probabilistic thinking, so I expect experiences before the age of five to have less impact on expectations than later experiences. While very young children may not remember father's job loss, parents still experience the job-loss effects. It is likely that the children learn from their parents about the job loss

and its effects at an older age. This second-hand experience may also affect one's decision making, but personal experience learned at the time of the event is likely to have a stronger effect on subjective beliefs than second-hand knowledge. Studying the job-loss experience effects on the early childhood group is appealing also as a pseudo-placebo test. The long-term effects of the job loss on the family should be similar regardless of whether the event takes place when the children are below 5 years of age, or more than 5 years old, but its effect on children's behavior should be stronger if the children are old enough to understand the job-loss event. Thus, I expect that middle childhood and early adolescence experiences have stronger effects on adult stock market participation than early childhood experiences of father's job loss.

3. Data

A. Panel Study of Income Dynamics (PSID)

PSID is a nationally representative survey of families and their children started in 1968.¹ PSID data were collected annually until year 1993, and biennially thereafter. Children of the PSID families who move away from home and start their own families are added as new PSID households to future surveys. Due to this design, PSID has been extensively used to study intergenerational effects of work- and income-related outcomes, such as intergenerational correlations in earnings (e.g. [Behrman and Taubman, 1990](#); [Couch and Dunn, 1997](#)), income

¹ The PSID oversamples low-income families. Details about the survey design are available in [Hill \(1991\)](#).

mobility (e.g. [Solon, 1992](#); [Chadwick and Solon, 2002](#)), welfare receipts ([Pepper, 1995](#)), and wealth ([Charles and Hurst, 2003](#)).

Every PSID survey wave collects information about the household head's job. If the household head's job changes between survey waves, the reason for this job change is queried. Thus, PSID job-loss data is robust to recall biases; even if the household head forgets to mention a job loss, the PSID surveyors will notice that the current job does not match the information from the previous survey and will ask for the reason of the job change. PSID codes the open-ended job-change responses under various categories of which the categories of interest for studying job displacements are as follows: i) company folded, ii) laid-off or fired, and iii) quit. The company-folded category includes mentions of the company changing hands or moving out of town, and the employer dying or going out of business. Job displacements due to quitting are different from the first two in the sense that quitting is a voluntary choice. The quit indicator can serve as a placebo event to find out whether the act of changing jobs affects childhood experience.

My sample consists of individuals with data on father's employment history available over various childhood periods. I match children's records to their father's job-history data, and look whether the father experienced a particular type of job-loss event within a specific childhood age range. [Figure 1](#) provides an example on how to create the middle childhood (5–10 years) experience indicators of father's job loss.

[Table 1](#) shows the frequencies of the childhood experience indicators evaluated over the different childhood periods, and also the frequencies using overlapping periods. The

intergenerational matching between father’s job history and children’s formation of separate households reduces the sample size. While the PSID contains 8,870 separate responding households in the 2011 survey wave, the data allow the creation of early childhood indicators only for 2,771 respondents, middle childhood indicators for 3,412, and early adolescence indicators for 3,536 respondents. 5-year period indicators require less job-history data and thus have more observations than the 10-year and 15-year experience measures.

About 7% of the respondents experienced a father’s job loss due to factory folding in a given 5-year period in childhood. Lay-offs are twice as common as factory closings. I define a “folded or laid-off” indicator which is set to one if either the factory folded or the father was laid off. This combined indicator captures all job-displacement experiences that are related to involuntary job losses.² The combined factory folded and laid-off experiences are reported for 23.5% of the individuals in the early childhood group, 20.0% of the individuals in the middle childhood group, and 16.3% of the individuals in early adolescence group. The most common reason for the father not working in his previous job is quitting voluntarily. 37.1% of respondents had early childhood, 28.5% had middle childhood, and 20.8% had early adolescence experience of father’s job displacement due to quitting. Thus mostly due to the higher incidence of quitting from a job, almost half of the sample individuals had experienced a father’s job displacement event of some type during the early childhood years.

² The lay-off category also includes responses of being fired, which could be voluntary. [Boisjoly, Duncan, and Smeeding \(1998\)](#) manually examined the PSID coding of the “laid-off or fired” responses and found that only 16% of the cases involved firings. Thus, interpreting all lay-off responses as indications of involuntary job losses induces only a small measurement error.

In PSID stock market participation is surveyed in waves of 1984, 1989, 1994, and from 1999 onwards every two years. For the 3,412 respondents for whom the middle childhood job-loss experience indicator is available, I have 16,392 respondent-year observations for stock market participation. [Table 2](#) shows descriptive statistics for this sample. On average, 17% of the households hold stocks. There is a degree of time variation in stock ownership; 70% of households never hold stocks, 5% of the households hold stocks in all surveyed years, and the remaining 25% hold stocks during some waves. [Bricker et al. \(2014\)](#) report that in the Survey of Consumer Finances (SCF) data 50% of US households held stocks either directly or indirectly. The difference between the SCF averages and this PSID sample is explained by two factors. First, due to the intergenerational matching, the PSID sample only consists of young households, and younger households are less likely to hold stocks. Second, the original PSID sample overweights low-income families. Due to intergenerational income effects, below-average incomes account for a large fraction of the sample.

I also control for household characteristics that were predetermined at childhood and may impact stock market participation. I do not control for adult education, wealth nor income, as these adult variables are likely to have been affected by childhood experiences. E.g. [Rege, Telle, and Votruba \(2011\)](#) find that father's job losses affect the school performance of children, and thus controlling for adult educational attainment would bias the estimation of the experience effect due to the bad control problem ([Angrist and Pischke, 2009](#), pp. 64–68).

[Hong, Kubik, and Stein \(2004\)](#) find a strong correlation between being white non-Hispanic and owning stocks. In my sample, 25% of households have an African-American

head and 4% have a Hispanic head.³ The average age of the household spouses is 31.7 years. The sample consists of 60% single and 40% two-spouse households, and 47% of all household members are men. The respondents' fathers have on average 12.5 years of education and mothers 12.4 years.⁴

B. Health and Retirement Study (HRS)

The Health and Retirement Study (HRS)⁵ surveys near and already retired US households biennially about their finances, employment, health, demographics and many other characteristics. The oldest HRS respondent cohorts were born before 1923 and the youngest cohort is born before 1953. Thus, HRS includes respondents from a wide range of cohorts, including children of the Great Depression.

While the HRS does not have information on the job histories of the respondent's fathers, HRS asks every respondent whether their father was unemployed for a period of several months or more before the age of 16 years. [Table 3](#) shows the descriptive statistics for the same variables as for the PSID sample. HRS has data for 16,820 different households for whom there is information about both the childhood experience of father's unemployment

³ The share of African-Americans exceeds the national average due to the original PSID oversampling of poor families. The Hispanic share is below the current national proportion due to the original PSID sample being representative of the 1968 population. The later addition of a Latino sample to PSID does not show in my sample as the intergenerational matching requires me to use only the original PSID sample families.

⁴ PSID right-censors the education variable at 17 years, omitting any postgraduate studies. Therefore the PSID measures for average years of education are downward biased.

⁵ For an overview of the HRS survey design and background, see e.g. [Juster and Suzman \(1995\)](#).

and the household stock market participation. 22% of the HRS households have experience of father's unemployment and 29% participate in the stock market.

4. Results

A. Main results

Table 4 reports the marginal effects from a logit model of stock market participation explained by middle childhood experience of father's job displacements. Model (1) includes only the factory folded or lay-off experience indicator along with controls for survey wave effects. In this model, the childhood experience of father's job loss is associated with a 7.5-percentage point decrease in the probability of owning stocks. This effect is statistically highly significant. Compared to the sample average rate of stock ownership, 17%, this estimated marginal effect is economically highly significant.

Model (2) adds controls for household characteristics that were predetermined in childhood and could affect the stock market participation preferences. The added controls include average age, average of household male indicators, indicator whether the household head is African-American, indicator for a Hispanic household head, and the number of years of education for parents. After controlling for these characteristic effects, the marginal effect of childhood experience effect is smaller, -2.9 percentage points, but remains statistically significant.

The model (2) estimate is 17% of the sample average participation rate, and thus economically significant. The relative size of this effect is similar to previous findings on the

size of experience effects. [Malmendier and Nagel \(2011\)](#) estimate that the effect of personal experience on stock market participation is 30% of their sample average participation rate. They estimate that a change in their stock return experience measure from the 10th percentile to the 90th percentile is associated with a 10.2 percentage point increase in stock market participation rate compared to their sample average stock market participation rate of 34.2%. Using a sample where the average stock market participation rate is 21.2%, [Knüpfer, Rantapuska, and Sarvimäki \(2014\)](#) estimate that the personal experience of job loss reduces stock market participation by 2.9 to 3.1 percentage points decades after the job loss. Thus, the size of their experience effect is 14%–15% of the average stock market participation rate.

All of the model (2) control variables have the expected signs. An additional year of age increases the likelihood of stock market participation by 0.7 percentage points. The underlying logit model includes both a linear and a quadratic term for the household average age. The estimate for the linear term has a positive sign, and the quadratic term has a negative sign; both are statistically significant. However, the average marginal effect is positive, as the linear effect dominates for most of the sample members. Males are significantly more likely to hold stocks. A single male household owns stocks at a 5.1 percentage points higher rate than a single female household. Households with African-American heads have a 11.9 percentage points smaller probability of owning stocks. Similarly, households with Hispanic heads are estimated to have a lower likelihood to own shares, but this effect is not statistically significant. Parental education increases the

probability of owning stocks. An additional year of father’s education is associated with a 2.0 percentage point higher probability of owning stocks.

Model (3) estimates separately the factory folded, lay-off, and quit job displacement effects without controlling for household characteristics. Both the folded and the laid-off indicators are associated with lower stock market participation rates and the effects are statistically significant. The estimated marginal effect for the quit indicator is positive, but statistically insignificant. Model (4) adds the same set of controls to the logit model as model (2). Both the factory folded and laid-off experiences have similar sizes, although both estimates are imprecisely estimated: the laid-off estimate is significant at the 10% level and the folded estimate is statistically insignificant. These results provide support for the notion that only involuntary job-loss experiences have predictive power for stock market participation decisions.

B. Robustness to unobserved effects

To control for biases that arise from unobserved heterogeneity explaining stock market participation, I estimate random effects (RE) models of stock market participation. [Table 5](#) shows the marginal effects estimates from these models.

Models (1) and (2) show the marginal effect estimates from linear random effects models controlling for quadratic age, gender, ethnicity, Hispanicity, and parental education effects. In model (1) the childhood experience of father’s job displacement due to factory being folded or due to lay-offs, reduces the marginal probability to own stocks by 3.8 percentage

points. Model (2) estimates separately the effects of experience of factory folded, lay-offs, and quitting. Similar to the logit model estimates, the linear RE model estimates the factory folded experience effect imprecisely, but the separate laid-off indicator is statistically significant. Compared to the estimates from the logit model, the linear RE model marginal effect estimate is larger.

The control variables again have the expected signs and their estimates are very similar to those from the logit model. An additional year of age increases the household participation rate by 0.7 percentage points. African-Americans have 8.4 percentage points lower probability to participate in the stock market. An additional year of father's and mother's education increases participation by 2.0 percentage points.

Models (3) and (4) estimate random effects logit models. The model (3) marginal effect estimate for the combined folded or laid-off indicator is -2.8 percentage points and is statistically highly significant. Model (4) estimates a negative sign for both the factory folded and laid-off variables, but only the laid-off effect is statistically significant. The estimate for the quit experience is $+0.6$ percentage points, but with an estimated z -value of 0.58 it is statistically insignificant.

These random effects estimates are similar to the main logit model estimates. The magnitudes of the effects are similar. Moreover, none of these models finds a significant correlation between the experience of father quitting his job and stock market participation. Thus, any unobserved heterogeneity that is uncorrelated with the childhood experience of father's job loss does not bias the main result.

C. Alternative age ranges

Table 6 shows the marginal effect estimates from logit models of stock market participation where the childhood experience indicator has been measured over different age ranges. The first column shows the estimation results for early childhood (0–5 yrs) experiences, the second column repeats the baseline middle childhood (5–10 yrs) results, and the third column shows the results for early adolescence (10–15 yrs) experience. The last three columns show the results using overlapping age ranges. The fourth column shows the combined estimate measured for early and middle childhood experiences (0–10 years), the fifth column for middle childhood and early adolescence experiences (5–15 years), and the sixth column using all childhood and early adolescence experiences (0–15 years).

Considering that very young children are less likely to remember their father’s job-loss experience, it is not surprising that the early childhood estimate of -1.3 percentage points is not statistically significant from zero. The middle childhood marginal effect of -2.9 percentage points and the early adolescence effect of -4.0 percentage points are both economically and statistically significant. The estimate for the combined early and middle childhood experience is -2.4 percentage points, but it is statistically significant only at the 10% level. The combined middle childhood and early adolescence estimate is -3.1 percentage points and significant at the 5% level. Finally, the combined childhood and early adolescence estimate is -1.9 percentage points, and is not statistically significant.

These results indicate that the early childhood experience period has less explanatory power than the middle childhood and early adolescence periods. While the early childhood

estimates have negative signs as expected, the estimate sizes are smaller and statistically insignificant. This finding is consistent with the notion that job-loss events during early childhood are unlikely to be remembered and thus have less impact than later experiences. While it is possible that parents share these experiences with their children at a later age, the effect of such second-hand information is likely to have a smaller impact on expectations and/or risk attitudes than direct personal experience.

D. Long-term effects of childhood experience

Table 7 shows the marginal effects estimates from a logit model of childhood experience of father's unemployment on stock market participation using HRS data. Model (1) includes only the childhood experience indicator along with dummy controls for survey waves, sample cohorts, and U.S. Census divisions. Childhood experience reduces stock ownership by 3.6 percentage points. Model (2) adds controls for household characteristics: gender, ethnicity, Hispanicity, age (linear and quadratic), and parental education. Now, the childhood experience reduces stock market participation by 2.9 percentage points, but the effect is still statistically highly significant. Lastly, model (3) controls for receipts of surprise inheritances. Some inheritances may come in form of direct or indirect stock holdings, and thus a received inheritance may mechanically turn a household into a stock market participant. Thus, I use a surprise inheritance indicator as a control for inheritance effects, and find that those households that recently received a surprise inheritance have a 10.1 percentage points higher likelihood of owning stocks. Controlling for this inheritance effect, I find that the childhood

experience of father's unemployment reduces the stock market participation rate by 3.6 percentage points. The change in the size of the estimate is mostly due to a smaller sample, as the data on surprise inheritance receipts is only available for a subset of observations.

To sum up, I find a statistically significant effect of childhood experience of father's unemployment on stock market participation also in a population of households that is near retirement or already retired. As the sample average stock market participation rate is 29%, the childhood experience estimate is 10%–12% of the size of the average participation rate. The relative size of the experience effect is smaller compared to the PSID results for younger households. The finding that the effect of experiences is diluted over time is consistent with the findings of [Barnea, Cronqvist, and Siegel \(2010\)](#) and [Malmendier and Nagel \(2011\)](#).

5. Conclusion

Personal experiences can have a significant impact on household stock market participation choices. Prior research indicates that the effects of personal experience decrease over time ([Barnea, Cronqvist, and Siegel, 2010](#); [Malmendier and Nagel, 2011](#)). However, experiences in the very early formative years may have a stronger impact on individual beliefs and preferences, so that the experiences can still have an effect after many years.

This paper investigates the role of childhood experience of father's job loss on adult stock market participation. I find that childhood experience of father's involuntary job loss is associated with a 2.9 percentage points lower stock market participation rate for an adult household. The size of this effect is 17% of the average sample stock market participation

rate and is thus economically significant. I also find evidence that childhood experience explains the stock market participation choices of the near or already retired households. Although the relative size of the experience effect is lower among older households, the effect is still statistically and economically significant. These results show that childhood experiences have economically significant effects on household behavior even in the long term.

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Figure 1: PSID childhood experience variable creation example

This imaginary example for a given household clarifies how I create the childhood experience of father’s job displacement indicators. The household consists of the father and two children: Alice (born in 1961) and Ben (born in 1965). Father’s job history is available from wave 1 to 18. Every wave in which his job changed from the one recorded in the previous interview, the reason for the most recent job displacement is inquired. In this example, the father experiences two job-loss events, one between waves 1 and 2 (factory folded), and another between waves 6 and 7 (lay-off). Alice’s middle childhood years fall partly outside of the time range for which father’s job history is available, and thus Alice is dropped from the sample, leaving only Ben in the sample. Ben has experienced a lay-off event during his middle childhood years, and he hasn’t experienced a factory folded or quit event. Ben moves out of the family in year 1987 (at age 22) and forms his own household, and this newly formed household is added to the PSID survey from 1987 onwards. The stock market participation of Ben’s household is then observed in the 1989 survey wealth supplement data.

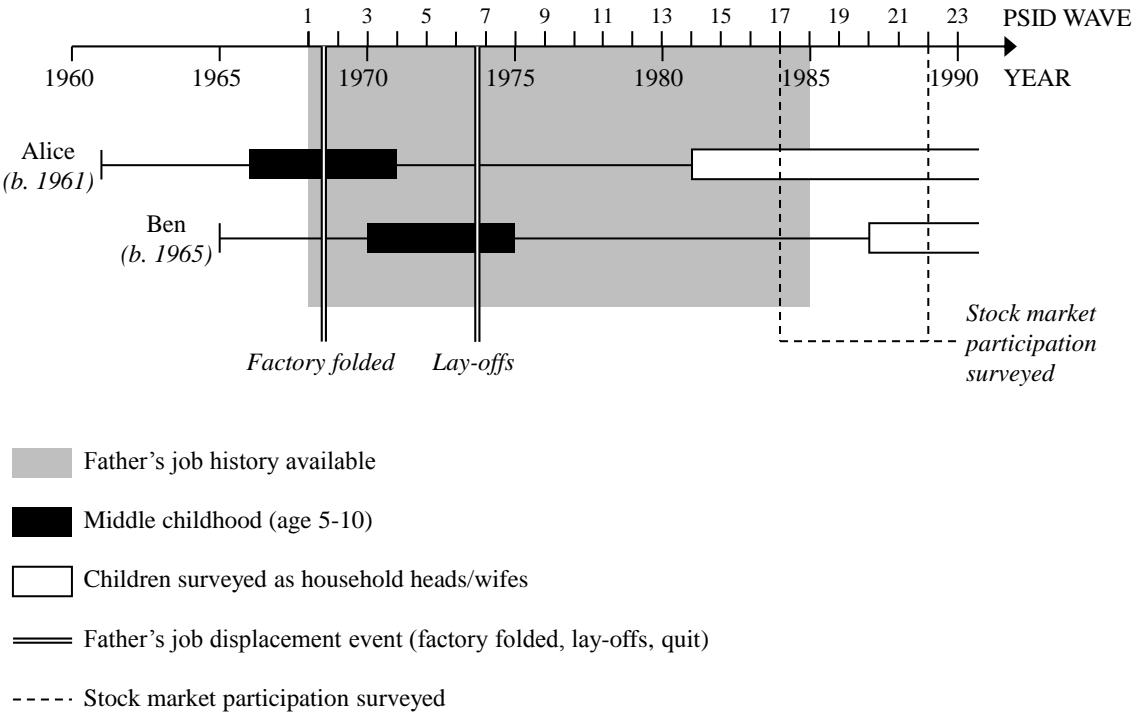


Table 1: Childhood experience of father’s job displacements

This table shows the proportion of respondents with childhood experience of father’s job displacement over the following periods: early childhood, Middle childhood, and early adolescence. The sample includes only those respondents who later as adults were household heads or wives during PSID survey waves that asked households about their stock market participation. Household heads’ job is recorded every wave; if the current job differs from the job mentioned in the previous wave, the reason for this job change is asked. This job-change question is asked from all household heads whose job/employer changed between survey waves, including both employed and unemployed household heads. PSID codes these job displacement reasons under the following categories: 1) factory folded, 2) laid-off, 3) quit. Folded or Laid-off indicator combines the factory folded and laid-off indicators, and Any job change indicator combines all three indicators. Longer childhood experience periods require longer job history data and thus the number of respondents for whom the experience indicator can be calculated (N) is negatively related to the length of the age range.

Childhood period	Years	N	Father’s job displacement experience (in %)				
			Factory folded	Laid-off	Quit	Folded or Laid-off	Any job change
Early childhood	0–5	2,771	7.8	18.1	37.1	23.5	48.9
Middle childhood	5–10	3,412	7.3	14.9	28.5	20.0	39.7
Early adolescence	10–15	3,536	6.7	11.1	20.8	16.3	31.4
Early and Middle childhood	0–10	2,394	14.1	25.2	50.0	33.1	61.4
Middle childhood and Early adolescence	5–15	2,964	12.8	21.2	39.3	28.9	51.5
Childhood and Early adolescence	0–15	2,077	19.0	29.8	56.9	39.1	67.4

Table 2: Summary statistics for dependent and control variables

This table reports summary statistics of the dependent and control variables for PSID households for which the father’s unemployment indicator can be calculated (age range 5–10 years). The sample only includes survey years during which information on stock ownership data was collected. This sample consists of 3,412 distinct respondents. Q1 and Q3 refer to the 25th and 75th percentiles. Variables denoted by † are dummy variables. African-American and Hispanic dummies measure the response of the PSID household head. Average Age and Average Male are interview wave–household averages; for example, Average Male takes the value of 0 for a household with a single female, 0.5 for a household with both a female and male spouse, and 1 for a household with a single male. Father’s and Mother’s education are the medians of the parents’ self-reported years of education from previous PSID survey responses.

Variables	N	Mean	Std.dev.	Min	Q1	Median	Q3	Max
Stock mkt participant †	16,392	0.17						
African-American †	16,390	0.25						
Hispanic †	15,156	0.04						
Average Age	16,391	31.7	7.16	15	26	31	37	57
Average Male	16,392	0.47	0.32	0	0.5	0.5	0.5	1
Father’s education	16,392	12.5	3.04	1	12	12	15	17
Mother’s education	16,287	12.4	2.30	1	12	12	14	17

Table 3: Descriptive statistics (HRS)

This table reports descriptive statistics for all observations of 16,820 different Health and Retirement Study (HRS) households. Q1 and Q3 refer to the 25th and 75th percentiles. Stock market participation and surprise inheritance are dummy variables measured at the household level (denoted by †). The remaining variables are household-level averages of variables individually surveyed. ‡ denotes household-wave averages of individual-level dummy variables. Male takes the value of 0 for a household with a single female, 0.5 for a household with both a female and male spouse, and 1 for a household with a single male. The household-wave level averages may change over time due to changes in the make-up of households.

Variables	N	Mean	Std.dev.	Min	Q1	Median	Q3	Max
Stock mkt participant †	95,285	0.29						
Father unemployed ‡	97,328	0.22	0.37	0	0	0	0.5	1
Male ‡	97,328	0.38	0.34	0	0	0.5	0.5	1
African-American ‡	97,328	0.14	0.34	0	0	0	0	1
Hispanic ‡	97,328	0.08	0.26	0	0	0	0	1
Age	97,327	68.1	11.3	25	59	67	76	109
Father's education	83,227	8.97	3.30	0	7.5	8.5	12	17
Mother's education	84,995	9.27	3.05	0	7.5	8.5	12	17
Surprise inheritance †	56,766	0.009						

Table 4: Stock market participation and childhood experience of father's unemployment

This table reports the marginal probability of stock ownership for PSID households from logit models including childhood experience of father's unemployment. The estimates are shown as percentages. Factory folded, Laid-off, Quit, and Factory folded or Laid-off are dummy variables measuring childhood experience of father's job displacements. The experience measures are created for the period of Middle childhood (years 5 to 10). † denotes dummy variables. Average Age and Average Male are interview wave-household averages. The z -statistics based on clustered standard errors are shown in paranthesis. ***, **, and * refer to 1%, 5% and 10% significance levels respectively.

	Stock market participation			
	(1)	(2)	(3)	(4)
Factory folded or Laid-off †	-7.49*** (-6.27)	-2.95** (-2.18)		
Factory folded †			-4.83** (-2.53)	-2.86 (-1.45)
Laid-off †			-7.94*** (-6.11)	-2.97* (-1.91)
Quit †			0.57 (0.46)	0.47 (0.43)
Average Age		0.71*** (9.50)		0.71*** (9.54)
Average Male		5.07*** (3.35)		5.05*** (3.33)
African-American †		-11.90*** (-11.00)		-11.89*** (-10.98)
Hispanic †		-1.60 (-0.67)		-1.66 (-0.70)
Father's education (years)		2.00*** (7.84)		1.99*** (7.80)
Mother's education (years)		1.80*** (5.68)		1.79*** (5.69)
Wave dummies	Yes	Yes	Yes	Yes
Pseudo-R ²	0.014	0.126	0.015	0.126
N _{Households}	3,412	2,986	3,412	2,986
N _{Observations}	16,392	15,060	16,392	15,060

Table 5: Stock market participation and random effects models

This table reports the marginal probability of stock ownership for PSID households from linear and logit random effects (RE) models including childhood experience of father's unemployment. The random effects logit models are estimated assuming that individual random effects equal zero. The estimates are shown as percentages. Factory folded, Laid-off, Quit, and Factory folded or Laid-off are dummy variables measuring childhood experience of father's job displacements. The childhood-experience measures are created for the childhood age range of 5 to 10 years. † denotes dummy variables. Average Age and Average Male are interview wave-household averages. The z -statistics based on clustered standard errors are shown in parenthesis. *** and ** refer to 1% and 5% significance levels respectively. R^2 statistics reported for the linear models are overall R^2 s while the RE logit model statistics are McFadden's pseudo- R^2 s.

	Stock market participation			
	Linear RE model		Logit RE model	
	(1)	(2)	(3)	(4)
Factory folded or Laid-off †	-3.75*** (-3.59)		-2.83*** (-2.80)	
Factory folded †		-2.37 (-1.49)		-1.68 (-1.04)
Laid-off †		-3.86*** (-3.38)		-3.17*** (-2.84)
Quit †		0.12 (0.11)		0.59 (0.58)
Average Age	0.72*** (10.79)	0.72*** (10.82)	0.68*** (9.45)	0.68*** (9.44)
Average Male	3.10** (2.56)	3.07** (2.53)	3.42*** (2.97)	3.40*** (2.95)
African-American †	-8.39*** (-9.24)	-8.38*** (-9.19)	-7.95*** (-11.79)	-7.94*** (-11.76)
Hispanic †	-0.02 (-0.01)	-0.05 (-0.02)	0.80 (0.37)	0.76 (0.35)
Father's education (years)	1.96*** (8.91)	1.96*** (8.91)	1.90*** (7.82)	1.89*** (7.80)
Mother's education (years)	1.99*** (6.90)	1.98*** (6.88)	1.89*** (6.86)	1.89*** (6.85)
Wave dummies	Yes	Yes	Yes	Yes
R^2	0.102	0.102	0.067	0.067
$N_{\text{Households}}$	2,986	2,986	2,986	2,986
$N_{\text{Observations}}$	15,060	15,060	15,060	15,060

Table 6: Stock market participation and experience over varying age ranges

This table reports the marginal probability of stock market participation for PSID households estimated from logit models of childhood experience of father's unemployment. The estimates are shown as percentages. The columns have the Factory folded or Laid-off childhood experience indicator variables calculated over different age ranges; all other variables are the same in all models. † denotes dummy variables. Average Age and Average Male are interview wave-household averages of respondent level dummies. The z -statistics based on clustered standard errors are shown in parenthesis. *** and ** refer to 1% and 5% significance levels respectively.

	Stock market participation					
	Early child- hood	Middle child- hood	Early adoles- cence	Early and Middle childhood	Middle childhood and Early adoles- cence	Childhood and Early adoles- cence
	0–5 yr	5–10 yr	10–15 yr	0–10 yr	5–15 yr	0–15 yr
Factory folded or Laid-off †	-1.31 (-0.94)	-2.95** (-2.18)	-3.95*** (-3.03)	-2.40* (-1.76)	-3.06** (-2.50)	-1.90 (-1.36)
Average Age	0.72*** (7.27)	0.71*** (9.50)	0.70*** (10.51)	0.72*** (6.46)	0.70*** (8.64)	0.68*** (5.65)
Average Male	4.52*** (2.97)	5.07*** (3.35)	5.16*** (3.40)	5.11*** (3.06)	4.92*** (2.95)	5.09*** (2.83)
African-American †	-10.98*** (-10.00)	-11.90*** (-11.00)	-13.25*** (-12.66)	-10.76*** (-8.36)	-12.48*** (-10.76)	-11.22*** (-8.21)
Hispanic †	-1.77 (-0.79)	-1.60 (-0.67)	-3.98* (-1.68)	-1.55 (-0.61)	-2.05 (-0.80)	-0.76 (-0.28)
Father's education	1.94*** (6.63)	2.00*** (7.84)	1.91*** (8.09)	2.08*** (6.36)	2.02*** (7.35)	2.15*** (6.10)
Mother's education	1.86*** (5.55)	1.80*** (5.68)	1.88*** (6.10)	1.91*** (5.12)	1.81*** (5.23)	1.88*** (4.58)
Wave dummies	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo-R²	0.107	0.126	0.134	0.106	0.121	0.099
N_{Households}	2,532	2,986	3,060	2,195	2,576	1,894
N_{Observations}	11,262	15,060	16,756	9,977	13,375	8,898

Table 7: Stock market participation of older households (HRS)

This table reports the marginal probability of household stock market participation on self-reported experience of father's unemployment before the age of 16 in HRS data. The estimates are shown as percentages. Stock market participation and inheritances are surveyed at the household level. All remaining variables, which are surveyed at individual-respondent level, are included as household-wave averages. Surprise inheritance indicator refers to a receipt of inheritance when the household members in the previous HRS surveys reported a zero probability of receiving an inheritance within the next 10 years. z -statistics based on clustered standard errors are shown in parenthesis. *** and ** indicate significance at the 1% and 5% levels respectively.

	Stock market participation		
	(1)	(2)	(3)
Father unemployed	-3.63*** (-4.38)	-2.88*** (-3.22)	-3.61*** (-3.54)
Male		8.80*** (10.01)	8.51*** (8.29)
African-American		-30.90*** (-21.85)	-30.88*** (-18.54)
Hispanic		-32.64*** (-16.49)	-33.63*** (-14.08)
Age		0.07** (2.54)	0.11*** (3.20)
Father's education (years)		1.47*** (10.12)	1.46*** (8.99)
Mother's education (years)		1.26*** (7.54)	1.32*** (6.99)
Surprise inheritance			10.08*** (5.04)
Wave dummies	Yes	Yes	Yes
HRS cohort dummies	Yes	Yes	Yes
Census division dummies	Yes	Yes	Yes
Pseudo-R²	0.001	0.086	0.084
N_{Households}	16,820	13,854	12,124
N_{Observations}	95,285	77,876	46,044

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