Investing Like My Parents: Do Parents Affect Children's Risk Taking Behavior?

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Abstract

We find that learning from parents explains heterogeneity in financial decisions later in life. Using parents' stock market experiences before parenthood as instrumental variables for parents' risk-taking, we show that parents' risk-taking positively affects children's stock market decisions. More importantly, exploiting a finding that parents spend more quality time with their first child, we find that this parental effect is mainly driven by learning from parents through one's childhood interactions with parents. We also examine the wealth outcomes implied. Our results contribute to the understanding of how family traits passed down over generations could lead to wealth inequality across families.

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1 Introduction

One of the most important topics in financial economics is the origins of risk-taking behavior. Most research focuses on examining how the individual investor's investing experience and genes shape their stock market decisions. Studies have shown that the more recent personal experiences with macroeconomic shocks (such as stock market depressions) change people's stock market participation decisions (Malmendier and Nagel, 2011). Another strand of studies argues that parents' genes affect children's risk-taking. And surprisingly, nurturing has very little explanatory power for financial risk-taking (Barnea, Cronqvist, and Siegel, 2010).

In this paper, we address this apparent conflict and extend the literature by focusing on a specific channel, learning from one's parents, which can be viewed as a type of "family traits" that get passed down in the family generation over generation. We ask whether parents affect their children through early-on interactions and have a long-lasting effect on their children's risk-taking behavior in adulthood. Specifically, we test whether parents pass their previous stock market experiences to their children through this channel. We focus on the parental experiences because previous economic experiences are important for parents risk-taking (Malmendier and Nagel, 2011) and it provides variation in parental effects across families.

Moreover, we also explore the wealth inequality implications of this generational effect. One of the most important issues nowadays is the ongoing trend of rising wealth inequality. By the end of 2016, the top 20% of households own 77% of wealth in the US.[1] And an important source of wealth inequality is stock market participation. Over time and on average, those families that participate end up being much wealthier than those that don't (Pastor and Veronesi, 2018). We fill the gap in the literature by studying the generational influences of learning from one's parents, which affect family wealth accumulation over generations and have long-lasting implications on wealth inequality.

[1] Based on the Gini Coefficient of US at the end of 2016.

We start by empirically examining whether parents pass on their risk-taking behavior to their children. First, we confirm that parent risk taking is positively correlated with their children's risk-taking in the stock market. Consistent with theories that predict children are very similar with their parents when perceiving risk, we find that though children and parents differ considerably in terms of factors that affect stock market decisions (such as life time experience of the stock market returns, wealth, age and retirement status), they exhibit similar risk-taking behaviors in the stock market.

A key challenge in our identification of this family trait is to separate out the effects of parents' risk-taking from other omitted variables. Parents' risk-taking in the stock market can be correlated with unobservable factors such as family environment, family's financial balance with children growing up. These factors might also affect children's risk-taking, thus the positive correlation between parents' risk-taking and children's risk-taking in the stock market can be driven by our channel, or the fact that parents provide the financial and cultural environment in which children grow up.

We rely on Malmendier and Nagel (2011)'s finding that one's past experience of the stock market affects their stock market participation, and then use parents' stock market experience before the child was born to instrument for parents' risk-taking. Before the birth of the child, parents experienced a "low" or "high" period of stock market returns, while the child didn't directly "experience" those returns. We test how the part of parents' risk-taking, which is formed from their own stock marekt experiences before they have children, can explain their children's risk-taking in the stock market after the children start their own families. Specifically, we find that children's perception of the stock market is dampened/encouraged by their parents negative/positive experience of the stock market, controlling for the effects of income, pension benefits, race, education, marital status and birth year fixed effects.

As shown in Fig. 1, those children whose parents have experienced a bullish stock market before parenthood exhibit higher risk-taking tendencies by investing more in the

stock market.

[see Figure 1 near here]

Second, to identify the "learning-from-parents" mechanism, we exploit the finding that parents on average spend 20-30 more minutes of quality time with first-born children per day, than with later-borns (Price, 2008). We find that first-born children, who potentially receive more interactions from parents, are more heavily affected by their parents' risk-taking in the stock market. [2] Moreover, the effect is more pronounced especially when the birth gap (in years) between first-born and later-born is larger. This indicates that early-life interaction with parents is an important element of the parents' effect we find and suggests that our findings are mainly driven by the "learning-from-parents" mechanism.

Then we continue to examine whether this effect from parents fades away as children age or move further away from home. We provide evidence consistent with the hypothesis that there is a non-genetic element in the parental effect on children's risk-taking in the stock market and this "learning-from-parents" factor doesn't fade away as children age.

Finally, we find that the influence from grandparents continues to affect the third generation, confirming a generational channel. With a back-of-the-envelope calculation, we show that the grandparents' allocation of assets to the stock market and their influence on children and grandchildren can lead to major wealth inequality in the third generation, with a gini coefficient of 0.34. The gini coefficient of U.S. in 2016 is 0.415, which suggests that the "learning-from-parents" mechanism we find can cause an increase in wealth inequality after generations.

Our data are from the Panel Study of Income Dynamics database, which contains complete family trees for several thousand households. Additionally, the database includes the investment characteristics of those households. Our methodology allows us to match children with their parents and identifies how parents' risk-taking explains idiosyncrasy in individual

[2]For the tests related to this part, we focus on families with more than one child. All the only-child families are excluded.

risk preferences. By using parents' macroeconomic experience before children were born as IVs, our identification strategy does not rely on the experience and environment that parents and children share together. Thus we identify the parents' risk-taking formed from their earlier experiences before their children were born, and find that this part of their risk-taking has a statistically and economically significant effect on their children's risk-taking in the stock market.

The economic magnitude of the effect is large. Specifically, a one standard deviation increase in experience-induced parents' stock market participation tendency leads to a 60% increase in children's stock market participation. A one standard deviation increase in parents' allocation to the stock market induced by experience drives up children's allocation to the stock market by 11%.

This article connects to several strands of literature. We examine how learning from parents through childhood interactions persistently affects children's decisions in the stock market, and what shapes the way that parents affect their children. The literature on the environment and one's preferences posits that the early environment that individuals grow up in affects our financial decisions and trust in financial institutions (Malmendier and Nagel, 2011; Guiso, Sapienza, and Zingales, 2004). It is also related to the studies that argue social interactions affect one's beliefs. Cipriani, Giuliano, and Jeanne (2013) find that children's cooperative preferences resemble their parents. Pool, Stoffman, and Yonker (2012) find that interaction with neighbors affects mutual fund managers' portfolio choices. Hong, Kubik, and Stein (2004) show that households who interact more with neighbors or attend church more often are more actively investing in the stock market. It also connects to the studies that focus on wealth inequality. Pastor and Veronesi (2018) find that populism can be explained by wealth inequality, which is caused by heterogeneity in risk aversion and economic growth.

Our evidence that one's risk preference is affected by their parents' macroeconomic experience suggests that risk preferences can be passed on through generations, and macroeconomic shocks can affect more than just one generation. It provides ground for understanding

stable inter-generation individual risk preferences.

2 Related Research

In this section, we review the research providing the basis for our hypothesis that learning from parents might explain heterogeneity in adult financial risk taking. We also discuss the research that we base our identification strategies on.

2.1 The parental effect

The parental effect is well supported by the psychology literature that find parents and children exhibit a wide range of behavioral and attitude similarities. For example, in Glass et al. (1986), they find that parents pass their attitudes in areas such as gender roles, politics and religion beliefs to their children. Elkins et al. (2004) find that parents and their grown up children exhibit similar tendencies in alcohol or drug usage. In the area of financial economics, Cesarini et al. (2009) find that giving and risk taking behaviors are heritable from parents. Moreover, Dohmen et al. (2012) find that parents affect their children's willingness to take risks and willingness to trust others.

There are several possible mechanisms that can explain this parental effect on children's financial decisions. The first one, which we call the genetics mechanism (or the "natural" mechanism), shows that parents and children share similar genes that form their risk attitudes (Barnea et al., 2010, Zhong et al., 2009, Dohmen et al., 2012). The second mechanism refers to environment, and it shows that parents and children, during the formative years, go through common experiences that shape their later risk-taking behavior (Malmendier and Nagel, 2011). The third mechanism is learning from parents. This involves parents educating their children about risk-taking through interacting with their children during the children's childhood.

Most literature do not distinguish between the second and the third mechanism, and suggest a transitory combined effect of these two. We, on the other hand, try to evaluate

this generational factor, the "learning-from-parents" mechanism, by testing how parents' experiences (before children) induced risk-taking can affect children's risk-taking and exploit the wealth inequality outcomes of the third channel.

2.2 Learning from parents

The education literature shows that interactions between children and parents during the children's formative years are extremely important for children (Dixon et al., 1981; Brestan et al., 1997). Those early-on interactions could affect children's long-term perceptions and decisions, such as career choices and marital status. In this paper, we explore whether children learn from their parents risk-taking patterns.

To identify this learning from parents channel, we need to address the endogeneity issue caused by shared genes and shared environment among parents and children. As a result, we apply a set of variables that describe parents' stock market experiences before children were born as instrumental variables for parents' risk-taking in the stock market later. Our main set of instrumental variables are the stock market experience variables as suggested by Malmendier and Nagel (2011). They apply the (recency) weighted average of stock market return over one's life and find one's experience of stock market returns affects his future stock market decisions. And we extend their measure of experience by including four different moments of the stock market return since one was born, the average, volatility, maximum and minimum of the time series distribution.

2.3 The first-born children and birth spacing

2.3.1 The first-born children

All the children in the same family share the same environment growing up, while each child experiences a different level of interactions with parents. To further identify the "learning-from-parents" mechanism, we rely on the related education and psychology literature regarding first-born children.

The findings suggest that parents spend more time and put more effort, on their first born. Specifically, Price (2008) finds that a first-born child receives 20-30 more minutes of quality time[3] each day with his or her parents than a second-born child of the same age from a similar family. Besides, in a recent study by Rohde et al. (2003) that surveys university students, results show that first-borns are closer to their parents comparing with later-borns. And parent-child closeness has been shown to affect children's learning of parents' risky behaviors such as drinking (Jung, 1995) and risky driving styles (Taubman-Ben-Ari et al., 2005).

First-born children thus receive more parents' attention and stay closer to parents. At the same time, they have an equal probability of inheriting the risk-affecting genes from their parents and were immersed in the same family environment as later-borns. As a result, the identification in this study exploits the heterogeneity in the interactions that children within the same family receive from parents and examines the learning channel through this heterogeneity.

2.3.2 Birth spacing

Moreover, Price (2008) finds that birth spacing, defined as the years between the birth of first-born and the birth of a later-born, affects the within family differences in parent-child interaction time. Because parent-child interaction time is decreasing as children age (and particularly as the first child ages), the first-born child receives much more quality time than the later-borns if the birth spacing is larger (the children are spaced further apart). Specifically, the first-born will be the only child in the household for a longer time, thus the difference in interactions received from parents between first-borns and later-borns are more salient.

[3]According to Price (2008), quality time includes all activities in which either the child was the primary focus of the activity or in which there would be a reasonable amount of interaction. It includes activities like reading to/with, playing (not sports), helping with homework, talking with/listening, helping/teaching, arts and crafts with, eating together, playing sports with, attending performing arts, attending museums, participating in religious practices, looking after, and physical care for.

In this study, we exploit this finding by examining the relationship between birth spacing and the parents' effect on their children's risk-taking. The further apart a sibling is from the first-born child, the less quality time she or he gets from the parents in the childhood, and the less they might learn from their parents. Thus, if our findings are mainly driven by the "learning-from-parents" mechanism measured with parent-child quality interactions, the effect from parents should decrease with birth-spacing.

3 Data and Measures

3.1 Data

The data in this study are from the Panel Study of Income Dynamics (PSID). We apply PSID data in our experiments to include information on parents. Our data track households' information every two years from 1999 to 2015. [4] For each household in each period, we assign households' risk-taking measures to both household heads and spouses (if there is such a person for that household) since one household makes financial decisions together. For each household head or spouse, we also include their parents' information by tracking their family tree from the Family Identification Mapping System (FIMS) in the PSID.

Our data are unbalanced panel data. For every data point, we record the household's risk-taking measures in a year, and the age of the household/household's spouse in that year to generate experience measures for each individual. We also record their parents' risk-taking measures and ages. Experiences are defined as the average, the volatility, the maximum return, and the minimum annual stock market return since the individual's birth year.

Our control variables include dummy variables for high school degree, college degree, number of children, the percentage of liquid asset invested in defined contribution plans or IRAs, total liquid assets, total income, marital status, retirement status, eligibility for defined benefit plans, and eligibility for defined contribution plans.

[4] Our sample starts from 1999 since there is no information on annuity/IRA in PSID before 1999. It ends at 2015 because it is the latest year in PSID as of June 2019.

We track the year children leave their parents' house. We define that year to be the year before they become a new head of household or the spouse. The physical location for both children and parents' houses are recorded at the state level.

Summary statistics can be found in Table 1. Our sample spans survey participants who have experienced a maximum market return as high as 0.450 (90 percentile) and a minimum market return as low as -0.367 (10 percentile). About 16.4% of the people in our sample participated in the stock market. And out of the sub-sample of people who participated in the stock market, they allocated 72.7% of their portfolios on average to the stock market. We have a fairly balanced sample that spans different income classes, age groups, and education levels.

In appendix results, we also use state level income growth data from the Bureau of Economic Analysis and tax rate change data from the Tax Foundation[5] as alternative measures of one's experience, since the income level and marginal capital gain tax also affect one's stock market participation. The state income growth rates are dated back to 1929 and the federal marginal tax changes are dated back to 1913.

[Insert Table 1 about here]

3.2 Risk-taking measures

We focus on two risk taking measures that are related to stock market decisions. [6] The two measures are (a) a binary measure for stock market participation, which takes value 1 if the household has positive investments in stocks or positive investments in annuity/IRA and value 0 if otherwise; and (b) a continuous measure, the proportion of liquid asset invested in stocks, defined as the ratio of the total investment in stocks plus the investment in annuity/ira

[5] http://www.taxfoundation.org

[6] Malmendier and Nagel (2011) adopt four different risk-taking behavior measures, i.e., (i) willingness to take the financial risk as indicated in a survey question, (ii) stock market participation, (iii) bond market participation, and (iv) the proportion of liquid assets invested in stocks. The PSID provides measures (ii) to (iv) but not (i). One slight difference is that the PSID's definition of bond includes insurance policies, while the SCF's definition of bond does not. Therefore, we focus on two measures in this study that are related to stock market decisions to be comparable with the literature.

over the sum of all liquid assets. The liquid assets of a household include stocks, annuity/IRA, bond/insurance, and any amount in a checking account.[7]

3.3 Experience measures

3.3.1 The measures

We base our instrumental variables on the experience measures applied in Malmendier and Nagel (2011) and use the four moments of stock market returns that parents experienced before the birth of children as instrumental variables for parents risk-taking.

Malmendier and Nagel (2011) start with a flexible estimation that allows for the possibility that experiences in the distant past have a different influence than more recent experiences. Then they summarize experienced returns as a weighted average and use a parsimonious specification of weights that can decline or increase over time.

We extend Malmendier and Nagel (2011)'s method and include three additional moments as our experience measures for both parents and children. As argued in Malmendier and Nagel (2011), one's extreme experience of the stock market, such as the Great Depression, might have a long-lasting and traumatic effect on one's risk attitude. We thus add the maximum and minimum experience of the stock market returns one experienced as two additional experience measures. What is more, one's perception of risk should also be related to how volatile they believe the stock market is. As a result, we include the standard deviation of one's stock market return experience as well.

3.3.2 The validity of measures

Malmendier and Nagel (2011) used Survey of Consumer Finances (SCF) data from 1983 to 2007. To confirm that those experience measures are still valid instrumental variables for one's risk measures, we start by replicating the Malmendier and Nagel (2011) estimation using our PSID data. Specifically, we estimate the following generic regression model and

[7]We exclude the investment in 401k/403b accounts.

simultaneously estimate the weights and individuals' sensitivity to experienced returns,

$$Measure_{it} = \alpha + \beta A_{it}(\lambda) + \gamma \times Controls_{it} + \epsilon_{it}, \tag{1}$$

where $A_{it}(\lambda)$ represents experienced returns and we estimate the coefficient β as well as the weight λ. As shown in the first column of Table 2, when stock market participation is the dependent variable, our estimation of coefficient β is 7.437, which comes very close to Malmendier and Nagel (2011)'s estimation of 6.963. Our estimated weight is 1.75, which is also close to Malmendier and Nagel (2011)'s estimation of 1.92. These results provide validity of using PSID data to estimate the effect of one's experience on one's stock market participation.[8] The findings in the first two columns of Table 2 show that 1) the average stock market return one experienced matters for her stock market participation/risk-taking; 2) the more recent experience matters more for one's stock market participation/risk-taking.

Next, we continue to verify that our other three experience-based moments have explanatory power on one's stock market participation/risk-taking behavior. Specifically, we add the maximum, minimum and standard deviation measures in the estimation, while we still allow for the importance of past experiences to differ based on how distant in the past they are by estimating weight λ. As shown in column (3) and (4) of Table 2, we find that our maximum, minimum and standard deviation measures have significant effect on one's risk-taking measure, while adding three variables doesn't change the weighting scheme much.[9]

Finally, we regress one's stock market participation/risk-taking on one's past experience measures and the parents' stock market participation/risk-taking measures under the same setting as Malmendier and Nagel (2011). As shown in the last two columns of Table 2, both one's past experience measures and the parents' measures matter for the children's

[8]Our second measure of risk-taking excludes the household's stock market investment in 401k/403b plan, which differs from Malmendier and Nagel (2011)'s definition. Thus the estimations are not comparable.

[9]Different from the replication in Table 2, we use average returns since 18 instead of weighted average returns in our estimations from Table 3 till the end for simplicity. In untabulated results, we manage to show that our estimations are persistent when using weighted average returns instead of average returns.

stock market participation/risk-taking. In terms of economic magnitude, a one-standard deviation increase in the children's weighted average return experience measure, leads to a 21% increase in the children's tendency to participate. For a one-standard deviation increase in the parents' tendency to participate, there's a 29% increase in the children's tendency to participate. Thus, the parental effect is almost as important as one's own experience of the stock market.

[Insert Table 2 about here]

4 Parental Effects on Children's Risk-taking

In this part, we test the effects from parents on children's stock market decision measures and identify the learning from parents channel.

4.1 OLS results: Parent and children stock market decisions

To start with, we use a simple OLS model to confirm that parents' risk-taking behavior is positively correlated with their children's risk-taking behavior. Specifically, we use one's stock market participation in year t (Measure 1) and one's allocation of liquid assets to the stock market in year t (Measure 2) as our two measures of risk-taking behavior. We control for one's demographic characteristics and financial situation by including education, one's own stock market experiences, the number of children one has, liquid assets, income, retirement status, pension plan, race, marital status and year fixed effects. We also cluster our results at the birth year level. The equation is as shown below,

$$Children\,Measure_{it} = \alpha + \beta \times Parent\,Measure_{it} + \gamma \times Controls_{it} + \epsilon_{it}. \qquad (2)$$

Results from Table 3 suggest that there is a positive and statistically significant correlation. Specifically, the higher the parents' stock market participation tendency, the higher the children's stock market participation will be; the higher parents' risky liquid asset ratio, the

higher the children's risky liquid asset ratio will be. The coefficients of parents' risk-taking are not only statistically significant but also economically significant. The findings suggest that the children of stock-market-participating parents are about 48% more likely to also participate in the stock market than the children of non-market participating parents. The children of parents who invest 100% of liquid assets in risky assets will allocate 10%, than the children of parents who invest only 10% in risky assets, after controlling for year fixed effects, and the effects from household demographics and financial status. Thus, we provide evidence that parents' risk-taking is positively correlated with children's risk-taking.

[Insert Table 3 about here]

Parents and children are commonly immersed in the same factors that shape one's risk-taking. Our next step is to identify the learning from parents mechanism from the genetics, and the environment mechanisms.

4.2 Learning from parents

4.2.1 The IV design

To examine our "learning-from-parents" mechanism, we apply a set of variables that describe parents' stock market experiences before children were born as instrumental variables for parents' risk-taking in the stock market. The first stage is as specified below,

$$Parents' \, Measure_{it} = \alpha + \beta \times Parents' \, Experience_i + \gamma \times Controls_{it} + \epsilon_{it} \qquad (3)$$

where parents' stock market decisions are measured by their stock market participation (Parents' Measure 1) and their proportion of liquid assets allocated to the equity market in year t (Parents' Measure 2). Parents' experiences are measured as the moments of their stock market returns experiences before their child.

The second stage then tests the effects of parents' risk-taking on a child's risk-taking

with the estimated parents' measures from the first stage.

$$Children's\, Measure_{it} = \alpha + \beta \times \widehat{Parents' Measure}_{it} + \gamma \times Controls_{it} + \epsilon_{it}, \qquad (4)$$

where $\widehat{Parents' Measure}_{it}$ is the predicted results from the first stage.

We also adopt a second set of IV, which is the 9-year state level average income growth rate prior to a child's birth (time length limited by available data and parents' age), and a third set of IVs, which are the numbers of federal marginal capital gain tax rate hikes and drops.[10]

The use of IVs excludes the genetic mechanism and the part of the effect that is from the environment mechanism that does not correlate with those experiences prior to children's birth.

4.2.2 Parents' experience and children's risk-taking

Before we conduct the IV test, we first examine the effect of parent stock market experiences and children stock market experiences on the adult children's risk-taking decisions. Specifically, we run children's risk-taking behavior against four lifetime experience measures (for parents and children): the average annual market return, the annual return volatility, the maximum market return, and the minimum market return, controlling for year fixed effects, households demographics and financial status variables.

[Insert Table 4 about here]

As shown in Table 4, the higher market volatility, the lower maximum market return, and the higher minimum market return one experienced, all lead to a lower market participation tendency and a smaller fraction of liquid assets invested in the stock market. And both parents and children stock market experience measures have significant effects n the children's stock market decisions. The results are persistent with a simple average measure (See Table

[10]The results of the second and third sets of IVs can be found in Appendix Table A.1.

4) or a weighted average measure of the stock market returns (similar to Table 2). This indicates that both parents experience before the birth of the children, and the children's own lifetime experience, can explain children's stock market decisions.

This finding also suggests a more complicated structure of experiences' effect on us. One illustrative example would be a child who grew up in a relatively bearish stock market, while the parents experienced a bullish stock market before the child was born. Instead of only considering his own experience when making investment decisions and invest more conservatively, this child also takes the effect driven by learning from parents into consideration and would stay more positive of the future stock market compared to a child who was born in a family with parents who only experienced the bearish stock market. This possibility is confirmed by the regression with parents' experiences, as shown in Table 4. When both children's and parents' experiences are in the equation, the negative effect of the average return experienced by the children loses its statistical significance.

We thus confirm that people learn from what their parents have experienced in addition to their own experience. Notably, when children's own lifetime stock market experience and parents' stock market experience before their children were born were both included in the regression, parents' experience before their children still matters for the children's risk-taking in the stock market. Thus this provides the implication that parents' stock market experiences before children could affect both the parents' risk-taking and the children's risk-taking.

4.2.3 Main results with IVs

Now we adopt the two-stage IV method described in 4.2.1. Table 5 demonstrates our second stage results. Parents' risk-taking, instrumented with parent experiences before the birth of the child, has a positive and significant effect on their children's risk-taking.

Specifically, as shown in column (1), a one standard deviation increase in parents' stock market participation probability leads to a 60% increase in the possibility of children par-

ticipating the stock market, while a 1% increase in parents' stock market allocation leads to a 10% increase in the children's portfolio allocation to equity. We control for the household characteristics, the year fixed effects and cluster standard errors at birth year level. [11]

[Insert Table 5 about here]

IV coefficients larger than OLS coefficients As shown in Table 5, the coefficients in our IV estimates are larger than that of the OLS estimates, which could be due to local treatment effects, weak instrumental variables or bias from specification search (Jiang, 2017). To address the potential weak IV concern, we conduct a post-estimation weak IV test. For the estimation in column (2), the effective first-stage F statistic of Montiel Olea and Plueger (2013) is 16.223, which is larger than the general rule of thumb value of 10 and MOP critical values at 10% significance level, which is 14.546 for TSLS, and 10.527 for LIML. The result thus rejects the hypothesis of weak IV (Andrews et al., 2018). As for the estimation in column (1), the model is nonlinear so we follow Stock-Yogo (2005) and use the Kleibergen-Paap Wald F statistics. The F-statistics from first stage is 15.092, which is larger than the 10% maximal IV relative bias value from Stock-Yogo weak ID test of 10.27. Thus, the result rejects the hypothesis of weak IV at the 10% significance level as well.

Another reason that could lead to the larger coefficients in our IV estimations is bias from specification search, which is mainly driven by wealth. That is, parents who experienced better stock market before are likely wealthier, and their children are thus probably wealthier as well, wealth is positively correlated with stock market participation decisions. To address this issue, we start by testing with a small sample of households where we know the household demographic characteristics when the children was born. After controlling for the household level income, state level income and number of children in the household when the children

[11] We also apply two other sets of instrumental variables for parents' risk-taking. Adopting the same IV method with the number of federal marginal income tax hikes and drops the parents experienced before as a second set of instruments (and the state income growth the parents experienced before as a third set of instruments), we analyze the influence of parents' risk-taking on children's risk-taking behavior. Results are reported in Appendix Table A.1.

were born, our results stay unaffected (see Appendix Table A.5).

To further address the endogeneity concern that parents who experienced better stock market before parenthood are wealthier, we test the current wealth and income status of the parents in Appendix Table A.6. We find that after years of accumulation in wealth, parents who experienced a bad stock market before child actually catch up in terms of wealth levels. They don't have a wealth that's statistically different from those who experienced a good stock market before. Those parents who experienced a bad stock market before probably catch up by having higher income over the years. However, their children, as shown in Table 3, are still less likely to participate in the stock market and invest less in the stock market. This is an important fact. Even though parents eventually have equal wealth, their children do not.

The Local Treatment Effect As a result, it is very likely that our IV estimates are capturing a local treatment effect. That is, we are capturing a marginal effect that is driven by learning from parents. Though we cannot fully rule out the possibility of weak IV or bias from specification search, the results so far don't suggest that those two reasons are likely the major cause for the larger coefficients in the IV estimates.

To further that our results are driven by the local treatment effect, we start by showing that our IV results are driven by the compliers in our sample. The compliers in our setup are the parents whose stock market investment decisions could have been reversed had the parent experienced a higher/lower stock market period before the birth of her children. To be clear, compliers are those parents who participated/invest more in the stock market but would have chosen not to participate had the parents experienced a lower stock market return period before the birth of their children.

We follow the methodology in Dahl et al. (2014a) and find that 8% of the children in our sample are children of parents who are compliers, 27% of our sample are children of parents who are always-takers, while 65% of our sample are children of parents who are never-takers.

Using our estimates of the shares of compliers, we calculate the expected probability that a child of a complier parent whose stock market experience was good will allocate 15% of her asset to the stock market on average, which is comparable to the average children fraction of asset in stock market of 28%.

In Table A7, we investigate differences in characteristics between the average and marginal parents affected by the treatment. In each odd column, we evaluate the correlation between actual parents' measure and the characteristics of the children; in each even column, we calculate the relationship between instrumented parents' measure and the same characteristics. We find that the marginal children are more likely to have a college degree, and slightly higher income. Across the other four factors, including high school, gender, having children, wealth, we find no evidence of a localized treatment effect among the population.

In summary, this statistical exercise demonstrates that our IV is a reasonable control for endogeneity in spite of the fact that its' coefficient is larger than the OLS coefficient.

4.2.4 The first-borns and birth spacing

The results from the IV test suggest a significant influence of parents on children's risk-taking behavior in the stock market. However, the instrumented variable can not fully exclude the environment mechanism, because it is possible that some environmental factors that both parents and children experienced can be correlated with our instrumental variables. For example, the neighborhood economic situation, which has been shown to affect people's risk-taking, affects both the parents' and children's risk-taking behavior in the stock market. At the same time, the stock market returns before children were born can affect the parents' wealth condition and correlate with the neighborhood economic situation and other environmental factors similarly. Therefore, after applying our IVs, we might identify a positive effect from parents due to the "learning-from-parents" effect or the environmental effect that is correlated with parents' experience before children were born.

To identify the true learning from parents effect, we exploit the heterogeneity in parental interaction time for children within the same family. Specifically, we test whether parents have stronger effects on their first-born. Table 6 reports the results of the test with an interaction term between being first-born and instrumented parents' risk-taking in the stock market.

[Insert Table 6 about here]

As shown in Table 6, we find that the parental impact is positive and significant for first-borns. Moreover, we find that the further a later child is spaced from the first child, which means the less time later-borns receive from parents, the weaker the effects parents have on the later-born's risk-taking. The results thus provide evidence that the effect we identified is truly a learning-from-parents effect that comes from one's childhood quality time with parents. [12]

5 The Characteristics of "Learning from Parent" Effects

Our results so far suggest that learning from parents significantly affect children risk talking later in life. In this section, we analyze several characteristics of this effect, including the persistency, the characteristics that could strengthen or weaken this effect.

5.1 Does this effect change over time and space?

Next, we ask the question of whether this learning-from-parents effect is as persistent as the genetics effect, which is "coded" into our body. We run two separate sets of regressions to investigate.

In the first set of regressions we add a variable of how many years has passed since the child left their parent's house and the interaction of this variable with instrumented parents'

[12]To address the potential endogeneity concern that first-borns are wealthier and thus more likely to participate, we test whether there's any wealth difference between first-borns and later-borns in our sample. In untabulated results, we manage to show that first-borns and later-borns don't differentiate statistically or economically in terms of wealth in our sample.

risk-taking measures. If the learning-from-parents effect is not persistent, we would expect to see a decreasing influence from parents as time goes by. As shown in Table 7 Panel A, the interaction term does not have a significant coefficient in all specifications. This suggests that this indirect effect of parents' experiences through the learning-from-parents mechanism is indeed very persistent and does not decay with time. Notably, our instrumented parents' risk-taking still has a significant effect on the children's risk-taking in the stock market.

[Insert Table 7 about here]

In the second set of regressions, we add a dummy variable measuring whether the child remains in the same state with parents after leaving home, and an interaction term with the dummy and instrumented parents' risk-taking measures. We assume children living in another state have fewer visits to their parents and hence weaker after grown-up connections and social interactions. If the learning-from-parents effect is decaying with the weaker parents-children connection, we would expect a negative coefficient for the interaction term. The result in Table 7 Panel B indicates otherwise. The coefficient of the interaction term is insignificant across all specifications and the signs are inconsistent, which suggests that the effect is not stable and doesn't make economic sense. This is consistent with the conjecture that the effect we identify comes mainly from one's childhood interactions with parents instead of social interactions with parents after growing up.

Results from these two sets of regressions show that this non-genetic effect is persistent and it doesn't depend on the time we leave our parents' homes or the distance from them. This result indicates that our childhood interactions with parents are important and have a long-lasting effect on our later investment choices.

5.2 Does household characteristics affect this effect?

Lastly, we ask whether some household characteristics affect the pass-through effect from parents to children. Given the existence of a strong learning-from-parents mechanism, we expect household characteristics that correlate with better or increased children education

efforts to predict larger pass-through effect. To investigate, we run the same IV regression with stock market returns as an instrument with an additional interaction term between projected parents risk-taking and household characteristics in the second stage regression. Table 8 reports two characteristics associated with stronger effects.

[Insert Table 8 about here]

Specifically, we find the learning-from-parents effect is weaker for parents with a defined benefit pension. Parents with a defined benefit pension have more secure income in retirement, therefore they can have less incentive to spend effort in personal financial planning, nonetheless teaching their children on this topic. As a result, a defined benefit pension reduces the learning-from-parents effect from parents to children.

Similarly, we find the effect is stronger for parents with college degrees. A better educated parent is a better teacher for their children, which amplifies the learning-from-parents effect on personal finance risk-taking behavior.

6 Multi-Generation Implications

6.1 Reducing the possible environmental effect

Previous analysis indicates that there is a strong influence from parents that shapes children's risk-taking behavior in the stock market. One caveat of the IV results, as mentioned before, is that it can contain both the learning-from-parents effect and the effect from the shared environment effect. We highlight the learning-from-parents effect with the first-born results in Section 4. Here, we address the concern further by including the third generation effect.

The part of the environmental effect we try to eliminate is the part that is shared by both parents and their children, which is correlated with the stock market environment before the children were born. This mechanism is likely since the children's stock market experience can be correlated with the parents' stock market experience before children were born. However, if we use grandparents' experiences before parents were born as instrumental

variables (for parents stock market decisions), the IVs are much less likely to correlate with the environment after the third generation children were born.

[Insert Table 9 about here]

With those instrumental variables, we expect to have the same coefficients through the learning-from-parents mechanism. However, the effects from the shared environment mechanism should be weaker. That is indeed what we find. Comparing the results reported in Table 9 and those reported in Table 5, we find that using grandparents' experience as the instrumental variables predicts similar size of the impact, for both risk-taking measures. It has two implications, 1) we indeed capture a strong and significant learning-from-parents effect on risk-taking from parents to children, 2) the effect from environmental factors that correlates with prior stock market returns is marginal, which strengthens our findings in Table 5.

6.2 Multi-generation structure

Our results suggest a complicated multi-generation structure of how past macro-economy history influences household risk-taking behavior. We learn from our own experiences as Malmendier and Nagel (2011) suggests, we also learn from our parents' experiences through a learning-from-parents mechanism, and we even learn from our grandparents' experiences through the persistent multi-generation learning-from-parents mechanism. The historical stock market returns experienced by our elders, even the ones that have been long gone by one generation, shape how we behave today.

To investigate the economic significance of grandparents' experiences, we run a three stage SLS regression. In the first stage, we regress grandparents' risk-taking on their own experiences before their children were born. In the second stage, we use estimated grandparents' risk-taking in the stock market to predict parents' risk-taking behavior in the stock market. In the third stage, we use estimated parents' risk-taking to predict children's risk-

taking in the stock market. Therefore, we are able to see how grandparents' experiences influence three generations of people in the family.

Similar to how parents influence their children, grandparents influence the parents generation in the same way. More importantly, the parents' risk-taking influenced by grandparents continues to influence their children.(Table 9 Panel B) And not surprisingly, the grandparents' experience has stronger impact on their children (the parents generation) than on their grandchildren.

6.3 Wealth inequality implications

To better understand the importance of these multi-generation results, we study the wealth inequality implications of this parental learning-from-parents mechanism.

With the 3SLS model in Section 6.2, we estimate the differences in wealth outcomes after three generations, driven by this learning-from-parents effect alone. Specifically, with the results of Table 9 Panel B, we first predict the percentage of liquid assets a grandparent allocates to the stock market, instrumented with one's experience before the birth of child (the parents' generation). We next predict the percentage of liquid assets a parent allocates to the stock market, instrumented with the percentage of liquid assets the grandparents invest in stock market. Finally, we predict the percentage of liquid assets a child allocates to the stock market, with the percentage of liquid assets that the child's parents allocate to the stock market.

Next, we conduct a "back-of-the-envelope" estimation of the wealth outcomes driven by this learning from parents mechanism. We assume that all the participants in our sample start investing at the age of 18 and inherit all their parents' wealth. The grandparent generation participants in our sample all start with a wealth of 1000 dollars [13], and each year, each family invests the predicted percentage of assets in the stock market index. After three generations of accumulation and wealth transfer, the grandchildren generation could

[13]The stock market returns are Center for Research in Security Prices (CRSP) value-weighted index returns with distributions, adjusted with inflation.

end up with a wealth difference as high as about $20,000. The wealth outcome distribution is demonstrated in Figure 2.

[Insert Figure 2 near here]

As shown in Fig. 2, this multi-generation learning-from-parents mechanism drives a large difference in the wealth outcomes after three generations. By the end of 2018, the distribution is already scattered, with the highest wealth of $19,537.29 and the lowest wealth of $508.33 for the grandchildren. The gini coefficient in this small sample by the end of 2018 reaches 0.34, which is comparable to the 0.415 gini coefficient of U.S. by the end of 2016.[14] The discrepancies in wealth outcome in Fig. 2 is solely driven by the differences in grandparent generation's (instrumented) liquid assets allocated to the stock market and its effects on the parent and children generations, which indicates that the learning-from-parents mechanism can help explain the greater wealth inequality we experience in U.S. these days.

There are several limitations of this calculation. First of all, we assume that the children inherit 100% of the wealth from the parents, which certainly is questionable in real life. Second, the life spans of parents are taken as given. However, the wealth earned can be correlated with one's life span. Third, we assume that everyone starts at the same level of wealth. Nonetheless, the results show that the long-lasting effects from parents and grandparents on one's risk-taking in the stock market can lead to differences in wealth, and the differences are large enough to match a significant fraction of observed wealth inequality.

7 Robustness

7.1 Parents and children influence

The biggest concern of our results is whether the influence on children is from the common stock market environment rather than parents' experiences and children learning from parents. In the long run, those four different moments of stock returns will be similar to parents

[14] https://data.worldbank.org/indicator/SI.POV.GINI?locations=US

from different generations. Our results are simply the impact of four different numbers on children's risk-taking behavior.

To address this, we randomly assign parents to children. If the above argument is true, we should expect similar numbers from our previous results. In other words, if the result disappears, then our previous result indeed captures the influence between parents and their children.

As shown in Table 10, after randomly assigning parents to children, the positive impact of parents' experience-induced risk-taking measures have no impact at all. The coefficients for both measures using both the Linear Probability Model and the Probit model are basically zero and statistically insignificant. This result confirms our previous results that even small variations in parents' experiences matters to their children's risk-taking behavior.

[Insert Table 10 about here]

7.2 IV results: experience on federal marginal tax changes and local income growth

Adopting the same IV method with number of federal marginal income tax hikes and drops as instruments, we analyze the influence of parents' risk-taking on children's risk-taking behaviors. In the first stage, we regress parents' risk-taking on number of federal marginal income tax hikes and drops before children were born, then in the second stage we regress children's risk-taking in the stock market on estimated parents' behaviors. Results are reported in Appendix Table A.1 Panel A.

Similar to the results with stock market returns as the instruments, parents' risk-taking has positive and significant impact on their children's behaviors after excluding the effect of genetics and the effect of environment that does not correlate with those tax hikes and drops. Higher market participation and higher proportion of parents' risky investment in total liquid assets leads to higher children's market participation and a higher proportion of children's risky liquid asset respectively.

We then conduct the same analysis with a different set of instrumenst. In the first stage, we regress parents' risk-taking on average 9-year state income growth rate prior to the birth of the child. Then in the second stage, we regress children's risk-taking in the stock market on estimated parents' behaviors. Results stay the same and are recorded in Appendix Table A.1 Panel B.

7.3 Exclusion restriction

We run our tests with instrumental variables since we want to address the endogeneity issue. However, we need to make sure that those instrumental variables only affect children's risk-taking through affecting parents risk-taking in the stock market.

As a result, we regress children's risk-taking on parents' risk-taking and their experience before children were born. If the exclusion restriction applies here, then the experience should become insignificant when controlling for parents' risk-taking. As shown in Appendix Table A.2, we find that parents' experiences before their children were born becomes insignificant to children's risk-taking once we control for parents' risk-taking in the stock market.

7.4 Cross-section results

We run our tests over time and allow the effects of independent variables to be time-dependent. However, some of our variables do not change over time. For example, in our first stage estimation, we use parents' experiences before their children were born to predict parents' risk-taking. Thus we run our first-stage with a cross-sectional sample. As shown in Appendix Table A.3, we still find that parents' experience before their children were born to have an economically and statistically significant effect on the parents' risk-taking.

7.5 State fixed effects and family condition when children were born

To address concerns that state economic situations could have an effect on both the parents and the children's risk-taking, we re-run our main IV tests with state fixed effects and find consistent results in Appendix Table A.4.

Parental effect could be stronger or weaker due to the economic and household characteristics of the family when a child is born. We manage to identify some of the parents' characteristics when the children were born with a sub-sample of our data. Controlling for the parental characteristics when a child was born, our results are still consistent as shown in Appendix Table A.5.

7.6 Are parents who experienced a good stock market before child wealthier?

One endogeneity concern of our IVs is that parents who experienced better stock market before their children were born are also wealthier due to the higher stock market returns, and their children are more likely to invest in the stock market as a result.

We test the current wealth and income status of the parents who experienced a bad stock market versus the parents who experienced a good stock market before their children were born in Appendix Table A.6. We find that parents who experienced a good stock market before children don't have a wealth that's statistically different from those who experienced a bad stock market before in our sample years. Those parents who experienced a bad stock market a long time ago actually have higher income and are more likely to have a defined benefit/contribution plan, which is probably why they catch up in terms of wealth levels over the years. However, their children, as predicted by Table 3, are still less likely to participate in the stock market and invest less in the stock market.

7.7 Children who graduated from college during a recession

To further identify the importance of this parental effect, especially comparing to children's personal experiences, we study the sub-sample of children who graduated from college during a recession. Those children who graduated from college during a recession are more likely to have had a harder time finding well-compensated jobs and might thus be more risk-averse comparing to other children. However, we find that even within this sub-sample of children, the parental effect is still very strong. As shown in Appendix Table A.8, children who

graduated into a recession with parents who experienced a good market are still more likely to invest in the stock market comparing to children with parents who experienced a bad stock market.

7.8 The gender role of the parental effect

We provide evidence on the gender role of this parental effect. Using father's/mother's experience as instrumental variables of parents' risk-taking in the stock market, we test the parental effect on the daughters' and sons' risk-taking. As shown in Appendix Table A.9, we find that fathers have a slightly larger effect on their sons' portfolio choices comparing with their daughters', while mothers have a larger effect on their daughters' portfolio allocation to the equity market comparing with their sons'. This is consistent with the psychological literature that argues that mothers are more likely the role models of daughters while fathers are more likely the role models of their sons. And it is also more likely that parents spend more time with children of the same gender during the children's formative years.

Though we don't differentiate whether children inherit the information or the attitudes from the parents through the learning process, the results in Appendix Table A.9 is more consistent with children taking after parents' risk attitudes. Specifically, if the parental effect we identify is through children getting information from parents about the stock market by observing how parents invest, it is likely that the parental effect would be the same on sons and daughters as the parents make investment decisions together as a household. However, if children identify their parents as role models and take after their parents' risk attitudes, then it's likely that a parent's effect is larger with the children of the same gender. Never the less, the results are only suggestive here, and further research is needed before we can make a definite argument.

7.9 Separate the sample based-on wealth level of the children

We further address the wealth endogeneity concern by separating the sample based on the wealth level of the children. The concern is that if positive parental stock market experience (before children) leads to wealthy parents, and wealthy parents are likely to have wealthy children, then it is possible that our results are driven by the fact that risk-taking is increasing in wealth and the exclusion restriction is violated.

To further address this issue, we test whether parental effect are still valid across different wealth levels. As shown in Appendix Table A.10, our results are actually mainly driven by the medium wealth families, instead of by the extremely poor or wealthy families, which indicate that parental effect is a factor that is very important in interpreting how people decide to participate in the stock market, beyond the effect of wealth.

8 Conclusion

Our risk-taking is affected by our parents' tendency to participate in the stock market. And this effect is correlated with parents' experiences of the stock market before we are born. This evidence is undeniably related to the inter-generation homogeneity in terms of stock market participation. This mechanism also shows that current stock market conditions could affect how not only one, but also future generations perceive the stock market risk.

Showing that parents' risk-taking behaviors are indeed correlated with children's risk-taking is consistent with the view that our experience with parents matters. One of the main results of the paper is that parents' risk-taking behaviors predicted from their stock market experiences before children were born affects their children's risk-taking in the stock market. Our IV results suggest a causal interpretation for this finding.

We next show that this effect from parents to their children can be explained with a non-genetic, learning-from-parents mechanism. Specifically, the part of parents' risk-taking that is induced by their stock market experience before children are born affects children's behavior in the stock market. The effect is larger for first born children as they receive more

attention and childhood interactions from parents. These results are likely a reflection of the transmission of parents' experience to their children through their interaction with their children.

Next, this paper addresses the properties of the children learning from parents effect. Studies suggest non-genetic effect tends to fade away over time, like experiences in Malmendier and Nagel (2011), and the combination of learning-from-parents and environment in Barnea, Cronqvist, and Siegel (2010) as the social interaction between parents and children decreases. However, we find that this effect does not fade as we move to a different state from our parents or the longer we are away from our parents and start our own family. These findings are consistent with psychology studies that argue our experience in childhood is very important in shaping our cognitive perceptions and can affect our lifelong decisions, such as investment decisions.

Finally, we find that household characteristics that improve the motivation or endeavor of children learning from parents would enhance the pass-through effect. The effect is weaker for parents with defined benefit pension plans as they would likely care less about personal finance planning and children would learn less from them in these areas as a result. The effect is stronger for parents with bachelor degrees as the degree and suggest better nurturing outcomes.

Our study shows a clear, significant and persistent learning-from-parents effect from parents to children in terms of risk-taking behavior. It also shows how past stock market experience shapes us through a multi-generation structure since the effect of grandparents before their children are born has a statistically significant effect on their grandchildren. We show that the multi-generational effect is potentially large enough to significantly affect wealth inequality.

Figure 1: Parents' Stock Market Experience and Children's Stock Market Participation

We use PSID data from 1999-2015. The y-axis represents children's stock market participation, the x-axis represents the average stock market returns that parents experienced before children were born. The points in the graph represent the yearly averages of observations. (For example, in 2009, the parents experienced an average stock market return of 0.09 before the birth of those children in the sample, the sample average of children's stock market participation tendency is around 0.26.)

Figure 2: Back-of-the-Envelope Estimation of Wealth Inequality Caused by Multi-Generation Learning-from-Parents Effects

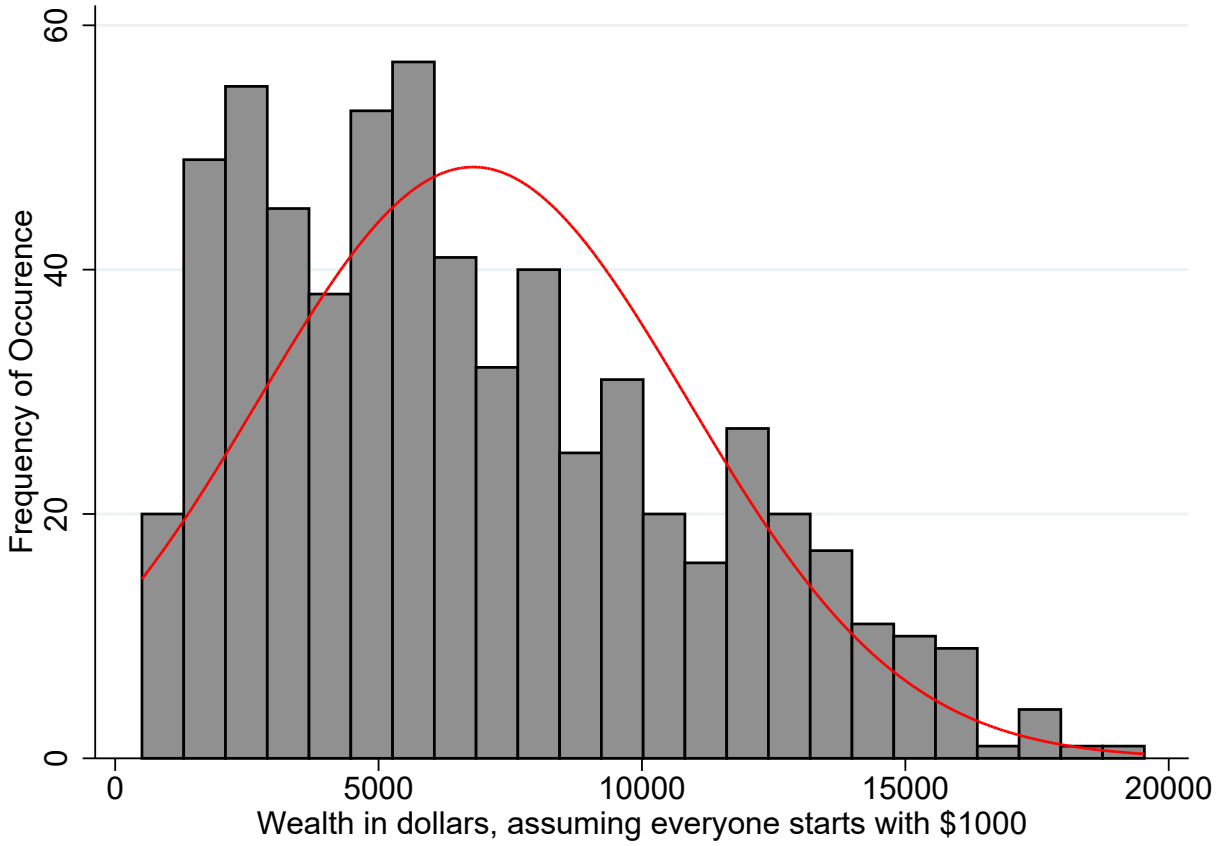

Table 1: Summary Statistics

Liquid asset and income are in dollar values. Panel A is a sub-sample of the demographic characteristics of the children in our sample. Panel B is a sub-sample of the demographic characteristics of the children who have participated in the stock market. Panel C is the demographic characteristics of all the parents. (We count each parent as one observation here.)

	10th pct	Median	90th pct	Mean	Std. dev.	#Obs.
Panel A: All Children						
Liquid asset	500	10,000	195,000	84,709	302,202	12,993
Income	22,772	68,000	164,000	89,328	117,564	12,993
Experience mean return	0.114	0.126	0.145	0.128	0.013	12,993
Experience volatility	0.160	0.175	0.185	0.174	0.010	12,993
Experience max return	0.368	0.382	0.450	0.388	0.035	12,993
Experience min return	-0.367	-0.278	-0.211	-0.301	0.070	12,993
Stock market participation	0	0	1	0.164	0.370	12,993
Fraction of liquid assets in stocks	0	0	0.915	0.287	0.375	12,993
Panel B: Market Participating Children						
Liquid asset	19,340	121,000	701,200	298,082	586,491	2,127
Income	46,699	111,000	256,700	153,079	230,559	2,127
Experience mean return	0.115	0.124	0.140	0.126	0.010	2,127
Experience volatility	0.164	0.175	0.183	0.174	0.008	2,127
Experience max return	0.368	0.382	0.502	0.400	0.044	2,127
Experience min return	-0.367	-0.278	-0.278	-0.305	0.057	2,127
Fraction of liquid assets in stocks	0.347	0.800	0.977	0.727	0.242	2,127
Panel C: All Parents						
Liquid asset	1,800	70,000	680,000	303,312	1,046,630	14,687
Income	24,858	68,250	173,000	94,208	117,399	14,687
Experience mean return	0.115	0.125	0.135	0.125	0.008	14,687
Experience volatility	0.170	0.178	0.200	0.180	0.010	14,687
Experience max return	0.450	0.502	0.574	0.500	0.050	14,687
Experience min return	-0.440	-0.367	-0.278	-0.343	0.055	14,687
Stock market participation	0	0	1	0.238	0.426	14,687
Fraction of liquid assets in stocks	0	0.405	0.968	0.430	0.410	14,687

Table 2: Estimations under a Malmendier and Nagel (2011) Setting

Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's measure 2 is the percentage of liquid assets one allocates to the stock market. Weight is the estimated weight using Malmendier and Nagel (2011) methods. Children Experience variables include the weighted average of returns children experienced, the standard deviation, maximum and minimum of returns during the children's lifetime. Parents' measures describe the children's parents' current stock market investment decisions. Controls include a dummy variable for high school, a dummy variable for college, number of children, IRA Liquidity Ratio, income, retirement dummy, Pension DB/DC, race dummies and marital status dummies. Significance is represented according to $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

	Children's Measure 1	Children's Measure 2	Children's Measure 1	Children's Measure 2	Children's Measure 1	Children's Measure 2	Children's Measure 1	Children's Measure 2
Children Experience (Weighted Avg of Returns)	7.437**	0.709***	6.028***	0.615***	6.669***		4.792***	0.499***
	(8.15)	(10.58)	(4.97)	(6.54)	(7.40)		(4.23)	(5.53)
Children Experience (SD of Returns)			10.15**	0.778**		0.630***	3.530	0.489
			(1.97)	(2.12)		(9.84)	(0.69)	(1.33)
Children Experience (Max Return)			2.560***	0.345***			6.083***	0.576***
			(3.16)	(5.15)			(7.84)	(8.55)
Children Experience (Min Return)			1.969***	0.133***			0.747	0.103**
			(2.67)	(2.56)			(1.03)	(1.96)
Parents' Measure 1					0.676***	0.059***	0.691***	0.062***
					(10.22)	(10.93)	(10.81)	(11.35)
Parents' Measure 2					0.368***	0.043***	0.471***	0.049***
					(4.41)	(7.41)	(5.80)	(8.31)***
Weight (Estimated)	1.75	1.69	1.82	1.65	1.84	1.79	1.88	1.77
Income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Liq Asset	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12,993	12,993	12,993	12,993	12,993	12,993	12,993	12,993
Adj R-sq	0.17	0.63	0.18	0.64	0.24	0.64	0.20	0.63

Table 3: Parents' Risk-taking's Effect on Children's Risk-taking

Children's/parents' measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's/parents' measure 2 is the percentage of liquid assets one allocates to the stock market. Children's experience measures are the moments of the stock market returns that children experienced since they are 18. High School is a dummy variable for high school a diploma. College is a dummy variable for a college degree. Number of children is the number of children per family. Liquid asset is the amount of liquid asset one has in year t. Income is one's income in year t. Retirement is a dummy variable for retirement. Pension DB/DC are pension plan contributions. Number of Siblings are the number of siblings one has. Model (1) is estimated with a Probit model and Model (2) is estimated with a Linear Probability Model. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

	Children's Measure 1	Children 's Measure 2
Parents' Measure 1	0.476***	
	(10.09)	
Parents' Measure 2		0.109***
		(10.18)
Children Experience (Avg Return Since 18)	-0.900	0.163
	(-1.03)	(0.52)
Children Experience (Return SD Since 18)	-5.468***	-0.043
	(-3.09)	(-0.20)
Children Experience (Max Return Since 18)	3.694***	0.129
	(3.58)	(0.59)
Children Experience (Min Return Since 18)	-1.876***	-0.071
	(-3.02)	(-0.81)
High School	0.626***	0.059**
	(3.46)	(2.56)
College	0.463***	0.100***
	(8.65)	(8.98)
Number of Children	0.042	0.004
	(1.01)	(0.57)
Number of Children (Squared)	-0.023*	-0.003*
	(-1.81)	(-1.70)
Liquid Assets	2.468***	0.617***
	(14.63)	(15.24)
Income	0.716**	0.002
	(2.04)	(0.05)
Retirement	-0.277	-0.046
	(-1.11)	(-0.87)
Pension (DB)	0.072*	0.030***
	(1.85)	(3.61)
Pension (DC)	0.126***	0.029***
	(2.68)	(3.62)
Age	-0.000	0.006***
	(-0.06)	(7.00)
Number of Siblings	0.000	0.002
	(0.00)	(0.41)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y
N	12887	12887

Table 4: Panel Regression: Children's Risk-taking and Parent and Children Experience (OLS)

Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's measure 2 is the percentage of liquid assets that one allocates to the stock market. Children/Parent Experience variables are the standard deviation, maximum, minimum and average stock market returns one experiences since the child was 18/of the parent before the child was born. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

	Children's Measure 1	Children's Measure 2	Children's Measure 1	Children's Measure 2	Children's Measure 1	Children's Measure 2
Parent Experience (Avg Return before Children's birth)			-2.982	0.148	0.361	0.189
			(-1.35)	(0.42)	(0.15)	(0.46)
Parent Experience (Return SD before Children's birth)			-16.333***	-1.438***	-9.339**	-1.502**
			(-4.50)	(-2.67)	(-2.30)	(-2.32)
Parent Experience (Max Return before Children's birth)			0.746	0.323*	0.408	0.301
			(0.60)	(1.84)	(0.37)	(1.62)
Parent Experience (Min Return before Children's birth)			-2.411***	-0.210*	-1.524**	-0.231**
			(-4.31)	(-1.97)	(-2.48)	(-2.05)
Children Experience (Avg Return Since 18)	-0.789	0.142			-1.863*	0.061
	(-0.87)	(0.45)			(-1.96)	(0.17)
Children Experience (Return SD Since 18)	-5.869***	-0.179			-9.663***	-0.240
	(-3.35)	(-0.81)			(-5.42)	(-1.01)
Children Experience (Max Return Since 18)	3.994***	0.228			2.290	0.155
	(3.82)	(1.03)			(1.56)	(0.54)
Children Experience (Min Return Since 18)	-1.957***	-0.109			-3.094***	-0.126
	(-3.08)	(-1.21)			(-4.23)	(-1.32)
High School	0.685***	0.075***	0.073	0.067***	0.251**	0.069***
	(3.83)	(3.32)	(0.72)	(3.00)	(2.23)	(3.02)
College	0.519***	0.113***	0.545***	0.113***	0.528***	0.112***
	(9.76)	(9.95)	(10.23)	(9.98)	(10.10)	(9.63)
Number of Children	0.047	0.006	0.004	0.004	0.004	0.002
	(1.13)	(0.79)	(0.09)	(0.49)	(0.09)	(0.26)
Number of Children (Squared)	-0.024*	-0.003*	-0.015	-0.002	-0.015	-0.002
	(-1.90)	(-1.77)	(-1.22)	(-1.54)	(-1.27)	(-1.35)
Liquid Assets	2.531***	0.640***	2.563***	0.643***	2.578***	0.644***
	(14.76)	(15.70)	(15.38)	(16.30)	(15.03)	(16.29)
Income	0.826**	0.019	0.887**	0.016	0.818**	0.015
	(2.24)	(0.39)	(2.41)	(0.32)	(2.24)	(0.31)
Retirement	-0.297	-0.048	-0.264	-0.041	-0.175	-0.035
	(-1.24)	(-0.90)	(-1.10)	(-0.75)	(-0.72)	(-0.64)
Pension (DB)	0.073*	0.030***	0.080*	0.030***	0.076*	0.029***
	(1.75)	(3.69)	(1.83)	(3.56)	(1.78)	(3.49)
Pension (DC)	0.133***	0.032***	0.132***	0.031***	0.125***	0.030***
	(2.84)	(3.88)	(2.77)	(3.85)	(2.66)	(3.78)
Number of Siblings	-0.003	0.005***	0.034***	0.006***	-0.000	0.006***
	(-0.51)	(6.28)	(5.48)	(5.87)	(-0.02)	(3.93)
	0.006	0.002	-0.008	0.001	-0.007	0.001
Ethnicity Dummies	(0.27)	(0.64)	(-0.33)	(0.18)	(-0.29)	(0.14)
Marital Status Dummies	Y	Y	Y	Y	Y	Y
Year Fixed Effect	Y	Y	Y	Y	Y	Y
Clustered at Birth Year Level	Y	Y	Y	Y	Y	Y
N	12887	12887	12993	12993	12887	12887

Table 5: Main Test: Parents' Risk-taking's Effect on Children's Risk-taking (IV)

Parents'/Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Parents'/Children's measure 2 is the percentage of liquid assets that one allocates to the stock market. Parent Experience variables are the standard deviation, maximum, minimum and average stock market returns the parents experienced before the child's birth. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

	Children's Measure 1	Children's Measure 2
Parents' Measure 1 (Instrumented)	1.440**	
	(2.52)	
Parents' Measure 2 (Instrumented)		0.269***
		(2.65)
Children Experience (Avg Return Since 18)	-1.099	0.194
	(-1.36)	(0.62)
Children Experience (Return SD Since 18)	-4.276**	0.158
	(-2.28)	(0.62)
Children Experience (Max Return Since 18)	2.876**	-0.019
	(2.51)	(-0.08)
Children Experience (Min Return Since 18)	-1.538**	-0.016
	(-2.26)	(-0.18)
High School	0.477**	0.035
	(2.10)	(1.22)
College	0.292*	0.082***
	(1.96)	(4.86)
Number of Children	0.027	0.002
	(0.68)	(0.23)
Number of Children (Squared)	-0.019	-0.002
	(-1.52)	(-1.56)
Liquid Assets	1.996***	0.583***
	(4.54)	(13.32)
Income	0.487	-0.023
	(1.34)	(-0.54)
Retirement	-0.207	-0.044
	(-0.82)	(-0.82)
Pension (DB)	0.058*	0.029***
	(1.68)	(3.40)
Pension (DC)	0.099*	0.026***
	(1.88)	(3.16)
Age	0.003	0.007***
	(0.61)	(7.40)
Number of Siblings	-0.009	0.000
	(-0.36)	(0.08)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y
N	12887	12887

Table 6: The First Kid Effect

Children's measures 1 and 2 are the children's stock market participation and allocation of liquid assets to the stock market. Parents' measure 1 and 2 (M1 and M2) from experience are the predicted measures from first stage. First kid is a dummy variable for being the first-born. Birth Space is the years between a later-on child was born and the first child was born. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

Panel A: First Child Effect			Panel B: Birth Spacing Effect		
	Children's Measure 1	Children's Measure 2		Children's Measure 1	Children's Measure 2
Parents' M1* First Kid	1.267*		Parents' M1* Birth Spacing	-0.107*	
	(1.69)			(-1.83)	
Parent M2* First Kid		0.179**	Parent M2* Birth Spacing		-0.010*
		(2.31)			(-1.76)
Parent Measures' 1	0.842		Parents' Measure 1	1.701***	
	(0.95)			(2.60)	
Parents' Measure 2		0.150	Parents' Measure 2		0.258***
		(1.63)			(3.06)
First Kid	-0.273	-0.076**	Birth Spacing	-0.031	-0.011
	(-1.39)	(-1.98)		(-0.49)	(-0.78)
High School	0.440**	-0.003	High School	0.414***	-0.018
	(1.96)	(-0.08)		(2.60)	(-0.48)
College	0.354***	0.087***	College	0.345***	0.085***
	(2.77)	(4.42)		(3.23)	(6.76)
Number of Children	0.050	0.002	Number of Children	0.052	0.000
	(0.91)	(0.22)		(1.01)	(0.05)
Number of Children (Squared)	-0.027*	-0.002	Number of Children (Squared)	-0.029*	-0.002
	(-1.67)	(-0.92)		(-1.79)	(-1.05)
Liquid Assets	2.322***	0.609***	Liquid Assets	2.305***	0.611***
	(9.53)	(14.50)		(9.62)	(13.01)
Income	0.393	-0.037	Income	0.411	-0.037
	(0.89)	(-0.92)		(0.87)	(-0.87)
Retirement	-0.259	-0.068	Retirement	-0.269	-0.068*
	(-0.52)	(-1.51)		(-0.81)	(-1.70)
Pension (DB)	0.074*	0.038***	Pension (DB)	0.079*	0.039***
	(1.70)	(4.36)		(1.96)	(3.87)
Pension (DC)	0.111**	0.027***	Pension (DC)	0.098*	0.026**
	(2.52)	(2.73)		(1.90)	(2.29)
Age	0.012***	0.006***	Age	0.011***	0.005***
	(4.32)	(9.62)		(4.90)	(10.48)
Number of Siblings	0.007	-0.001	Number of Siblings	0.015	0.001
	(0.18)	(-0.20)		(0.58)	(0.09)
Ethnicity Dummies	Y	Y	Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y	Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y	Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y	Clustered at Birth Year Level	Y	Y
N	10540	10540	N	10540	10540

Table 7: Do Parents' Effects on Children Fade?

Children's measures 1 and 2 are the children's stock market participation and allocation of liquid assets to the stock market. Parents' measure 1 and 2 (M1 and M2) are the predicted measures from first stage. Left Home is the number of years since the child left home and started their own family. Child Remains in State is a dummy variable that is equal to 1 if child remains in the same state as parents and 0 otherwise. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

Panel A: Do Parents' Effects on Children Fade after Children Leave?		
	Children's Measure 1	Children's Measure 2
Parent M1* Left Home	0.000	
	(-0.01)	
Parent M2* Left Home		0.006
		(0.31)
Parents' Measure 1	1.918***	
	(2.92)	
Parents' Measure 2		0.290***
		(3.80)
Left Home	-0.014	-0.004
	(-0.80)	(-0.45)
High School	0.452***	0.025
	(3.17)	(0.88)
College	0.290***	0.076***
	(3.54)	(4.16)
Number of Children	0.043	0.002
	(1.13)	(0.18)
Number of Children (Squared)	-0.022**	-0.002
	(-2.08)	(-1.48)
Liquid Assets	2.057***	0.570***
	(11.05)	(12.97)
Income	0.523**	-0.031
	(1.97)	(-0.67)
Retirement	-0.273	-0.043
	(-1.15)	(-0.79)
Pension (DB)	0.067**	0.030***
	(2.52)	(3.38)
Pension (DC)	0.107**	0.025***
	(2.23)	(2.94)
Age	0.019***	0.007***
	(4.35)	(9.64)
Number of Siblings	-0.014	0.000
	(-0.53)	(-0.03)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y
N	12993	12993

Panel B: Do Parents' Effects on Children Fade after Children Move to Another State?		
	Children's Measure 1	Children's Measure 2
Parent M1* Child Remains in State	1.131	
	(1.07)	
Parent M2* Child Remains in State		-0.251
		(-1.54)
Parents' Measure 1	0.186	
	(0.33)	
Parents' Measure 2		0.408***
		(3.59)
Child Remains in the Same State	-0.458	0.122
	(-1.50)	(1.48)
High School	0.489***	0.042
	(2.88)	(1.49)
College	0.395***	0.087***
	(5.55)	(5.39)
Number of Children	0.046	0.000
	(1.31)	(0.06)
Number of Children (Squared)	-0.024**	-0.002
	(-2.23)	(-1.23)
Liquid Assets	2.357***	0.582***
	(13.08)	(13.50)
Income	0.674**	-0.020
	(2.55)	(-0.48)
Retirement	-0.316	-0.055
	(-1.38)	(-1.02)
Pension (DB)	0.095***	0.031***
	(3.28)	(3.74)
Pension (DC)	0.127***	0.026***
	(2.88)	(3.31)
Age	0.014***	0.007***
	(4.94)	(10.65)
Number of Siblings	-0.012	0.002
	(-0.41)	(0.37)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y
N	12850	12880

Table 8: Does Parents' Characteristics Make the Effect Stronger/Weaker?

Children's measures 1 and 2 are the children's stock market participation and allocation of liquid assets to the stock market. Parents' measure 1 and 2 (M1 and M2) from experience are the predicted measures from first stage. Parent Benefit Pension is whether the parent has a defined benefit pension plan. Parent College is whether the parent has a college degree. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

Panel A: Parents' Benefit Pension			Panel B: Parents' College Education		
	Children's Measure 1	Children's Measure 2		Children's Measure 1	Children's Measure 2
Parent M1* Parent Benefit Pension	-0.525***		Parent M1* Parent College	1.196	
	(-2.90)			(1.37)	
Parent M2* Parent Benefit Pension		-0.048*	Parent M2* Parent College		0.141***
		(-1.75)			(2.91)
Parents' Measure 1	1.284***		Parents' Measure 1	-0.243	
	(3.19)			(-0.19)	
Parents' Measure 2		0.255***	Parents' Measure 2		0.054
		(2.72)			(0.50)
High School	0.510***	0.035	High School	0.597***	0.055**
	(3.51)	(1.30)		(3.41)	(2.08)
College	0.383***	0.085***	College	0.411***	0.083***
	(6.09)	(5.21)		(6.96)	(5.77)
Number of Children	0.041	0.002	Number of Children	0.063	0.007
	(1.14)	(0.32)		(1.52)	(0.95)
Number of Children (Squared)	-0.023**	-0.002	Number of Children (Squared)	-0.029**	-0.003**
	(-2.02)	(-1.64)		(-2.29)	(-1.98)
Liquid Assets	2.220***	0.587***	Liquid Assets	2.385***	0.601***
	(12.41)	(14.04)		(9.63)	(14.71)
Income	0.638**	-0.020	Income	0.697**	-0.008
	(2.26)	(-0.46)		(2.45)	(-0.17)
Retirement	-0.298	-0.044	Retirement	-0.366	-0.053
	(-1.27)	(-0.82)		(-1.50)	(-0.98)
Pension (DB)	0.072***	0.030***	Pension (DB)	0.074***	0.030***
	(2.83)	(3.44)		(2.68)	(3.62)
Pension (DC)	0.119**	0.026***	Pension (DC)	0.126**	0.029***
	(2.52)	(3.19)		(2.51)	(3.65)
Age	0.014***	0.006***	Age	0.016***	0.007***
	(4.97)	(10.44)		(5.47)	(10.82)
Number of Siblings	-0.007	0.000	Number of Siblings	-0.006	0.000
	(-0.30)	(0.08)		(-0.23)	(0.13)
Ethnicity Dummies	Y	Y	Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y	Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y	Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y	Clustered at Birth Year Level	Y	Y
N	12993	12993	N	12993	12993

Table 9: Grandparent Effects

Parents' measures 1 and 2 are the parents' stock market participation and allocation of liquid assets to the stock market estimated with grandparents experience before the parents were born. Grandparents Experience variables are the standard deviation, maximum, minimum and average stock market returns a grandparent experiences before the child (the parent generation) was born. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Panel A: Grandparents' Risk-taking's Effect on Children's Risk-taking

	Children's Measure 1	Children's Measure 2
Grandparents' Measure 1	0.919***	
	(3.27)	
Grandparents' Measure 2		0.300*
		(1.82)
High School	-0.093**	-0.155***
	(-2.51)	(-2.72)
College	0.006	0.028
	(0.31)	(1.54)
Number of Children	-0.016	-0.008
	(-0.99)	(-0.90)
Number of Children (Squared)	0.008*	-0.004
	(1.71)	(-0.93)
Liquid Assets	0.474***	0.746***
	(2.60)	(9.37)
Income	0.035	-0.020
	(0.12)	(-0.06)
Pension (DB)	0.077***	0.058***
	(3.20)	(2.80)
Pension (DC)	0.096***	0.060***
	(5.62)	(3.86)
Age	0.010***	0.015***
	(3.88)	(4.83)
Number of Siblings	0.001	0.016
	(0.07)	(1.33)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y
N	2073	2073

Table 9: Grandparent Effects

In Panel B1, grandparents' measure 1 and 2 are estimated measures instrumented with grandparents' experience before parents were born. Parents' measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise, Parents' measure 2 is the percentage of liquid assets allocated to the stock market. In Panel B2, Parents' measures 1 and 2 are the estimated parents' measures from Panel B1. Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's measure 2 is the percentage that one allocates to the stock market. Control variables are the same as previous tables. Estimations with Measure 1 as the dependent variable are run under a Probit model and estimations with Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Panel B: Grandparents' Risk-taking - Parents' Risk-taking - Children's Risk-taking

Panel B1: Grandparents' Risk-taking's Effect on Parents' Risk-taking			Panel B2: Parents' Risk-taking's Effect on Children's Risk-taking		
	Parents' Measure 1	Parents' Measure 2		Children's Measure 1	Children's Measure 2
Grandparents' Measure 1	1.601***		Parents' Measure 1	0.419***	
	(3.36)			(3.74)	
Grandparents' Measure 2		0.803***	Parents' Measure 2		0.489***
		(3.16)			(2.82)
High School	-0.138*	0.048	High School	-0.007	-0.195**
	(-1.95)	(0.64)		(-0.29)	(-2.47)
College	0.087	-0.010	College	-0.018	0.023
	(1.54)	(-0.25)		(-0.74)	(1.23)
Number of Children	0.017	-0.010	Number of Children	-0.027**	-0.002
	(0.39)	(-0.93)		(-2.26)	(-0.16)
Number of Children (Squared)	-0.003	0.002	Number of Children (Squared)	0.010**	-0.006
	(-0.34)	(0.39)		(1.97)	(-1.04)
Liquid Assets	-0.390*	-0.030	Liquid Assets	0.731***	0.728***
	(-1.76)	(-0.25)		(5.04)	(9.82)
Income	-0.091	-0.063	Income	0.147	-0.023
	(-0.20)	(-0.36)		(0.65)	(-0.08)
Pension (DB)	0.022	-0.015	Pension (DB)	0.058**	0.068***
	(0.47)	(-0.33)		(2.39)	(3.09)
Pension (DC)	0.070*	0.018	Pension (DC)	0.059**	0.052***
	(1.94)	(0.63)		(2.57)	(2.98)
Age	0.023***	0.024***	Age	-0.002	0.005
	(4.11)	(4.49)		(-0.59)	(1.50)
Number of Siblings	0.028	0.038**	Number of Siblings	-0.009	-0.004
	(1.16)	(2.24)		(-0.76)	(-0.24)
Ethnicity Dummies	Y	Y	Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y	Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y	Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y	Clustered at Birth Year Level	Y	Y
N	2073	2073	N	2073	2073

Table 10: Random Reassignment of Parents

Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's measure 2 is the percentage of liquid assets that one allocates to the stock market. Parent measures are the estimated measures from first stage. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

	Children's Measure 1	Children's Measure 2
Parents' Measure 1	0.043	
	(0.19)	
Parents' Measure 2		0.007
		(0.16)
High School	0.635***	0.072***
	(3.86)	(3.32)
College	0.535***	0.114***
	(9.93)	(10.52)
Number of Children	0.058	0.007
	(1.39)	(1.01)
Number of Children (Squared)	-0.026*	-0.003*
	(-2.04)	(-1.92)
Liquid Assets	2.469***	0.638***
	(14.76)	(15.89)
Income	0.876**	0.020
	(2.36)	(0.42)
Retirement	-0.375	-0.053
	(-1.60)	(-1.01)
Pension (DB)	0.078*	0.031***
	(1.86)	(3.82)
Pension (DC)	0.139**	0.032***
	(2.93)	(3.99)
Age	0.013***	0.006***
	(4.18)	(10.02)
Number of Siblings	0.006	0.002
	(0.28)	(0.66)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y
N	12993	12993

Appendix A.

Table A1: Parents' Risk-taking's Effect on Children's Risk-taking (IV with Federal Tax Changes/Parents' State Income Growth)

Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's measure 2 is the percentage of assets that one allocates to the stock market. In Panel A, Parents' measure 1 and 2 estimated are the predicted measures from first stage that are attributable to parents' federal marginal capital gain tax experience before children were born. In Panel B, Parents' measure 1 and 2 estimated are the predicted measures from the first stage that are attributable to parents' 9-year average state income growth experience before the child was born. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Panel A: IV with Federal Tax Changes			Panel B: IV with Parents' State Income Growth		
	Children's Measure 1	Children's Measure 2		Children's Measure 1	Children's Measure 2
Parents' Measure 1 (Instrumented)	2.422***		Parents' Measure 1 (Instrumented)	0.494	
	(16.36)			(0.89)	
Parents' Measure 2 (Instrumented)		4.035	Parents' Measure 2 (Instrumented)		0.312***
		(0.76)			(3.22)
Children Experience (Avg Return Since 18)	-0.952	0.957	Children Experience (Avg Return Since 18)	-0.699	0.187
	(-1.64)	(0.74)		(-0.80)	(0.60)
Children Experience (Return SD Since 18)	-0.582	4.913	Children Experience (Return SD Since 18)	-5.572***	0.208
	(-0.39)	(0.74)		(-3.14)	(0.87)
Children Experience (Max Return Since 18)	0.448	-3.493	Children Experience (Max Return Since 18)	3.629***	-0.045
	(0.42)	(-0.72)		(3.52)	(-0.19)
Children Experience (Min Return Since 18)	-0.196	1.273	Children Experience (Min Return Since 18)	-1.950***	0.010
	(-0.34)	(0.68)		(-3.07)	(0.11)
High School	0.059	-0.520	High School	0.582***	0.026
	(0.33)	(-0.66)		(3.28)	(0.87)
College	-0.098	-0.350	College	0.460***	0.077***
	(-0.72)	(-0.56)		(5.12)	(4.84)
Number of Children	-0.007	-0.056	Number of Children	0.057	0.001
	(-0.30)	(-0.63)		(1.17)	(0.13)
Number of Children (Squared)	-0.005	0.002	Number of Children (Squared)	-0.032**	-0.003
	(-0.70)	(0.22)		(-2.16)	(-1.61)
Liquid Assets	0.512	-0.207	Liquid Assets	2.473***	0.597***
	(0.87)	(-0.19)		(9.34)	(11.95)
Income	-0.059	-0.611	Income	0.877**	-0.029
	(-0.21)	(-0.74)		(2.32)	(-0.65)
Retirement	-0.024	0.009	Retirement	-0.691	-0.042
	(-0.13)	(0.04)		(-1.57)	(-0.69)
Pension (DB)	0.013	0.011	Pension (DB)	0.069*	0.030***
	(0.41)	(0.20)		(1.73)	(3.20)
Pension (DC)	0.015	-0.060	Pension (DC)	0.123***	0.026***
	(0.46)	(-0.50)		(2.65)	(3.02)
Age	0.007**	0.024	Age	-0.002	0.007***
	(2.19)	(1.00)		(-0.38)	(7.55)
Number of Siblings	-0.022	-0.025	Number of Siblings	0.003	0.002
	(-1.33)	(-0.55)		(0.11)	(0.46)
Ethnicity Dummies	Y	Y	Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y	Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y	Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y	Clustered at Birth Year Level	Y	Y
N	12836	12836	N	12397	12397

Table A2: Exclusion Restriction

Parents'/Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Parents'/Children's measure 2 is the percentage of liquid assets that one allocates to the stock market. Parent Experience variables are the standard deviation, maximum, minimum and average stock market returns the parents experienced before the child was born. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

	Children's Measure 1	Children's Measure 2
Parents' Measure 1	0.474***	
	(10.38)	
Parents' Measure 2		0.106***
		(9.93)
Parent Experience (Return SD before Children's birth)	3.391	-0.708
	(0.74)	(-0.76)
Parent Experience (Max Return before Children's birth)	0.952	0.152
	(0.94)	(0.89)
Parent Experience (Min Return before Children's birth)	0.449	-0.134
	(0.66)	(-0.93)
Parent Experience (Avg Return before Children's birth)	2.622	0.347
	(1.04)	(0.82)
High School	0.577***	0.056**
	(3.47)	(2.52)
College	0.473***	0.101***
	(8.88)	(9.10)
Number of Children	0.050	0.004
	(1.18)	(0.52)
Number of Children (Squared)	-0.025**	-0.002*
	(-1.98)	(-1.68)
Liquid Assets	2.416***	0.618***
	(14.88)	(15.55)
Income	0.757**	0.001
	(2.13)	(0.02)
Retirement	-0.329	-0.042
	(-1.34)	(-0.76)
Pension (DB)	0.075*	0.029***
	(1.95)	(3.54)
Pension (DC)	0.128***	0.029***
	(2.69)	(3.62)
Age	0.000	0.006***
	(0.02)	(3.69)
Number of Siblings	-0.003	0.000
	(-0.10)	(0.07)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y
N	12993	12993

Table A3: Parents' Risk-taking's Effect on Children's Risk-taking (cross-sectional)

Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's measure 2 is the percentage of liquid assets one allocates to the stock market. Parents' measures are estimated from the first stage. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

	Children's Measure 1	Children's Measure 2
Parents' Measure 1	2.062***	
	(3.14)	
Parents' Measure 2		0.315***
		(4.18)
High School	0.342*	0.016
	(1.67)	(0.72)
College	0.247	0.052***
	(1.62)	(3.44)
Number of Children	-0.081	0.002
	(-1.37)	(0.20)
Number of Children (Squared)	0.006	-0.003
	(0.41)	(-1.55)
Liquid Assets	2.308***	0.729***
	(3.18)	(11.29)
Income	-0.563	-0.089
	(-1.45)	(-1.04)
Retirement	-0.563	-0.244***
	(-1.16)	(-2.61)
Pension (DB)	0.026	0.039**
	(0.32)	(2.26)
Pension (DC)	0.158	0.048**
	(1.40)	(2.46)
Age	0.019***	0.007***
	(4.56)	(10.68)
Number of Siblings	0.014	0.005
	(0.59)	(1.18)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
Clustered at Birth Year Level	Y	Y
N	3258	3258

Table A4: Main Tests with State Fixed Effects

Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's measure 2 is the percentage of assets that one allocates to the stock market. Parents' measures are estimated from the first stage. Control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

	Children's Measure 1	Children's Measure 2
Parents' Measure 1	2.371***	
	(25.68)	
Parents' Measure 2		0.410***
		(4.58)
High School	0.123	0.013
	(1.28)	(0.71)
College	-0.021	0.056***
	(-0.29)	(4.08)
Number of Children	-0.002	0.001
	(-0.05)	(0.08)
Number of Children (Squared)	-0.007	-0.003
	(-0.97)	(-1.24)
Liquid Assets	0.768***	0.552***
	(3.11)	(13.41)
Income	0.029	-0.059
	(0.12)	(-1.10)
Retirement	-0.113	-0.045
	(-0.72)	(-0.83)
Pension (DB)	0.028	0.045***
	(0.67)	(4.78)
Pension (DC)	0.022	0.015
	(0.60)	(1.56)
Age	0.010***	0.006***
	(4.70)	(10.39)
Number of Siblings	-0.012	0.002
	(-0.62)	(0.30)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
State Fixed Effect	Y	Y
Clustered at State Level	Y	Y
N	12873	12903

Table A5: Parents' Risk-taking's Effect on Children's Risk-taking (IV, Controlling for Characteristics of the Family After Child Birth)

Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's measure 2 is the percentage of liquid assets that one allocates to the stock market. Parents' measure 1 and 2 are the predicted measures from the first stage. BY state income/growth are the state income/income growth rate at the year of the child's birth. BY P Num Child and BY P Income are the number of children and the income of the household when the child was born. Other control variables are the same as previous tables. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

	Children's Measure 1	Children's Measure 2
Parents' Measure 1	1.902***	
	(4.22)	
Parents' Measure 2		0.095
		(1.15)
High School	0.324	0.024
	(1.31)	(0.93)
College	0.205	0.086***
	(1.36)	(5.22)
Number of Children	0.028	-0.007
	(0.65)	(-1.00)
Number of Children (Squared)	-0.024*	-0.001
	(-1.72)	(-0.94)
Liquid Assets	1.746***	0.687***
	(3.73)	(10.20)
Income	0.979**	0.269**
	(2.22)	(2.28)
Pension (DB)	0.073*	0.044***
	(1.80)	(4.48)
Pension (DC)	0.164***	0.031***
	(3.54)	(3.76)
Age	-0.010	0.009***
	(-0.99)	(3.36)
Number of Siblings	-0.018	0.007
	(-0.46)	(1.28)
BY State Income	0.000	0.000
	(-1.01)	(1.45)
BY State Growth	-0.004	0.002
	(-0.54)	(0.82)
BY P Num Child	-0.005	-0.005
	(-0.12)	(-0.76)
BY P Income	0.000	0.000
	(-1.51)	(1.28)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y
N	7612	7623

Table A6: Parental Wealth Effect

Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's measure 2 is the percentage of assets that one allocates to the stock market. The sample is separated based on whether the parents of a child experienced below average stock market returns before the child was born. Significance is represented according to $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

	Parents who experienced below average stock market returns	Parents who experienced above average stock market returns	Difference
Parent Liquid Asset	0.2883	0.3182	0.0298
	(1.30)	(0.87)	(1.54)
Parent Income	0.1147	0.0728	-0.0419***
	(0.13)	(0.09)	(-21.40)
Parent Defined Benefit Plan	0.1853	0.0637	-0.1216***
	(0.35)	(0.23)	(-23.56)
Parent Defined Contribution Plan	0.1733	0.0616	-0.1117***
	(0.33)	(0.22)	(-22.44)
Children's Measure 1	0.1104	0.2165	0.1061***
	(0.31)	(0.41)	(16.51)
Children's Measure 2	0.2089	0.3639	0.1550***
	(0.34)	(0.40)	(24.06)

Table A7: Local Treatment Effects

Parents' measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Parents' measure 2 is the percentage of assets that one allocates to the stock market. Children Control variables are the same as previous tables. Significance is represented according to $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

	High School OLS	High School IV	College OLS	College IV	Female OLS	Female IV
Parents' Measure 1	0.0384	0.0397	0.242	0.989	-0.0365	-0.0541
	(8.70)***	(0.72)	(14.77)***	(6.04)***	(-2.28)**	(-0.32)
Children Experience Controls	Y	Y	Y	Y	Y	Y
Year Fixed Effect	Y	Y	Y	Y	Y	Y
Clustered at Birth Year Level	Y	Y	Y	Y	Y	Y
N	12887	12887	12887	12887	12887	12887
Adj R Squared	0.010	0.010	0.064	-0.343	0.001	0.001

	Have Children OLS	Have Children IV	Wealth OLS	Wealth IV	Income OLS	Income IV
Parents' Measure 1	-0.0366	0.511	0.0577	-0.0623	0.0301	0.0496
	(-1.89)*	(1.50)	(5.43)***	(-0.72)	(4.72)***	(2.15)**
Children Experience Controls	Y	Y	Y	Y	Y	Y
Year Fixed Effect	Y	Y	Y	Y	Y	Y
Clustered at Birth Year Level	Y	Y	Y	Y	Y	Y
N	12887	12887	12887	12887	12887	12887
Adj R Squared	0.022	-0.196	0.078	-0.008	0.066	0.061

Table A8: Children who Graduated from College during a Recession

The sample include all the children who graduated from college during a recession. Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Children's measure 2 is the percentage of assets that one allocates to the stock market. Parents' measure 1 and 2 are the predicted measures from the first stage. Control variables are the same as previous tables. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

	Children's Measure 1	Children's Measure 2
Parents' Measure 1 (Instrumented)	1.864***	
	(4.04)	
Parents' Measure 2 (Instrumented)		0.366*
		(1.71)
Number of Children	0.086	0.074***
	(0.80)	(2.62)
Number of Children (Squared)	-0.016	-0.007
	(-1.02)	(-0.68)
Liquid Assets	1.215	0.643***
	(1.48)	(7.16)
Income	0.497	-0.133
	(0.54)	(-0.50)
Retirement	0.145	-0.231*
	(0.36)	(-1.84)
Pension (DB)	0.060	0.003
	(0.44)	(0.09)
Pension (DC)	0.008	0.090***
	(0.06)	(4.06)
Age	0.007	0.006***
	(1.28)	(3.32)
Number of Siblings	-0.004	0.024***
	(-0.08)	(2.81)
Ethnicity Dummies	Y	Y
Marital Status Dummies	Y	Y
Year Fixed Effect	Y	Y
Clustered at Birth Year Level	Y	Y
N	943	948

Table A9: The Gender Role of Parental Effect

Children's measure 2 is the percentage of liquid assets that one allocates to the stock market. Parents' measure 2 is the predicted measures from the first stage, instrumented either with fathers' stock market experience before the birth of the child, or mother's stock market experience before the birth of the child. Control variables are the same as previous tables. Significance is represented according to $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

	Children's Measure 2	Children's Measure 2	Children's Measure 2	Children's Measure 2
	Son	Daughter	Son	Daughter
Parents' Measure 2	0.275**	0.244**		
(Instrumented with Father's Early Exp)	(2.14)	(1.96)		
Parents' Measure 2			0.206*	0.278**
(Instrumented with Mother's Early Exp)			(1.84)	(2.53)
High School	0.015	0.071**	0.025	0.065**
	(0.44)	(1.97)	(0.83)	(2.08)
College	0.089***	0.078***	0.097***	0.073***
	(4.07)	(3.52)	(5.02)	(3.86)
Number of Children	0.014	-0.004	0.016	-0.005
	(1.24)	(-0.40)	(1.44)	(-0.42)
Number of Children (Squared)	-0.006	-0.001	-0.006*	-0.001
	(-1.60)	(-0.39)	(-1.69)	(-0.38)
Liquid Assets	0.588***	0.584***	0.601***	0.577***
	(10.11)	(9.50)	(10.80)	(9.50)
Income	0.022	-0.072	0.032	-0.078
	(0.40)	(-1.08)	(0.56)	(-1.13)
Retirement	-0.026	-0.071	-0.028	-0.071
	(-0.42)	(-1.00)	(-0.46)	(-0.97)
Pension (DB)	0.003	0.055***	0.003	0.055***
	(0.23)	(4.99)	(0.26)	(4.87)
Pension (DC)	0.009	0.043***	0.012	0.042***
	(0.62)	(4.47)	(0.79)	(4.46)
Age	0.007***	0.006***	0.007***	0.006***
	(8.05)	(8.91)	(7.98)	(8.73)
Number of Siblings	0.002	-0.001	0.001	-0.001
	(0.29)	(-0.13)	(0.25)	(-0.29)
Ethnicity Dummies	Y	Y	Y	Y
Marital Status Dummies	Y	Y	Y	Y
Year Fixed Effect	Y	Y	Y	Y
Clustered at Birth Year Level	Y	Y	Y	Y
N	6513	6480	6513	6480

Table A10: Parents' Risk-taking's Effect on Children's Risk-taking (Separated by Wealth Level)

Parents'/Children's measure 1 is a dummy variable that is equal to 1 if one participates in the stock market and 0 otherwise. Parents'/Children's measure 2 is the percentage of liquid assets that one allocates to the stock market. Parent Experience variables are the standard deviation, maximum, minimum and average stock market returns the parents experienced before the child's birth. Control variables are the same as previous tables. The sample is separated by the wealth level of the children's household. Estimations with Children's Measure 1 as the dependent variable are run under a Probit model and estimations with Children's Measure 2 as the dependent variable are run under a Linear Probability Model. Significance is represented according to $*p < 0.10$, $**p < 0.05$, and $***p < 0.01$.

	Children's Measure 1	Children's Measure 1	Children's Measure 1	Children's Measure 2	Children's Measure 2	Children's Measure 2
	Low Wealth	Medium Wealth	High Wealth	Low Wealth	Medium Wealth	High Wealth
Parents' Measure 1 (Instrumented)	2.919***	2.183***	-0.517			
	(18.94)	(7.43)	(-0.68)			
Parents' Measure 2 (Instrumented)				-0.122	0.332***	0.811***
				(-1.64)	(2.80)	(2.72)
Children Experience (Avg Return Since 18)	-1.850	1.346	-1.423	-0.025	0.545	0.422
	(-0.89)	(0.87)	(-1.22)	(-0.16)	(0.93)	(1.03)
Children Experience (Return SD Since 18)	-0.118	-0.120	-9.089***	0.076	-0.130	0.902
	(-0.04)	(-0.08)	(-4.26)	(0.39)	(-0.30)	(1.22)
Children Experience (Max Return Since 18)	15.888	4.670*	5.567***	0.117	0.234	-0.481
	(1.53)	(1.79)	(4.17)	(0.93)	(0.53)	(-1.12)
Children Experience (Min Return Since 18)	-0.038	-0.513	-3.137***	0.032	-0.235*	0.099
	(-0.06)	(-0.70)	(-4.20)	(0.32)	(-1.85)	(0.44)
High School	-0.110	0.061	0.592**	0.008	-0.069	-0.129
	(-1.49)	(0.24)	(2.28)	(0.49)	(-1.50)	(-1.50)
College	-0.128*	-0.126	0.491***	0.026*	0.003	0.004
	(-1.70)	(-1.40)	(6.89)	(1.91)	(0.16)	(0.11)
Number of Children	-0.018	0.073	0.077	-0.021***	0.001	-0.003
	(-0.31)	(1.19)	(1.35)	(-3.22)	(0.08)	(-0.15)
Number of Children (Squared)	0.002	-0.020	-0.034**	0.003*	-0.001	0.001
	(0.18)	(-1.42)	(-2.00)	(1.93)	(-0.32)	(0.22)
Liquid Assets	4.126*	4.544***	1.172***	0.871***	2.084***	0.002
	(1.74)	(2.70)	(7.44)	(5.08)	(4.06)	(0.04)
Income	-2.552***	-0.123	0.148	0.077	-0.431***	-0.095**
	(-2.64)	(-0.24)	(0.81)	(0.93)	(-4.05)	(-2.12)
Retirement	-1.085*	0.232	-0.424	-0.046	0.025	-0.072
	(-1.68)	(0.85)	(-1.44)	(-0.87)	(0.25)	(-1.17)
Pension (DB)	-0.038	-0.019	0.062	0.017	0.016	0.017
	(-0.55)	(-0.34)	(0.95)	(1.35)	(1.17)	(0.84)
Pension (DC)	-0.045	-0.006	0.098	0.006	-0.014	0.031**
	(-0.51)	(-0.09)	(1.55)	(0.71)	(-0.95)	(2.29)
Age	0.002	0.007	-0.001	0.003***	0.007***	0.016***
	(0.27)	(0.89)	(-0.17)	(2.64)	(4.49)	(6.96)
Number of Siblings	-0.037	-0.011	-0.002	-0.005	0.002	-0.012
	(-1.02)	(-0.49)	(-0.06)	(-1.18)	(0.32)	(-1.15)
Ethnicity Dummies	Y	Y	Y	Y	Y	Y
Marital Status Dummies	Y	Y	Y	Y	Y	Y
Year Fixed Effect	Y	Y	Y	Y	Y	Y
Clustered at Birth Year Level	Y	Y	Y	Y	Y	Y
N	4299	4168	4232	4433	4222	4232

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