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ABSTRACT

Early Health, Risk Aversion and Stock Market Participation*

To examine the relationship between early health status and financial decisions in adulthood, we link information on birth weight in 1966 from the Northern Finland Birth Cohort to data from the Finnish Central Securities Depository over the period of 1995-2010. We find that persons predisposed to poor health status in early childhood (indicated by low birth weight) avoid participating in the stock market in adulthood. The link between birth weight and stock market participation is partially explained by the fact that poor early health status leads to risk aversion. Early health status is not significantly related to the portfolio's value-growth tilt.

JEL Classification: I100, G110

Keywords: health status, birth weight, stock market participation

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1. Introduction

Several studies have investigated the effects of early life conditions on economic outcomes later in life, the well-known "fetal origins hypothesis" (see, for example, Almond and Currie, 2011). Early conditions in life are vital for the determination of outcomes in adulthood. For example, the health endowment developed by the age of 10 is a significant contributor to health differences observed at age 30 (Heckman et al., 2006). Birth weight is concise and one of the most tracked summary metrics of early health status that has been exploited in the medical and epidemiological literature (Barker, 1990; Corman et al., 2017). Along with health and health-related outcomes, the literature has related birth weight to key economic outcomes such as educational attainment and earnings in adulthood (Behrman and Rosenzweig, 2004; Black et al., 2007).

Classical asset pricing theory indicates that in frictionless financial markets households should allocate a positive fraction of financial wealth to risky stock because expected returns on equity are substantially higher than the risk-free rate, regardless of the risk attitude or the wealth levels of the investors. Therefore, one should expect a 100% stock market participation by households. However, empirically, we observe that a very high percentage of households do not own any stock (Arrow, 1965). The literature has proposed various economic explanations for this puzzle, including transactions costs (as proxied by education level), and background risks (risks that cannot be hedged, such as those associated with housing, entrepreneurship, or human capital). More recent evidence shows that financial decisions are affected by a wide range of cognitive and non-cognitive factors, such as IQ and personality traits (Grinblatt et al., 2011; Conlin et al., 2015). An obvious but relatively unexplored candidate for explaining financial decisions in adulthood is early health endowment.

This paper links early health status to financial decisions in adulthood. We contribute to the literature on the determinants of risk aversion and household differences in stock market participation. To accomplish this, we use longitudinal data containing information on measured birth weight combined with a comprehensive official register that keeps information on the holdings of Finnish investors in securities that are registered in Finland. Notably, our data also contain information on risk aversion in adulthood.

There are good reasons to expect that financial decisions in adulthood are partially affected by health endowment in childhood (Edwards, 2008). Poor health may, for instance, induce changes in time preferences (i.e., tradeoffs between present and future consumption). Consequently, individuals with poor health most likely discount the future more heavily. Chronic health problems may shorten planning horizon and lead to the avoidance of risky financial choices. A central mechanism for this is that poor health potentially contributes to risk aversion (Decker and Schmitz, 2016), which is a fundamental determinant of investment in risky assets (Merton, 1969). As a result, stock market participation may be substantially lower for those who have had poor health from childhood.

The sparse empirical literature on health status and financial decisions has used mainly subjective measures of health status that were measured concurrently with financial decisions (Rosen and Wu, 2004; Edwards, 2008). Atella et al. (2012) and Bressen et al. (2014) find self-reported perceived health status to be related to stock market participation, while more objective measures of health status are not related to stock market participation. However, subjective measures of health most likely suffer from systematic measurement error making it difficult to interpret the estimation results. For example, a well-known justification bias indicates that individuals may report a worse subjective level of health to justify their current economic status (McGarry, 2004). This problem is particularly severe in research settings in which asset allocation is also self-reported.

A recent paper by Cronqvist et at. (2016) analyzes the effect of two prenatal conditions – prenatal testosterone exposure and birth weight – on portfolio choice. They document that newborns with higher birth weight are more likely to participate in the stock market later in life. Lower birth weight is, instead, associated with portfolios with higher volatility and skewness, consistent with compensatory behavior. A unique feature of our empirical approach is that we use information on risk aversion and explicitly link poor early health status to the measures of risk aversion in adulthood.

The paper proceeds as follows. Section 2 describes our empirical approach and data. Section 3 reports the baseline estimation results and robustness checks. Section 4 concludes and discusses future work.

2. Data

2.1. Study design and sample

We merge observations from the Northern Finland Birth Cohort 1966 (NFBC66) with stockholding data from the Finnish Central Securities Depository (FCSD). An impartial third party (Euroclear Finland) matched the data using personal social security numbers, preserving the subjects' data privacy.

The NFBC66 attempted to log all births with expected due dates in 1966 for the northern Finland provinces of Oulu and Lapland (Rantakallio, 1988). A total of 12,058 live births were recorded, constituting over 95% of all births in the two provinces over the year. The NFBC66 research group has conducted several follow-up studies over the years, using both clinical examinations and questionnaires (see http://www.oulu.fi/nfbc/node/44315 for details on the NFBC66 origin and data collections). The observations on measured birth weight, gender, and mother's education originate from the 1966 data collection. Importantly for our research setting, prenatal care has been uniform in Finland since the 1950s as a consequence of the construction of the national hospital network (Malin and Hemminki, 1992).

University education (defined as bachelor's degree or higher from a research university or university of applied sciences) was self-reported on the 31-year-old follow-up questionnaire in 1997. Moreover, we have access to risk aversion measures from the 46-year-old follow up study completed in 2012. The individuals gave permission to use the data while taking part in the 46-year-old follow-up study. Of the 10,321 cohort members alive with known addresses in Finland, 8,639 granted permission to use the data.

The FCSD data contain the official holdings of registered securities in Finland. Stock market participation is based on information on equity security trades on the Helsinki Stock Exchange (NASDAQ OMX Helsinki). A total of 552 individuals who appear in the stockholdings data are defined as nonparticipants because they held only non-exchange-traded securities. A common example in our sample is holdings of Oulun Puhelin Oy, which was the mutually owned local telecommunications provider in the Oulu region. We do not place a lower limit on portfolio value or holding period in order to be labeled as a stock market participant (see Grinblatt and Keloharju (2000) and Conlin et al. (2015) for more detailed information on the FCSD data). The main sample we use is similar to that used in Conlin et al. (2015), but our estimation sample is larger because of the differing availability of the explanatory variables.

The main sample consists of 8,639 individuals for whom we have observations of birth weight and stock market participation status and permission to use the data. The sample size is of sufficient statistical power to identify the relevant relationships. We use the data over the period of 1995-2010, when the persons included in NFBC66 were 29-44 years old. The sample is not necessarily representative of the population of Finland, to the extent that education differences of the parents or cohort members affect stock market participation or that the culture of investing in northern Finland differs from that of the rest of Finland. Two points regarding the representativeness of the data are relevant. First, the average birth weight in our sample is in line with that of Vuori and Gissler (2012), who found an average birth weight of 3,555 grams for boys and 3,433 grams for girls for the entire country in the year 2011. In our data, the average weight for boys is 3,554 grams, and the average weight for girls is 3,430 grams. Second, the comprehensive register-based information on stockholding and the measures of risk aversion are offsetting advantages.

2.2. Measures

Using the FCSD data, we describe financial decisions with two outcomes. The primary outcome variable is stock market participation. We define a stock market participant as an individual who held a position in at least one equity security traded on the Helsinki Stock Exchange (NASDAQ OMX Helsinki) during the years 1995-2010. We focus on the long-term measure of stock market participation because it is more stable than short-term measures. Long-term measures also describe much better lifetime portfolio choices that are relevant for policy debates.

Early health status is potentially also related to portfolio composition because poor health may induce risk aversion leading to a preference for less-risky stocks. To measure the composition of investor portfolios in terms of risk profile we use only those stock holdings that were publicly traded on the exchange in Helsinki (NASDAQ OMX). For each individual, we obtain information on the stocks held, the number of shares owned of each stock, and the value of each position at month-end over the period 2009-2010. The market-to-book values come from Thomson Reuters Datastream. We calculate the value-weighted market-to-book value of the portfolio at the end of each month for those month-end dates on which the individual held stocks (i.e., if the individual sold all stock holdings prior to month-end, we do not use a value of zero for the value-weighted market-to-book value of the portfolio). We then take the average of these month-end values over the 2009-2010 period as our observation of the portfolio's market-to-book ratio. This is the same measure of portfolio value-growth tilt used in Conlin and Miettunen (2017). The sample size for the portfolio composition analysis is naturally much smaller than that for the stock market participation analysis because these models are estimated conditional on stock market participation.

We focus on two variables describing early health status based on the measurements at birth. First, the primary measure is the log of birth weight, following Black et al. (2007, p. 416).

Second, we use an indicator for those who had low birth weight using the standard definition for low birth weight (<2,500 grams) (WHO, 2010).

The estimate of risk aversion is the first principal component of responses to four survey questions on risk aversion in 2012.[1] The four survey questions on risk aversion include two questions asking about the willingness to pay for an uncertain monetary outcome (as in Guiso and Paiella, 2008), a question nearly identical to that used in Barsky et al. (1997), and a question asking about general willingness to take risks (Dohmen et al., 2011). We acknowledge that the measure of risk aversion is observed after the sample period of our stock holdings data. If the individual's true level of risk aversion changed between the initial stock purchase and 2012, we will observe attenuation of the coefficient of risk aversion in the regressions (Bertrand and Mullainathan, 2001).

2.3. Statistical methods

We use ordinary least squares (OLS) models, implying that we estimate linear probability models. Although stock market participation is dichotomous, we estimate linear probability models because they are less sensitive to distributional assumptions (Wooldridge, 2001).[2]

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[1] Please see Conlin et al. (2017) for more details.

[2] We have checked the estimation results using probit and logit models. All our conclusions remain intact. For our main results in Table 2, there are only three cases of predicted probabilities being outside of the [0,1] interval. The most extreme predicted probability of participation is just -0.019. Bertrand et al. (2004) suggest clustering standard errors at the level of variation in the policy variable of interest, e.g. clustering standard errors by states if regulation varies at the state level. We do not examine the effects of a policy variable that would lead to correlated residuals. Thus, we report heteroskedasticity-robust standard errors in all tables.

In the baseline specification we control only for gender – a clearly predetermined variable. Note that there is no need to control for age because all participants in the NFBC66 were born in 1966. All cohort-specific effects are eliminated by definition. To account for family effects, we control for mother's education level. In additional specifications, we adjust for background characteristics (i.e., person's own education, income and wealth) that are arguably "bad" controls in the sense that these covariates are partially determined by early health endowment, according to the earlier literature (Black et al., 2007). In a robustness check, we also account for a much larger set of background characteristics. Using the NFBC66, a person's education level is measured with an indicator for achieving a university degree by 1997. The variable is a marker of socioeconomic status and income level. We evaluate its relevance because concurrent educational attainment has been used extensively in the earlier empirical literature, which has examined the determinants of stock market participation (Grinblatt et al., 2011). The income measure in 2012 originates from the comprehensive register maintained by the Finnish tax authorities. Net wealth is the self-reported value from the NFBC1966 follow-up survey conducted in 2012.

The point estimates for birth weight effects are likely conservative for two reasons. First, the FCSD data do not include mutual fund share ownership information. Risk averse persons may be more prone to hold well-diversified mutual funds than individual stocks leading to the underestimation of stock market participation. However, this is not a major limitation in our setting, because mutual fund ownership in Finland was still relatively uncommon during the early part of the observation window. Second, if children with low birth weight have substantially higher mortality (Tommiska et al., 2001), the estimates constitute the lower bound for the true effect of low birth weight on stock market participation.

3. Results

3.1. Descriptive evidence

Table 1 reports descriptive statistics of the variables. The average measured birth weight is 3,490 grams, and 16% of all persons participated in the stock market over the period of 1995-2010.

Table 1 here

Birth weight is normally distributed (Online Supplementary Appendix Figure A1).[3] Table A1 reports the pairwise correlation coefficients for the variables. Notably, birth weight is not strongly correlated with mother's education level most likely due to universal and affordable access to health care and a safety net provided by the comprehensive social security system. Although mean birth weight by mother's education increases monotonically, the relationship is not strong and only statistically significant difference in birth weight is for mothers who have basic education only vs. graduated (Table A2). The individual's own education level is significantly positively correlated with stock market participation (Table A1), which is consistent with the stylized empirical facts of the literature (Grinblatt et al., 2011).

[3] Figure A2 shows the distribution of the share of wealth that is invested in stocks. There is a concentration at zero.

3.2. Baseline estimates

Table 2 reports the estimation results using stock market participation as the outcome variable. We use birth weight as both a continuous variable (Panel A) and an indicator for low birth weight (Panel B).

Table 2 here

The estimates using birth weight as a continuous variable show that birth weight is statistically significantly associated with higher stock market participation. The point estimate reveals that a one percent increase in birth weight is associated with a 0.12-point higher stock market participation probability (Table 2, Panel A, Column 1). The specification that uses an indicator for low birth weight shows that low birth weight is negatively related to stock market participation. The quantitative magnitude of the estimate is non-negligible. The point estimate reveals that those with low birth weight (<2,500 grams) have a 0.5-point lower stock market participation (Table 2, Panel B, Column 1).

Columns 2-4 of Table 2 add controls to the specification. The relationship between early health status and stock market participation is robust to the addition of covariates. We control for gender (Column 2) and mother's education in 1966 (Column 3). The parameter estimates remain relatively stable. Importantly, controlling for mother's education does not change the estimate for birth weight substantially, suggesting that otherwise omitted family effects are not driving the relationship. This observation is consistent with the fact that birth weight is only weakly correlated with mother's education (Tables A1-A2). However, the R^2 goes up more than 2.5 times after controlling for mother's education, indicating that variation in the mother's educational level drives a nontrivial part of the variation in stock market participation.

The addition of a person's own education level in adulthood to the set of controls in Column 4 tests for the possibility that the effect of birth weight on stock market participation is mediated via its impact on human capital. Although the inclusion of educational attainment increases the variance accounted for by the model the coefficient on birth weight remains essentially unchanged.

3.3. Additional specifications

We have estimated additional specifications that further characterize the link between birth weight and stock market participation. Nokia was the most popular single stock during the observation period. The Nokia effect is a potential contributor to the estimated links. Thus, we ran the OLS models after determining the participation status after removing all holdings of Nokia from the sample. There is no change in the results (not reported) because there are relatively few people who never held any stocks other than Nokia.

To examine the potential heterogeneity in the relationship, we estimated the models by gender. The link between birth weight and stock market participation seems to be limited to men (Table A3). However, this may be an issue of the sample – significantly fewer women participate in the stock market.

We estimate the relationship between birth weight and stock market participation controlling for an estimate of risk aversion (Table 3). This estimate of risk aversion is the first principal component of responses to four survey questions on risk aversion from the NFBC66 46-year-old follow-up study conducted in 2012 (Figure A3 and Table A4). Any attenuation present due to the use of a measure from 2012 is not noticeable, as the coefficient on risk aversion is statistically significant at the one percent level across all model specifications. More risk averse persons have a much lower probability of being stock market participants, which is consistent with the earlier literature (Hong et al., 2004). Importantly, birth weight is still significant in Column 2 of Table 3, but once the controls are added in addition to risk aversion, the effect of birth weight is no longer significant.

Table 3 here

To further explore the idea of risk aversion as one potential mechanism by which birth weight affects stock market participation, we regress the measure of risk aversion in adulthood on birth weight. The results are presented in Table 4. We see the coefficient on birth weight being negative and statistically significant in Models 1 and 2, but the statistical significance fades to the 10% level in Models 3 and 4. In Panel B of Table 4, the low birth weight indicator variable is not statistically significant in any of the models.

Table 4 here

We interpret Tables 3 and 4 together to show that at least part of the effect of birth weight on stock market participation occurs through the association of lower birth weight with higher risk aversion. However, there are clearly other mechanisms involved, as low birth weight (<2500 g) is not significantly associated with higher levels of risk aversion.

Because lower birth weight is associated with a lower likelihood of stock market participation (Tables 2), although this effect is not entirely channeled through risk aversion (Tables 3), we also seek to identify any effect of birth weight on the portfolio's composition. In Table 5, we regress the average value-weighted market-to-book ratio of the individual's portfolio on birth weight, risk aversion, and the controls. We find no evidence that birth weight is related to the portfolio's tilt towards value or growth stocks. Risk aversion has a negative and statistically significant coefficient, indicating that higher risk aversion is associated with a tilt towards value stocks. Higher own-education is also associated with a tilt towards growth stocks.

Table 5 here

We have estimated models that use birth weight as categories (deciles) to identify whether the relationship is non-linear. These results support the idea that the effect of birth weight is concentrated at the highest birth weight deciles (Table A5 and Figure A4).

We also estimate models that include additional controls. First, we estimate models that control for measured adult height using NFBC66 from 1997, because the main finding is prevalent only for men, i.e., the group where dominance is relatively more important. Shorter men may be more insecure and less willing to take risks due to differences in physical strength and dominance. We find that controlling for adult height does not eliminate the effect of birth weigh on stock market participation (Table 6). Interestingly, there is a statistically significant positive relationship between adult height and stock market participation that has not been reported in the earlier empirical literature. Taller persons are more likely to participate in the stock market. Second, we estimate models that control for income and wealth in 2012 to detect whether the link is mediated by these variables. Income/wealth are clearly not predetermined variables. Thus, we do not include them in the baseline models. The results show that there is a significant positive effect of income/wealth on stock market participation, but the link between birth weight and stock market participation remains intact (Tables 7-8). In sum, we observe that our main result is robust to several specifications of the model.

Table 6-8 here

Merton (1969) considers a model in which an investor allocates wealth between stocks and a risk-free asset in order to maximize expected utility and argues that risk aversion is a fundamental determinant of investment in risky assets. However, Merton's (1969) result is not strictly speaking related to non-participation. Merton's result is that the *share* of wealth held in a risky asset, w, is a function of risk aversion, γ. The solution to the portfolio problem in the CRRA (Constant Relative Risk Aversion) case is:

$$w = \frac{\mu - r}{\hat{\sigma}^2 - \gamma}$$

where following the standard notation: $(\mu, \hat{\sigma}^2)$ is the expected return and volatility of the risky asset, and r is the risk-free rate. So far we have estimated regression specifications looking at the discontinuous choice of holding any stocks relative to holding no stocks. That is, we have compared individuals with w =0 to individuals with $w > 0$. For this reason, we also explain the share of risky assets (i.e. stocks) to total wealth. These results show that there is some evidence that birth weight is positively linked to the share of wealth invested in stocks (Tables A6-A7). However, the estimates are not precise most likely, because wealth is self-reported.

The central limitation of the baseline estimation results is the potential unobserved heterogeneity affecting both birth weight and stock market participation. The birth weight variable may therefore capture other economic and financial conditions of parents uncontrolled for in the regression. To address this, we improve our empirical analysis by including a much larger set of covariates using all relevant information in the data to proxy otherwise unobservable factors (Table A8). These results show that our main findings are robust subject to using a substantially larger set covariates (the coefficient of birth weight is statistically significant at the 6% level in Column 1). Therefore, we conclude that our findings are not likely driven by unobserved heterogeneity affecting both birth weight and stock market participation.

4. Conclusions

Poor health may hinder one's ability to rationally save or take appropriate risks. Using a longitudinal research design, we show that poor health status (measured using birth weight) is strongly linked to lower stock market participation later in life. We also find that the inclusion of measures for risk aversion absorbs a great deal of the effects associated to birth weight. Our results are closely related to the literature that has examined the long-term economic outcomes of low birth weight (Behrman and Rosenzweig, 2004; Black et al. 2007). From a broader perspective, the findings are closely connected to the burgeoning literature that analyzes links between childhood factors (birth weight, height, obesity) and later life outcomes. Prenatal interventions that focus on the mother's nutritional and health standards may have positive effects in utero that improve health outcomes later in adulthood (Barker, 1997). Our results show that the effects of early health status are important determinants of financial decisions in adulthood as well, even in a Nordic welfare state such as Finland. Thus, improving the level of neonatal care, a known correlate of birth weight, may support financial welfare since it is generally rational for everyone to invest at least a small amount in assets with a risk premium. Our results contrast with those of Atella et al. (2012), who find no relation between perceived concurrent health status and stock market participation in countries with a national health care system.

The fact that poor health leads to less-risky financial decisions later in life has important policy implications. All else equal, individuals who do not participate in the stock market likely accumulate less wealth than individuals who own stocks. A lower expected return on the financial portfolio implies that individuals with poor health status may be trapped in weaker income growth and lower wealth in the long run, which is also due, in part, to their financial choices. This adds to the economic hardships they face in life.

The strengths of the study are its relatively large sample, longitudinal research design, and excellent data on measured birth weight and comprehensive register-based information on stock market participation. However, a possible concern is that fetal conditions are correlated with other variables, possibly unobservable to the econometrician. Therefore, the role of birth weight in later-life outcomes is difficult to assess because birth weight is not completely exogenously determined but is dependent on factors that are difficult to measure, such as genetic makeup, early nutrition conditions and unmeasured parental background (Kramer, 1998). As a result, birthweight and health at birth might be proxying for other family characteristics, at least to some degree. In particular, there is evidence of the effects of parenting (Black et al., 2017) on financial risk-taking. We addressed this potential concern by examining the effect of controlling for mother's education and found that controlling for mother's education does not change the results. Because we analyze the issue within the context of a Nordic welfare state birth weight is not strongly correlated with the mother's education level – a notion supported by our data. Of course, there may be other family characteristics that mother's education does not fully capture. However, our baseline results are robust subject to conditioning on a much larger set of background characteristics. We are unable to identify the decisive causal mechanisms at play, but our evidence shows that the link between birth weight and stock market participation is at least partially explained by the fact that poor early health status leads to higher risk aversion in adulthood. It would be valuable if future research identified the remaining mechanisms.

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Table 1. Descriptive Statistics.

Variable	Mean	Median	Std. Dev.	Min.	Max.
Birth weight (g)	3489.54	3500	527.6152	1020	6080
Birth weight <2500 g	0.036	0	0.187	0	1
Female	0.523	1	0.499	0	1
University education (1997)	0.132	0	0.339	0	1
Stock mkt participation (1995-2010)	0.155	0	0.361	0	1
Mother's education (1966)					
Basic	0.645	1	0.479	0	1
Vocational	0.184	0	0.387	0	1
Secondary	0.107	0	0.309	0	1
Graduate	0.049	0	0.216	0	1

Table 2. The Relationship between Birth Weight and Stock Market Participation.

Panel A				
	(1)	(2)	(3)	(4)
Ln (birth weight)	0.117***	0.084***	0.068***	0.062***
	(0.02)	(0.02)	(0.02)	(0.02)
Female		-0.101***	-0.101***	-0.105***
		(0.01)	(0.01)	(0.01)
M. voc. ed.			0.037***	0.024**
			(0.01)	(0.01)
M. sec. ed.			0.138***	0.111***
			(0.01)	(0.02)
M. graduate			0.264***	0.195***
			(0.02)	(0.02)
University				0.179***
				(0.01)
Intercept	-0.801	-0.474	-0.385	-0.344
	(0.19)	(0.19)	(0.18)	(0.18)
R^2	0.003	0.022	0.056	0.082
N	8639	8639	8639	8352

Panel B				
	(1)	(2)	(3)	(4)
Birth weight <2500 g	-0.045**	-0.041**	-0.038**	-0.039**
	(0.02)	(0.02)	(0.02)	(0.02)
Female		-0.103***	-0.104***	-0.107***
		(0.01)	(0.01)	(0.01)
M. voc. ed.			0.037***	0.024**
			(0.01)	(0.01)
M. sec. ed.			0.139***	0.112***

			(0.01)	(0.02)
M. graduate			0.265***	0.196***
			(0.02)	(0.02)
University				0.179***
				(0.01)
Intercept	0.156	0.210	0.175	0.163
	(0.00)	(0.01)	(0.01)	(0.01)
R^2	0.001	0.021	0.056	0.082
N	8639	8639	8639	8352

Notes: The table relates birth weight (1966) to stock market participation in (1995-2010). Panels A-B report the estimation results from linear probability models. The dependent variable of the models is stock market participation over the period of 1995-2010. In Panel A, we use the log of birth weight, and in Panel B, an indicator for those who had low birth weight using the standard definition (<2,500 grams). The models include controls for gender, the mother's level of education at the time of birth (the omitted group is those with basic education or less), and an indicator for achieving a university degree by 1997. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

Table 3. The Relationship between Birth Weight and Stock Market Participation Controlling for Risk Aversion.

Panel A

	(1)	(2)	(3)	(4)	(5)
Ln (birth weight)	0.120***	0.079**	0.050	0.041	0.036
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
RA factor		-0.106***	-0.095***	-0.089***	-0.082***
		(0.01)	(0.01)	(0.01)	(0.01)
Female			-0.081***	-0.083***	-0.088***
			(0.01)	(0.01)	(0.01)
M. voc. ed.				0.029**	0.017
				(0.01)	(0.01)
M. sec. ed.				0.130***	0.107***
				(0.02)	(0.02)
M. graduate				0.214***	0.172***
				(0.03)	(0.03)
University					0.137***
					(0.02)
Intercept	-0.797	-0.462	-0.182	-0.136	-0.109
	(0.28)	(0.27)	(0.27)	(0.26)	(0.26)
R^2	0.002	0.077	0.087	0.110	0.126
N	5049	5049	5049	5049	5049

Panel B

	(1)	(2)	(3)	(4)	(5)
Birth weight <2500 g	-0.042	-0.033	-0.029	-0.029	-0.031
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)
RA factor		-0.106***	-0.096***	-0.089***	-0.082***
		(0.01)	(0.01)	(0.01)	(0.01)

Female			-0.083***	-0.084***	-0.089***
			(0.01)	(0.01)	(0.01)
M. voc. ed.				0.029**	0.017
				(0.01)	(0.01)
M. sec. ed.				0.130***	0.107***
				(0.02)	(0.02)
M. graduate				0.214***	0.173***
				(0.03)	(0.03)
University					0.137***
					(0.02)
Intercept	0.184	0.184	0.229	0.198	0.187
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
R^2	0.000	0.076	0.087	0.110	0.126
N	5049	5049	5049	5049	5049

Notes: The table relates birth weight (1966) to stock market participation (1995-2010). Panels A-B report the estimation results from linear probability models. The dependent variable of the models is stock market participation over the period of 1995-2010. In Panel A, we use the log of birth weight, and in Panel B, an indicator for those who had low birth weight using the standard definition (<2,500 grams). RA factor is a composite measure of risk aversion, computed as the first principal component of four survey measures of risk aversion. The models include controls for gender, the mother's level of education at the time of birth (the omitted group is those with basic education or less), and an indicator for achieving a university degree by 1997. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

Table 4. The Relationship between Birth Weight and Risk Aversion.

Panel A

	(1)	(2)	(3)	(4)
Ln (birth weight)	-0.390***	-0.184**	-0.168*	-0.151*
	(0.09)	(0.09)	(0.09)	(0.09)
Female		0.510***	0.507***	0.511***
		(0.03)	(0.03)	(0.03)
M. voc. ed.			-0.138***	-0.102***
			(0.04)	(0.04)
M. sec. ed.			-0.280***	-0.209***
			(0.04)	(0.04)
M. graduate			-0.355***	-0.232***
			(0.07)	(0.07)
University				-0.387***
				(0.04)
Intercept	3.176	1.216	1.161	1.063
	(0.77)	(0.75)	(0.75)	(0.73)
R^2	0.004	0.067	0.080	0.098
N	5049	5049	5049	5049

Panel B

	(1)	(2)	(3)	(4)
Birth weight <2500 g	0.087	0.057	0.055	0.057
	(0.08)	(0.08)	(0.08)	(0.08)
Female		0.517***	0.513***	0.516***
		(0.03)	(0.03)	(0.03)
M. voc. ed.			-0.137***	-0.101***
			(0.04)	(0.04)

M. sec. ed.			-0.281***	-0.210***
			(0.04)	(0.04)
M. graduate			-0.359***	-0.234***
			(0.07)	(0.07)
University				-0.388***
				(0.04)
Intercept	-0.006	-0.292	-0.212	-0.175
	(0.01)	(0.02)	(0.03)	(0.02)
R^2	0.000	0.066	0.079	0.098
N	5049	5049	5049	5049

Notes: The table relates birth weight (1966) to the measure of risk aversion (2012). Panels A-B report the estimation results from OLS models. The dependent variable of the models is the variable RA factor, a composite measure of risk aversion computed as the first principal component of four survey measures of risk aversion. In Panel A, we use the log of birth weight, and in Panel B, an indicator for those who had low birth weight using the standard definition (<2,500 grams). The models include controls for gender, the mother's level of education at the time of birth (the omitted group is mothers with basic education or less), and an indicator for achieving a university degree by 1997. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

Table 5. The Relationship between Birth Weight and Portfolio Composition.

Panel A

	(1)	(2)	(3)	(4)	(5)
Ln (birth weight)	-0.102	0.029	0.044	0.040	0.019
	(0.19)	(0.22)	(0.23)	(0.23)	(0.22)
RA factor		-0.075***	-0.079***	-0.075***	-0.065**
		(0.03)	(0.03)	(0.03)	(0.03)
Female			0.034	0.020	-0.002
			(0.07)	(0.07)	(0.07)
M. voc. ed.				0.018	-0.001
				(0.07)	(0.07)
M. sec. ed.				0.086	0.043
				(0.08)	(0.08)
M. graduate				0.174	0.119
				(0.14)	(0.14)
University					0.235***
					(0.07)
Intercept	2.685	1.581	1.448	1.450	1.570
	(1.53)	(1.81)	(1.84)	(1.85)	(1.77)
R^2	0.000	0.012	0.012	0.017	0.037
N	993	718	718	718	704

Panel B

	(1)	(2)	(3)	(4)	(5)
Birth weight <2500 g	0.105	0.085	0.083	0.061	0.023
	(0.15)	(0.18)	(0.18)	(0.19)	(0.18)
RA factor		-0.075***	-0.079***	-0.075***	-0.065**
		(0.03)	(0.03)	(0.03)	(0.03)
Female			0.031	0.018	-0.003

			(0.07)	(0.07)	(0.07)
M. voc. ed.				0.017	-0.001
				(0.07)	(0.07)
M. sec. ed.				0.087	0.043
				(0.08)	(0.08)
M. graduate				0.171	0.118
				(0.14)	(0.15)
University					0.235***
					(0.07)
Intercept	1.846	1.817	1.803	1.772	1.727
	(0.03)	(0.03)	(0.04)	(0.05)	(0.05)
R^2	0.001	0.012	0.012	0.017	0.037
N	993	718	718	718	704

Notes: The table relates birth weight (1966) to portfolio composition (2009-2010). Panels A-B report the estimation results from the OLS models. The dependent variable is the average value-weighted price-to-book value of the individual's equity portfolio. In Panel A, we use the log of birth weight, and in Panel B, an indicator for those who had low birth weight using the standard definition (<2,500 grams). The models include controls for RA factor (a composite measure of risk aversion, computed as the first principal component of four survey measures of risk aversion), gender, the mother's level of education at the time of birth (the omitted group is mothers with basic education or less), and an indicator for achieving a university degree by 1997. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

Table 6. The Relationship between Birth Weight and Stock Market Participation Controlling for Adult Height.

	1	2	3	4	5
Ln (birth weight)	0.041*	0.057**	0.051**	0.050**	0.040
	(0.024)	(0.024)	(0.024)	(0.024)	(0.033)
Height	0.005***	0.003***	0.002***	0.001**	0.000
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Female		-0.065***	-0.077***	-0.088***	-0.093***
		(0.011)	(0.011)	(0.011)	(0.016)
M. voc. ed.			0.037***	0.023**	0.018
			(0.010)	(0.010)	(0.013)
M. sec. ed.			0.137***	0.109***	0.107***
			(0.015)	(0.015)	(0.019)
M. graduate			0.256***	0.192***	0.173***
			(0.024)	(0.024)	(0.029)
University				0.177***	0.136***
				(0.015)	(0.018)
RA factor					-0.081***
					(0.006)
Intercept	-1.114	-0.749	-0.581	-0.480	-0.069
	(0.193)	(0.201)	(0.199)	(0.195)	(0.275)
R^2	0.021	0.024	0.057	0.082	0.125
N	8346	8346	8346	8263	5011

Notes: The table relates birth weight (1966) to stock market participation (1995-2010) controlling for adult height (1997). The table reports the estimation results from linear probability models. The dependent variable of the models is stock market participation over the period of 1995-2010. Height is measured in cm, in 1997. The models include controls for RA factor (a composite measure of risk aversion, computed as the first principal component of four survey measures of risk aversion), gender, the mother's level of education at the time of birth (the omitted group is mothers with basic education or less), and an indicator for achieving a university degree by 1997. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

Table 7. The Relationship between Birth Weight and Stock Market Participation Controlling for Income.

	1	2	3	4	5
Ln (birth weight)	0.108***	0.073**	0.063**	0.059**	0.042
	(0.029)	(0.029)	(0.028)	(0.028)	(0.032)
Ln (Income)	0.106***	0.095***	0.085***	0.066***	0.060
	(0.009)	(0.009)	(0.008)	(0.008)	(0.009)
Female		-0.100***	-0.101***	-0.106	-0.074
		(0.010)	(0.010)	(0.010)	(0.011)
M. voc. ed.			0.035***	0.026	0.017
			(0.012)	(0.012)	(0.013)
M. sec. ed.			0.131***	0.113	0.101
			(0.018)	(0.018)	(0.019)
M. graduate			0.228***	0.186	0.161
			(0.028)	(0.029)	(0.030)
University				0.132	0.108
				(0.017)	(0.018)
RA factor					-0.074
					(0.006)
Intercept	-1.792	-1.347	-1.187	-0.973	-0.778
	(0.256)	(0.256)	(0.251)	(0.252)	(0.282)
R^2	0.041	0.058	0.084	0.097	0.134
N	6121	6121	6121	5975	4927

Notes: The table relates birth weight (1966) to stock market participation (1995-2010) controlling for income (2012). The table reports the estimation results from linear probability models. The dependent variable of the models is stock market participation over the period of 1995-2010. Income is gross earned income in 2012. The models include controls for RA factor (a composite measure of risk aversion, computed as the first principal component of four survey measures of risk aversion), gender, the mother's level of education at the time of birth (the omitted group is mothers with basic education or less), and an indicator for achieving a university degree by 1997. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

Table 8. The Relationship between Birth Weight and Stock Market Participation Controlling for Net Wealth.

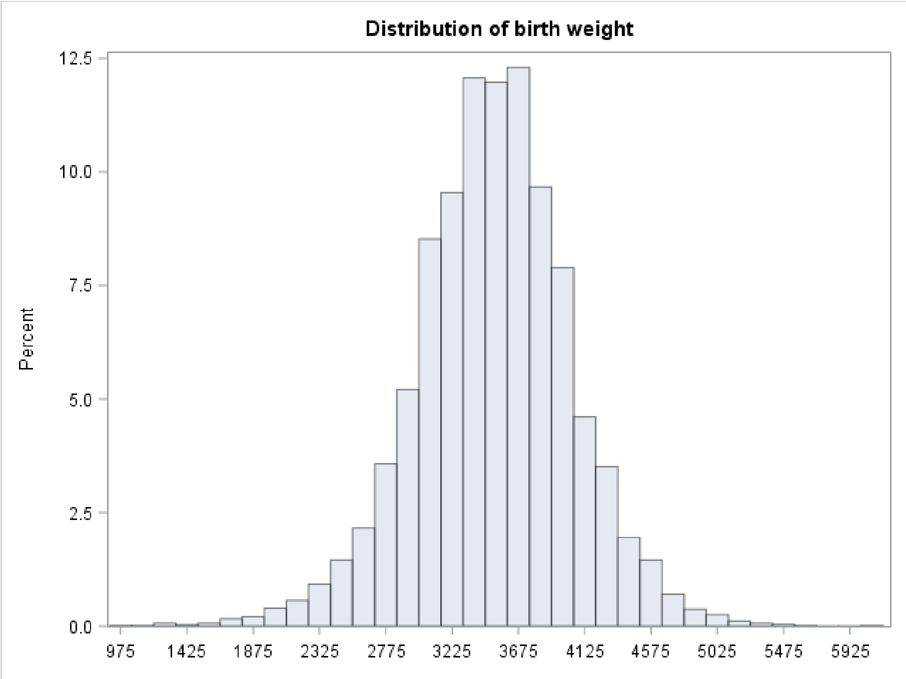
	1	2	3	4	5
Ln (birth weight)	0.124***	0.076**	0.068**	0.065*	0.040
	(0.035)	(0.035)	(0.034)	(0.034)	(0.036)
Ln (net wealth)	0.066***	0.064***	0.059***	0.051***	0.040***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Female		-0.122***	-0.121***	-0.123***	-0.088***
		(0.011)	(0.011)	(0.011)	(0.012)
M. voc. ed.			0.032**	0.022	0.012
			(0.014)	(0.014)	(0.015)
M. sec. ed.			0.130***	0.108***	0.097***
			(0.020)	(0.021)	(0.021)
M. graduate			0.218***	0.172***	0.155***
			(0.031)	(0.032)	(0.032)
University				0.143***	0.120***
				(0.018)	(0.019)
RA factor					-0.076***
					(0.006)
Intercept	-1.582	-1.103	-1.008	-0.912	-0.600
	(0.286)	(0.285)	(0.281)	(0.279)	(0.293)
R^2	0.048	0.071	0.093	0.109	0.141
N	4705	4705	4705	4603	4147

Notes: The table relates birth weight (1966) to stock market participation (1995-2010) controlling for net wealth (2012). The table reports the estimation results from linear probability models. The dependent variable of the models is stock market participation over the period of 1995-2010. The dependent variable of the models is stock market participation over the period 1995-2010. Net wealth is the self-reported value from the NFBC1966 follow-up survey conducted in 2012. The models include controls for RA factor (a composite measure of risk aversion, computed as the first principal component of four survey measures of risk aversion), gender, the mother's level of education at the time of birth (the omitted group is mothers with basic education or less), and an indicator for achieving a university degree by 1997. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

ONLINE SUPPLEMENTARY APPENDIX (not for publication)

Figure A1. The distribution of birth weight and the log of birth weight.

Panel A. Birth weight (grams)



Panel B. Ln (birth weight)

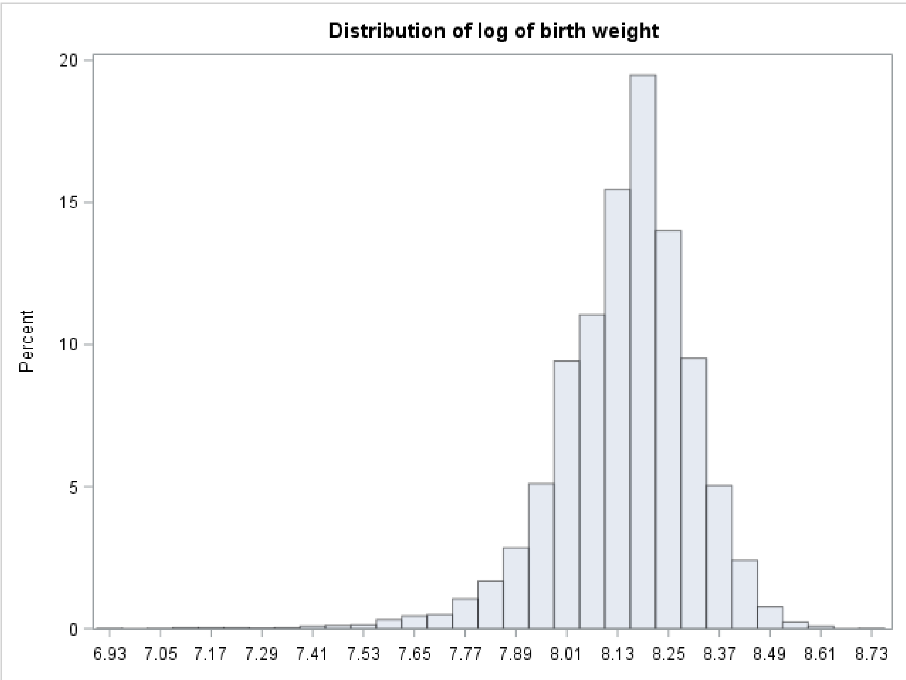
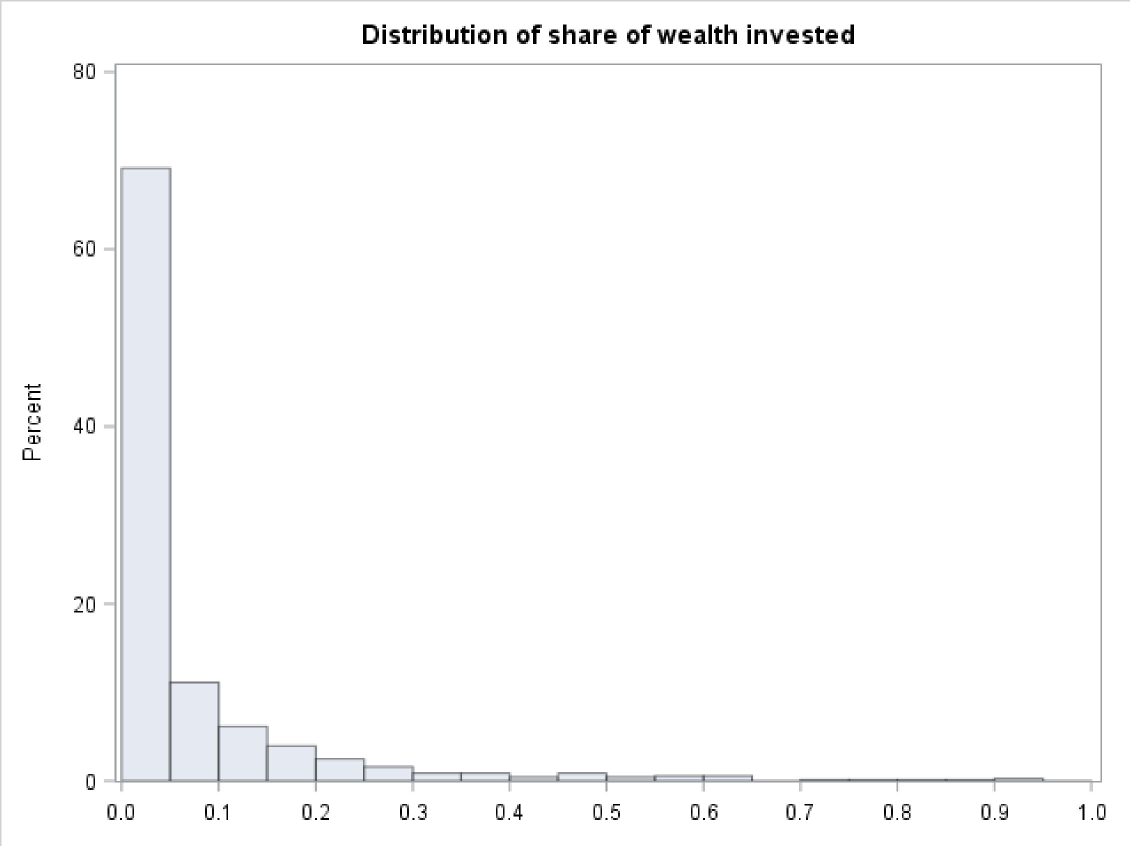


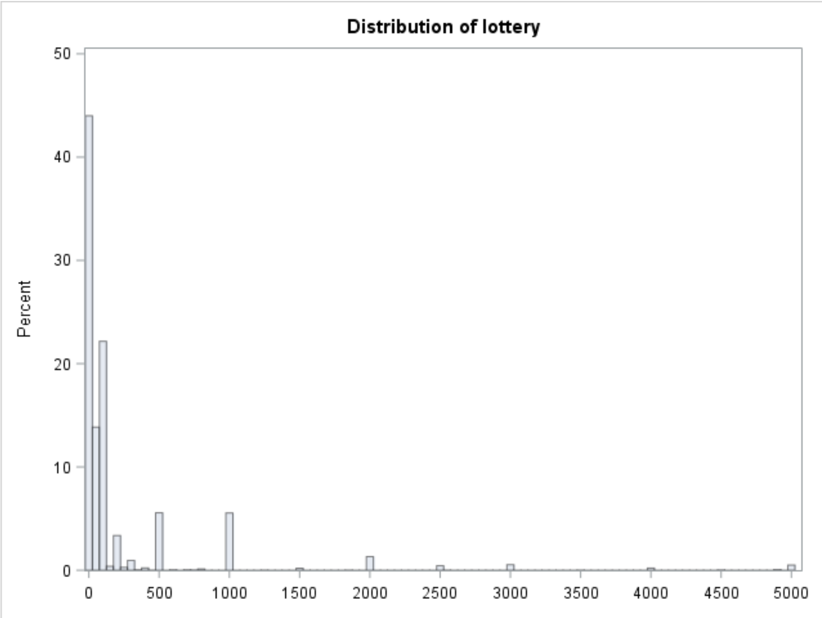
Figure A2. The distribution of the share of wealth invested in stocks.



Notes: The figure shows the distribution for the percentage of net wealth invested in stocks. We take the value of the stock portfolio in December 2010 (on the last day for which an observation is available) and divide it by the self-reported net wealth from the 2012 follow-up survey.

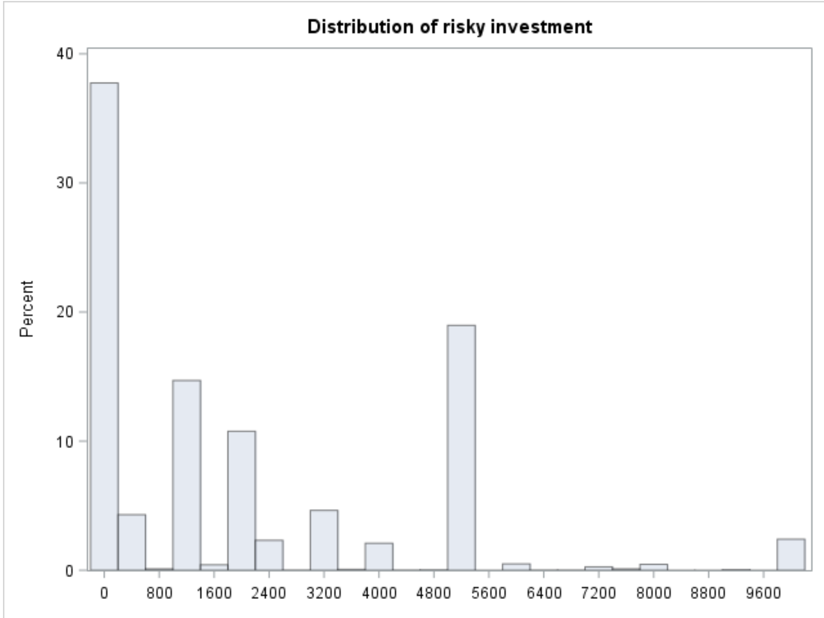
Figure A3. The distributions of each risk aversion measure.

Panel A. Lottery question.



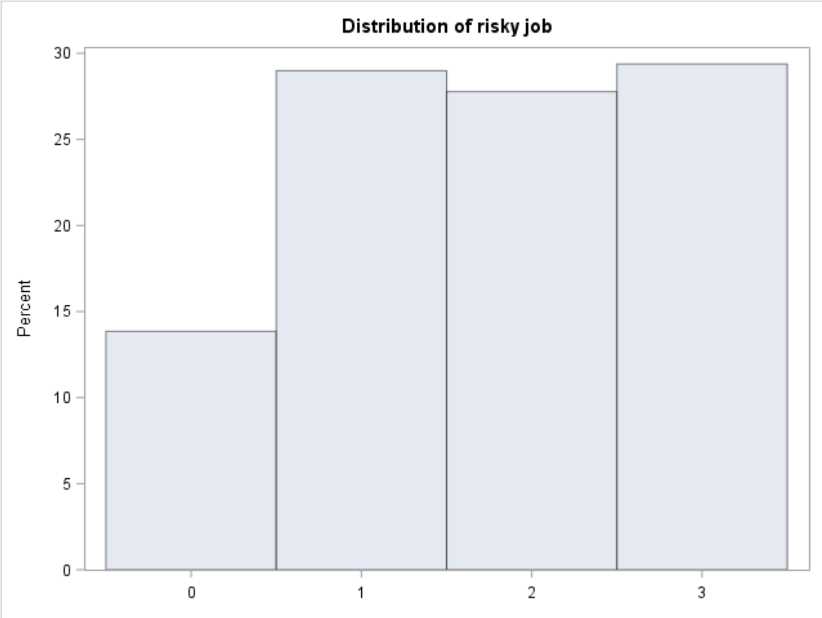
Notes: Similar to the question in Guiso and Paiella (2008). The responses are in Euros. The question is "You have the chance to participate, upon paying a fee, in a game that offers a 50% chance to win 10,000€ and a 50% chance to get nothing. What is the maximum amount you are willing to pay to participate?" N=5780 (5 individuals with lottery > 5000 are not included to make the presentation clearer).

Panel B. Risky investment question



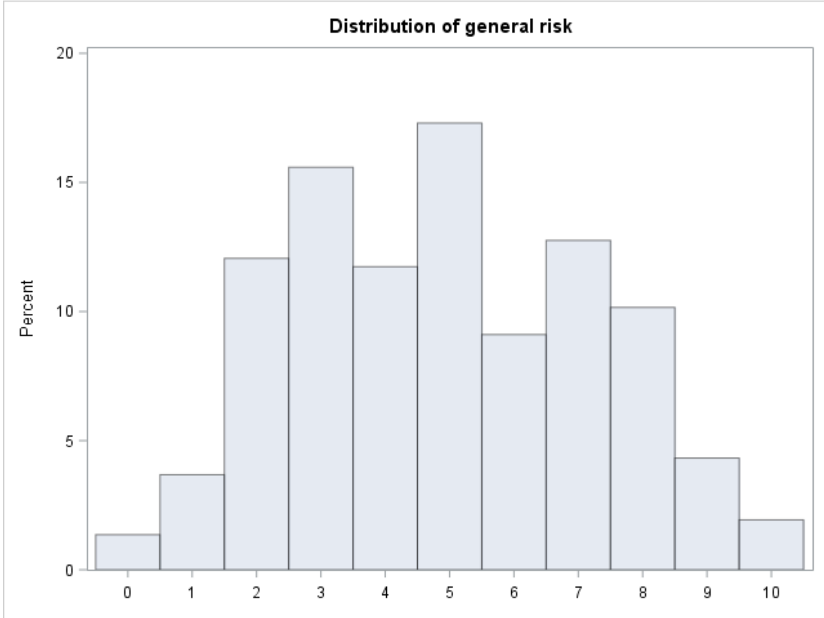
Notes: Similar to the question in Halko et al. (2012). The responses are in Euros. The question is "You just won 10000€. You quickly get an offer from a trustworthy bank: you can double your investment in two years, but there is an equally likely probability that you could lose half of the investment over the same period. How much would you invest?" N = 5694.

Panel C. Risk job question.



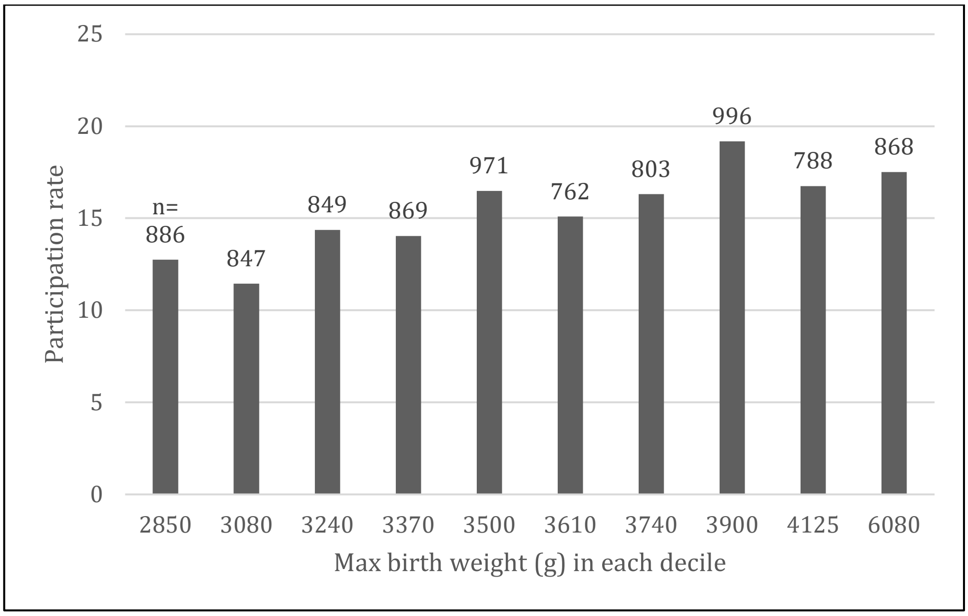
Notes: Similar to the question in Barsky et al. (1997). The question asks the respondent to choose between a stable salary and a 50/50 gamble on a higher or lower salary. The question is asked three times with varying levels of the risky outcome. The value for a risky job is the number of gambles rejected so that higher values reflect greater risk aversion. N = 5357.

Panel D. General risk



Notes: Similar to the question in Dohmen et al. (2011). The question is "In general, are you fully willing to take risks or do you avoid taking risks?" The response is scaled from 0 (not at all willing to take risks) to 10 (fully willing to take risks). We reverse the scale so that higher values indicate higher risk aversion.

Figure A4. Stock market participation by birth weight decile.



Notes: Due to many individuals having the same birth weight at decile breakpoints, the groups have slightly differing numbers of individuals.

Table A1. Pairwise correlations.

	Ln (b.wt)	Female	M. basic. ed	M. voc. ed	M. sec. ed	M. graduate	University	RA factor	Ln (income)	Ln (wealth)
Female	-0.11***									
M. basic. ed	-0.03**	0								
M. voc. ed	0	0	-0.64***							
M. sec. ed	0.01	0.01	-0.47***	-0.16***						
M. graduate	0.03***	-0.01	-0.31***	-0.11***	-0.08***					
University	0.02**	0.02*	-0.2***	0.04***	0.11***	0.21***				
RA factor	-0.06***	0.26***	0.1***	-0.02*	-0.07***	-0.07***	-0.16***			
Ln (income)	0.02*	-0.06***	-0.11***	0.04***	0.07***	0.08***	0.24***	-0.23***		
Ln (wealth)	0.04***	-0.05***	-0.1***	0.03**	0.06***	0.09***	0.19***	-0.21***	0.45***	
VW-Ptbv	-0.02	0.01	-0.05*	-0.01	0.01	0.09***	0.15***	-0.11***	0.11***	0.09**
Participation	0.05***	-0.14***	-0.13***	0	0.1***	0.15***	0.2***	-0.27***	0.17***	0.21***

Notes: The table reports pairwise correlations for the variables. RA factor is the composite measure of risk aversion computed as the first principal component of four survey measures of risk aversion. The variable "VW-Ptbv" refers to the stock portfolio's average value-weighted market-to-book ratio. Stock market participation is measured over the period of 1995-2010. Significant at the * 10%, ** 5%, *** 1% levels.

Table A2. Birth weight by mother's education level.

Panel A.

Mother's education level	Mean birth weight (g)	Level in Panel B
Basic	3480.17	1
Vocational	3492.59	2
Secondary	3512.2	3
Graduate	3558.96	4

Panel B.

Least Squares Means for effect Mother's education level Pr > |t| for H0: LSMean(i)=LSMean(j) Dependent Variable: birth weight			
i/j	1	2	3
1			
2	0.841		
3	0.3194	0.8059	
4	0.016	0.0975	0.4306

Notes: Panel A shows the mean birth weight in grams by the mother's education level. Panel B displays the Tukey-Kramer adjusted *p*-values for the test of the equality of the means across the mother's level of education.

Table A3. The Relationship between Birth Weight and Stock Market Participation by Gender.

Panel A. Males

Ln (birth weight)	0.125***	0.114***	0.110***	0.088*	0.059
	-0.04	-0.04	-0.04	0.05	0.06
M. voc. ed.		0.049***	0.031*	0.025	0.016
		-0.02	-0.02	0.02	0.02
M. sec. ed.		0.149***	0.114***	0.135***	0.108***
		-0.02	-0.02	0.03	0.03
M. graduate		0.268***	0.163***	0.099**	0.073*
		-0.04	-0.04	0.04	0.04
University			0.268***	0.204***	0.171***
			-0.02	0.03	0.03
RA factor				-0.096***	-0.084***
				0.01	0.01
Ln (income)					0.023
					0.01
Ln (wealth)					0.05***
					0.01
Intercept	-0.808	-0.761	-0.743	-0.548	-1.125
	-0.3	-0.3	-0.29	0.42	0.47
R^2	0.003	0.032	0.076	0.13	0.15
N	4120	4120	3981	2252	1981

Panel B. Females

Ln (birth weight)	0.043	0.023	0.016	-0.013	0.011
	-0.03	-0.03	-0.03	0.04	0.04
M. voc. ed.		0.026**	0.018	0.013	0.012
		-0.01	-0.01	0.02	0.02
M. sec. ed.		0.129***	0.111***	0.092***	0.089***
		-0.02	-0.02	0.02	0.03
M. graduate		0.260***	0.221***	0.247***	0.253***
		-0.03	-0.03	0.04	0.05
University			0.106***	0.083***	0.07***
			-0.02	0.02	0.02
RA factor				-0.058***	-0.053***
				0.01	0.01
Ln (income)					0.001
					0.01
Ln (wealth)					0.028***
					0.01
Intercept	-0.244	-0.115	-0.069	0.206	-0.318
	-0.22	-0.22	-0.22	0.31	0.38

R^2	0.001	0.045	0.057	0.08	0.09
N	4519	4519	4371	2797	2129

Notes: The table relates birth weight (1966) to stock market participation in (1995-2010). We use the log of birth weight as the explanatory variable of interest. The dependent variable of the models is stock market participation over the period of 1995-2010. The models include controls, as noted in the table. Panel A shows the results for males and Panel B shows the results for females. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

Table A4. Principal Component Analysis of the Four Risk Aversion Measures.

Lottery	-0.322
Risky Investment	-0.398
General Risk	0.368
Risky Job	0.412

Notes: The table reports the standardized scoring coefficients on the first principal component of the four variables. The first principal component has eigenvector = 1.76, covering 44% of the total variance. The second principal component has eigenvector = 0.92, so it is not retained for analysis.

Table A5. The Relationship between Birth Weight and Stock Market Participation.

	1	2	3	4	5
Size 2	-0.013	-0.009	-0.008	-0.002	-0.004
	(0.016)	(0.016)	(0.015)	(0.015)	(0.022)
Size 3	0.016	0.019	0.012	0.010	0.006
	(0.016)	(0.016)	(0.016)	(0.016)	(0.022)
Size 4	0.013	0.012	0.006	0.003	0.003
	(0.016)	(0.016)	(0.016)	(0.016)	(0.022)
Size 5	0.037**	0.036**	0.030*	0.029*	0.013
	(0.016)	(0.016)	(0.016)	(0.016)	(0.022)
Size 6	0.023	0.019	0.011	0.013	0.001
	(0.017)	(0.017)	(0.017)	(0.017)	(0.023)
Size 7	0.036**	0.031*	0.023	0.026	0.009
	(0.017)	(0.017)	(0.017)	(0.017)	(0.023)
Size 8	0.064***	0.057***	0.049**	0.040**	0.023
	(0.017)	(0.017)	(0.016)	(0.016)	(0.022)
Size 9	0.040**	0.025	0.019	0.015	0.007
	(0.017)	(0.017)	(0.017)	(0.017)	(0.023)
Size 10	0.048***	0.029*	0.019	0.021	0.004
	(0.017)	(0.017)	(0.017)	(0.017)	(0.023)
Female		-0.101***	-0.102***	-0.106***	-0.088***
		(0.008)	(0.008)	(0.008)	(0.011)
M. voc. ed.			0.037***	0.024**	0.018
			(0.010)	(0.010)	(0.013)
M. sec. ed.			0.138***	0.111***	0.107***
			(0.015)	(0.015)	(0.019)
M. graduate			0.263***	0.194***	0.172***
			(0.024)	(0.024)	(0.029)
University				0.178***	0.137***
				(0.015)	(0.017)
RA factor					-0.081***
					(0.006)
Intercept	0.128	0.185	0.157	0.146	0.179
	(0.011)	(0.012)	(0.012)	(0.012)	(0.017)
R^2	0.004	0.023	0.057	0.083	0.126
N	8639	8639	8639	8352	5049

Notes: The table relates birth weight (1966) to stock market participation in (1995-2010). The table reports the estimation results from linear probability models. The dependent variable of the models is stock market participation over the period of 1995-2010. The Size groups are dummy variables for each birth weight deciles, with Size 10 representing the greatest birth weight and Size 1 the omitted group. The groups do not have exactly the same number of individuals; varying numbers of individuals may have the same birth weight at decile breakpoints. The models include controls for RA factor (a composite measure of risk aversion, computed as the first principal component of four survey measures of risk aversion), gender, the mother's level of education at the time of birth (the omitted group is mothers with basic education or less), and an indicator for achieving a university degree by

1997. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

Table A6. Birth weight and the unconditional share of wealth invested in stocks.

	1	2	3	4	5	6	7	8
Ln (birth weight)	0.009***	0.006**	0.005*	0.005*	0.003	0.004	0.004	0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)	(0.006)	(0.006)
Female		-0.009***	-0.009***	-0.009***	-0.011***	-0.011***	-0.011***	-0.011***
		(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
M. voc. ed.			0.003	0.002	0.002	0.002	0.002	0.002
			(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
M. sec. ed.			0.002	0.001	0	0	0	0.001
			(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
M. graduate			0.012**	0.009*	0.009	0.006	0.006	0.007
			(0.005)	(0.005)	(0.007)	(0.005)	(0.006)	(0.006)
University				0.009***	0.006*	0.009**	0.008**	0.01***
				(0.002)	(0.003)	(0.004)	(0.003)	(0.004)
RA factor					-0.007***	-0.008***	-0.008***	-0.009***
					(0.001)	(0.001)	(0.001)	(0.001)
Ln (Income)						-0.005**		-0.005**
						(0.002)		(0.002)
Ln (Wealth)							-0.003**	-0.002
							(0.002)	(0.002)
Intercept	-0.062	-0.034	-0.031	-0.028	-0.008	0.042	0.021	0.067
	(0.023)	(0.023)	(0.023)	(0.023)	(0.039)	(0.046)	(0.05)	(0.054)
R^2	0	0.01	0.01	0.01	0.03	0.03	0.03	0.03
N	8091	8091	8091	7824	4811	4481	3983	3947

Notes: The table relates birth weight (1966) to the share of wealth invested in stocks as an adult. We estimate OLS regressions. We use the log of birth weight as the explanatory variable of interest. The dependent variable of the models is the percentage of net wealth invested in stocks (December 2010), including values of zero for those not holding stocks. The models include controls, as noted in the table. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

Table A7. Birth weight and the unconditional share of wealth invested in stocks.

	1	2	3	4	5	6	7	8
Ln (birth weight)	0.115***	0.073**	0.064*	0.06*	0.023	0.02	0.016	0.013
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
Female		-0.112***	-0.114***	-0.12***	-0.09***	-0.083***	-0.078***	-0.078***
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
M. voc.ed.			0.039***	0.027**	0.012	0.011	0.008	0.008
			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
M. sec.ed.			0.094***	0.066***	0.057***	0.048***	0.046***	0.044***
			(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
M. graduate			0.167***	0.111***	0.089***	0.074***	0.069***	0.071***
			(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
University				0.145***	0.088***	0.079***	0.066***	0.069***
				(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
RA factor					-0.068***	-0.063***	-0.056***	-0.056***
					(0.01)	(0.01)	(0.01)	(0.01)
Ln (Income)						0.019**		-0.008
						(0.01)		(0.01)
Ln (Wealth)							0.024***	0.026***
							(0.01)	(0.01)
Intercept	-1.3	-0.902	-0.853	-0.831	-0.472	-0.643	-0.673	-0.578
	(0.27)	(0.27)	(0.27)	(0.27)	(0.3)	(0.31)	(0.31)	(0.32)
Pseudo R^2	0	0.04	0.07	0.13	0.41	0.44	0.49	0.49
Obs. at lower bound	7397	7397	7397	7141	4189	3863	3363	3330
N	8091	8091	8091	7824	4811	4481	3983	3947

Notes: The table relates birth weight (1966) to the share of wealth invested in stocks as an adult. We use Tobit regressions, with a lower bound at zero. We use the log of birth weight as the explanatory variable of interest. The dependent variable of the models is the share of net wealth invested in stocks (December 2010), including values of zero for those not holding stocks. The models include controls, as noted in the table. Pseudo-R^2 is the McFadden R^2. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.

Table A8. Birth weight and stock market participation.

	Stock	Stock	Stock	Stock	RA factor	RA factor
Ln (birth weight)	0.064*	0.037	0.089*	0.061	-0.21*	-0.253**
	(0.03)	(0.04)	(0.05)	(0.05)	(0.11)	(0.13)
RA factor (2012)		-0.078***		-0.071***		
		(0.01)		(0.01)		
Female	-0.147***	-0.117***	-0.155***	-0.122***	0.537***	0.492***
	(0.01)	(0.01)	(0.02)	(0.02)	(0.04)	(0.04)
Apgar 1 min.	-0.004	-0.005	-0.007	-0.007	-0.012	-0.003
	(0)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
Gestation weeks	-0.001	0	-0.001	0	0.004*	0.005
	(0)	(0)	(0)	(0)	(0)	(0)
Birth length	-0.002	-0.001	-0.003*	-0.002	0.006**	0.006**
	(0)	(0)	(0)	(0)	(0)	(0)
Own home	-0.004	0.004	-0.01	-0.009	0.02	0.016
	(0.01)	(0.01)	(0.02)	(0.02)	(0.04)	(0.04)
#rooms in home	0.004	-0.003	0.001	-0.002	0.002	0.019
	(0)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
M. voc. ed.	0.007	0.011	0.01	0.005	-0.093**	-0.074*
	(0.01)	(0.02)	(0.02)	(0.02)	(0.04)	(0.04)
M. sec. ed.	0.051***	0.065***	0.051**	0.052**	-0.078	-0.082
	(0.02)	(0.02)	(0.03)	(0.03)	(0.05)	(0.06)
M. graduate	0.068**	0.071*	0.052	0.059	-0.058	-0.085
	(0.03)	(0.04)	(0.04)	(0.04)	(0.09)	(0.1)
M. prof.occ.	0.039*	0.046*	0.05*	0.038	0.068	0.096
	(0.02)	(0.02)	(0.03)	(0.03)	(0.06)	(0.07)
M. skill.occ.	0.007	0.013	0.012	0.018	0.001	0.025
	(0.01)	(0.02)	(0.02)	(0.02)	(0.04)	(0.05)
M. nonskill.occ.	-0.009	0.007	-0.001	0.009	0.027	0.01
	(0.01)	(0.02)	(0.02)	(0.02)	(0.04)	(0.05)
M. height	0.002*	0	0	0	-0.001	-0.003
	(0)	(0)	(0)	(0)	(0)	(0)
F. manager	0.084***	0.067***	0.078***	0.064**	-0.264***	-0.247***
	(0.02)	(0.02)	(0.03)	(0.03)	(0.06)	(0.06)
Grades 14 yr	0.004***	0.003***	0.003***	0.003***	-0.011***	-0.007***
	(0)	(0)	(0)	(0)	(0)	(0)
Height 14 yr	0	-0.001	-0.001	-0.001	-0.005**	-0.003
	(0)	(0)	(0)	(0)	(0)	(0)
Smoking try 14 yr	-0.013	-0.019	-0.005	-0.012	-0.1***	-0.103***
	(0.01)	(0.01)	(0.02)	(0.02)	(0.04)	(0.04)
Smoker 14 yr	-0.016	-0.021	0.013	0.005	-0.149***	-0.157***
	(0.01)	(0.02)	(0.02)	(0.02)	(0.05)	(0.05)
University (1997)	0.125***	0.107***	0.103***	0.094***	-0.246***	-0.138**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.05)	(0.05)
Ln (income 2012)			0.011	0.001		-0.193***
			(0.01)	(0.01)		(0.03)
Ln (wealth 2012)			0.049***	0.042***		-0.09***

			(0.01)	(0.01)		(0.01)
Intercept	-0.672**	-0.163	-1.116***	-0.624	3.177***	6.068***
	(0.27)	(0.35)	(0.4)	(0.41)	(0.98)	(1.14)
R^2	0.103	0.136	0.124	0.151	0.117	0.148
N	5746	3692	3338	3032	3692	3032

Notes: The table relates birth weight (1966) to stock market participation (1995-2010) controlling for family background and early health status. The table reports the estimation results from linear probability models. The dependent variables of the models is stock market participation over the period of 1995-2010 (Columns 1-4) and individual risk aversion (Columns 5-6). Apgar 1min is the Apgar score reflecting newborn health observed at one minute after birth. Gestation weeks is the length of the pregnancy, in weeks. Birth length is length at birth, in cm. Own home is an indicator of the family living in an owner-occupied home. #rooms in home is the number of rooms in the home. M. voc. ed, M. sec. ed., and M. graduate are indicators of the mother's level of education at the time of birth (vocational, secondary, and graduate; the omitted group is mothers with basic education or less). M. prof. occ., M. skill. occ., M. nonskill. occ are indicators of the mother's occupational level at the time of birth (the omitted group is mothers without an occupation). M. height is mother's height in cm. F. manager is an indicator for the father having a managerial position when the individual was 14 years old. Grades 14 yr is the self-reported average grade in school at 14 years old. Height 14 yr. is measured in cm. Smoking try 14 yr is an indicator for having tried smoking tobacco at 14 years old. Smoking 14 yr is an indicator for smoking tobacco regularly at 14 years old (the omitted group is those who never tried smoking tobacco). University is an indicator for having completed a bachelor's or master's degree by 31 years old. Ln (income) and Ln (wealth) are the logs of income and wealth which were self-reported in euros at 46 years old. Heteroscedasticity-robust standard errors are reported in parentheses with significance at the *10% **5% and ***1% levels.