

Early Life Conditions and Portfolio Choices

How do the elderly decide?

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- How do agents decide relative wealth they keep in stocks versus bonds or shape their attitude towards risks?
- What are the determinants of household portfolio choices and most importantly, how far back do they go?

So... What are the determinants?

- **Health** and **socioeconomic status** in early life appear to affect health and socioeconomic status later in life (Currie 2009)
- The impact of childhood socioeconomic status on education and **cognition** early in life explained an even larger share of this effect (Palloni 2006)

Why should childhood conditions affect portfolio choice?

Health

- Health problems represent a risk in various dimensions: length of life, increased expenses, loss of a job.
- Increased exposure to risk in one dimension may lead people to reduce risks in other dimensions, namely holding risky assets like stocks or getting into riskier careers (e.g. become an entrepreneur).
- Health problems in childhood may put people at a disadvantage when they start their working lives, and thus lead to a reduced stream of lifetime income, which has implications for portfolio choice.
- Literature in economics: Rosen and Wu (2003), Guiso, Haliassos and Jappelli (2005) and Edwards (2008)

Why should childhood conditions affect portfolio choice?

Cognition

- Bad test scores are associated with lower childhood SES, and gaps in abilities by socioeconomic status open up early and tend to persist later in life.
- Cognition in older age is positively associated with risky portfolio choice, and thus it could also act partly as a mediator for childhood cognition.
- Portfolio decisions may be cognitively demanding decisions at any age, but especially so at older ages, and
- ① Supply of complex financial products has increased.
- ② Recent reforms of financial systems around the world have been putting individuals more and more in charge of their own financial security after retirement.
- Literature in economics: Lee et al. (2003), Heckman, Stixrud and Urzua (2006), Christelis, Jappelli and Padula (2010)

Why should childhood conditions affect portfolio choice?

Socioeconomic status

Generally, individuals with higher

- education,
- income, and
- wealth

hold more of their financial wealth in stocks than lower education agents with the same age, income and wealth.

- Health outcomes in later life are associated with lower childhood SES.
- Literature in economics: McArdle, Smith and Willis (2009), Luo and Waite (2005)

Forcing variables SHARELIFE and SHARE

- **Health**

- Number of months in hospital during childhood,

- **Cognition**

- **Socioeconomic status**

- **Demographics**

- **Health**

- Number of months in hospital during childhood,
- Current self-reported health.

- **Cognition**

- **Socioeconomic status**

- **Demographics**

- **Health**

- Number of months in hospital during childhood,
- Current self-reported health.

- **Cognition**

- Above average maths/language skills during childhood,

- **Socioeconomic status**

- **Demographics**

- **Health**

- Number of months in hospital during childhood,
- Current self-reported health.

- **Cognition**

- Above average maths/language skills during childhood,
- Current numeracy and reading test score.

- **Socioeconomic status**

- **Demographics**

● Health

- Number of months in hospital during childhood,
- Current self-reported health.

● Cognition

- Above average maths/language skills during childhood,
- Current numeracy and reading test score.

● Socioeconomic status

- No. of rooms/books in the house during childhood,

● Demographics

• Health

- Number of months in hospital during childhood,
- Current self-reported health.

• Cognition

- Above average maths/language skills during childhood,
- Current numeracy and reading test score.

• Socioeconomic status

- No. of rooms/books in the house during childhood,
- Current real assets, net financial assets (of S/MF/B/LI/IRA), total income net of capital income (assets+self-employment).

• Demographics

● Health

- Number of months in hospital during childhood,
- Current self-reported health.

● Cognition

- Above average maths/language skills during childhood,
- Current numeracy and reading test score.

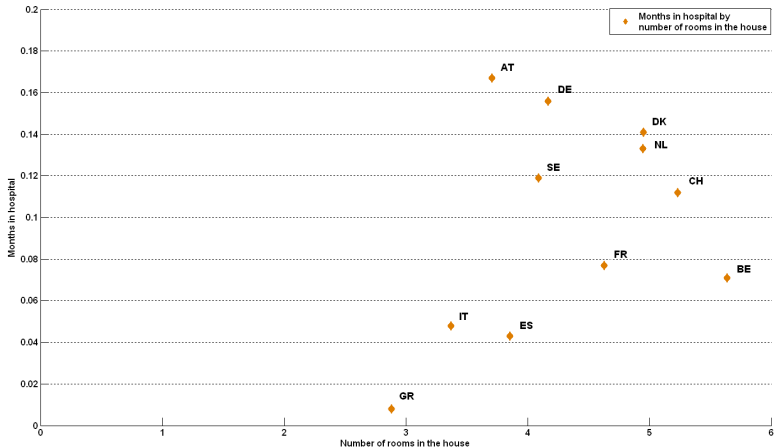
● Socioeconomic status

- No. of rooms/books in the house during childhood,
- Current real assets, net financial assets (of S/MF/B/LI/IRA), total income net of capital income (assets+self-employment).

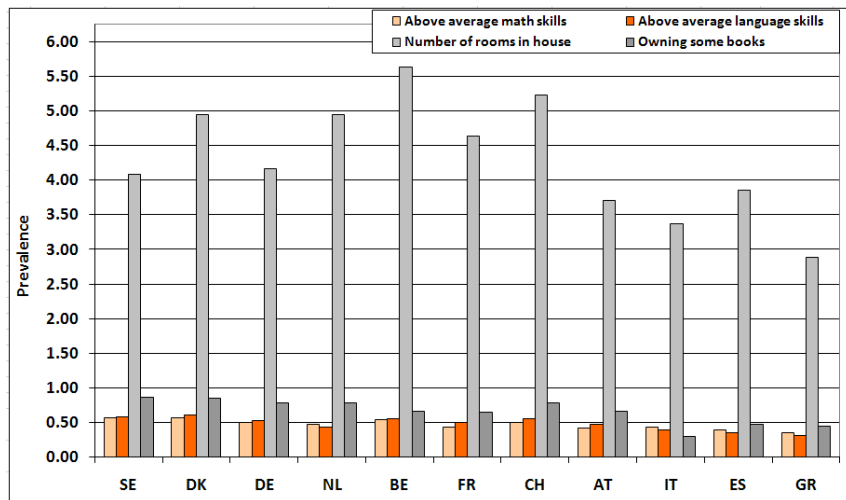
● Demographics

- age, gender, marital status, education, country, no. of children.

Childhood health conditional on SES

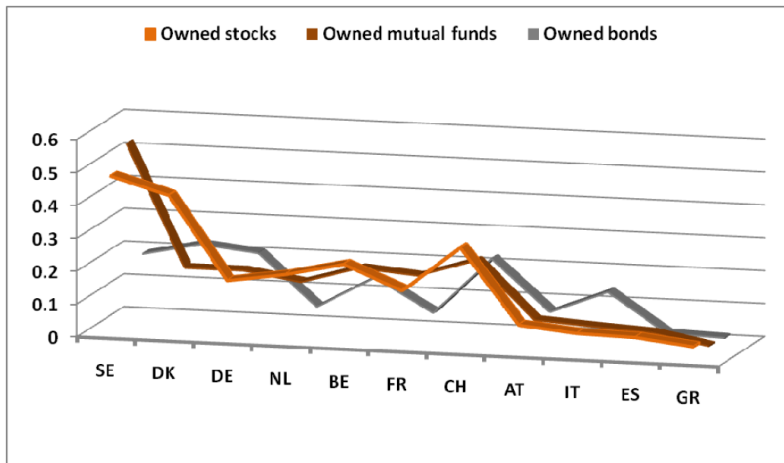


Prevalence of childhood cognition and SES variables

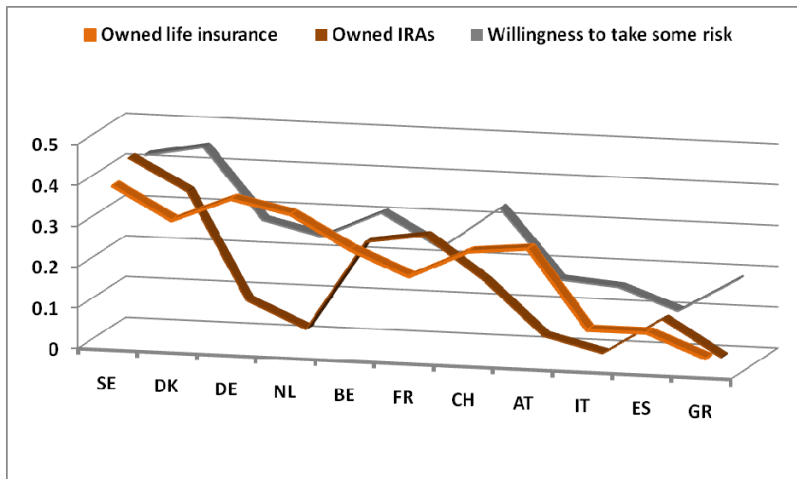


- Ownership of
 - Stocks (hh),
 - Mutual Funds (hh),
 - Bonds (hh),
 - Life Insurance (hh),
 - IRAs (i), and
 - Attitude towards risk (i).

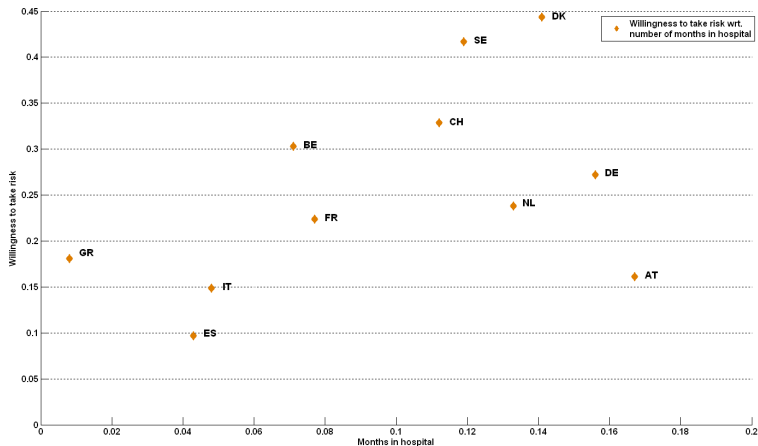
Stocks, mutual funds and bonds ownership by country



Life insurance, IRAs ownership and attitude towards risk by country



Willingness to take risk and health by country



And to answer that:

- Random effect probit of the outcome variables
 - Estimate the effects of forcing variables on (the transitions in and out of) owning certain assets.
- Predictors: current health, wealth, cognition, demographics, and childhood health, cognition, SES indicators.
 - Fixed country effects - to capture specific conditions.
- Compute transitions as conditional probabilities arising from a discrete choice panel data model that allows for autocorrelation of all time-varying unobservable factors present in the estimating equations.

Results - Owning Stocks

Table 1a. Childhood variables

Variable	Strong Sig.	Weak Sig.	No Sig.
Months in hospital		-	
Above av. maths skills	+		
Above av. lang. skills			-
No. of rooms	+		
Owning some books			+

Table 1b. Current variables

Variable	Coup	Age	HS	PEd	Chd	BHlth	RdS	Num	RA	NFA	NCI	SRisk
Strong Sig.	+		+	+	-		+	+	+	+	+	+
Weak Sig.												
No Sig.		+				-						

Results - Owning Mutual Funds

Table 2a. Childhood variables

Variable	Strong Sig.	Weak Sig.	No Sig.
Months in hospital	+		
Above av. maths skills	+		
Above av. lang. skills			+
No. of rooms			+
Owning some books	+		

Table 2b. Current variables

Variable	Coup	Age	HS	PEd	Chd	BHlth	RdS	Num	RA	NFA	NCI	SRisk
Strong Sig.		+	+	+	-	-	+	+	+	+	+	+
Weak Sig.	+											
No Sig.												

Results - Owning Bonds

Table 3a. Childhood variables

Variable	Strong Sig.	Weak Sig.	No Sig.
Months in hospital			-
Above av. maths skills			+
Above av. lang. skills			-
No. of rooms			+
Owning some books	+		

Table 3b. Current variables

Variable	Coup	Age	HS	PEd	Chd	BHlth	RdS	Num	RA	NFA	NCI	SRisk
Strong Sig.	+	+	+	+	-	-	+	+	+	+		+
Weak Sig.												
No Sig.											+	

Results - Owning Life Insurance

Table 4a. Childhood variables

Variable	Strong Sig.	Weak Sig.	No Sig.
Months in hospital			-
Above av. maths skills			-
Above av. lang. skills		+	
No. of rooms			+
Owning some books		+	

Table 4b. Current variables

Variable	Coup	Age	HS	PEd	Chd	BHlth	RdS	Num	RA	NFA	NCI	SRisk
Strong Sig.	+	-	+	+			+		+	+		+
Weak Sig.												
No Sig.					+	+		+			+	

Results - Owning IRAs

Table 5a. Childhood variables

Variable	Strong Sig.	Weak Sig.	No Sig.
Months in hospital	-		
Above av. maths skills			-
Above av. lang. skills			-
No. of rooms			+
Owning some books	+		

Table 5b. Current variables

Variable	Coup	Age	Fem	HS	PEd	Chd	BHlth	RdS	Num	RA	NFA	NCI	SRisk
Strong Sig.		-	-	+	+	-	-		+	+	+	+	+
Weak Sig.													
No Sig.	+							+					

Results - Willingness to take risk

Table 6a. Childhood variables

Variable	Strong Sig.	Weak Sig.	No Sig.
Months in hospital	+		
Above av. maths skills			+
Above av. lang. skills			+
No. of rooms	+		
Owning some books	+		

Table 6b. Current variables

Variable	Coup	Age	Fem	HS	PEd	Chd	BHlth	RdS	Num
Strong Sig.	+	-	-	+	+	-	-	+	+
Weak Sig.									
No Sig.									

To sum up

- Time in hospital is associated with less investment in S/IRAs, while the association with MF ownership/FinRiskTaking is actually positive. The effects of poor childhood health are nonsignificant for the other financial assets.
- Childhood cognition, as represented by above average mathematics skills, is strongly positively associated with investment in S/MF, while language skills matter weakly only for owning LI.
- The positive association of number of rooms is strong for owning S/FinRiskTaking, while owning some books has a strong positive impact on MF/B/IRAs/FinRiskTaking and a weak impact on LI ownership.

- Has potentially important implications for policy makers and practitioners:
 - increase access to health care providers
 - make health care more affordable, and
 - include initiatives for disease prevention and education on health issues.
 - boosting childhood cognitive skills
 - high quality childcare,
 - remedial education of students that lag behind their peers,
 - programs that aim to prevent early school leaving, and
 - post-secondary education training.
 - provide support for economically-challenged families.

Variable	Stocks	Mut.Fds	Bonds	Life Ins	IRAs	Some risk
Being in a couple	0.297 (0.051)	0.092 (0.047)	0.082 (0.050)	0.413 (0.047)	0.020 (0.046)	0.058 (0.009)
Age	0.003 (0.002)	0.006 (0.002)	0.024 (0.002)	-0.061 (0.002)	-0.061 (0.002)	-0.004 (0.001)
Female					-0.066 (0.035)	-0.075 (0.009)
Health fair or poor	-0.052 (0.041)	-0.116 (0.039)	-0.088 (0.042)	0.008 (0.037)	-0.150 (0.041)	-0.049 (0.010)
Reading score	0.150 (0.057)	0.182 (0.054)	0.155 (0.057)	0.132 (0.051)	0.057 (0.043)	0.030 (0.013)
Numeracy score	0.086 (0.023)	0.056 (0.022)	0.076 (0.023)	0.053 (0.021)	0.051 (0.017)	0.035 (0.005)
Will. to take some risk	1.041 (0.048)	0.914 (0.044)	0.424 (0.044)	0.362 (0.041)	0.528 (0.038)	
High school education	0.196 (0.057)	0.135 (0.053)	0.233 (0.057)	0.163 (0.051)	0.221 (0.045)	0.043 (0.010)
Post-secondary education	0.493 (0.062)	0.360 (0.058)	0.405 (0.063)	0.325 (0.056)	0.343 (0.050)	0.112 (0.013)
Number of children	-0.049 (0.016)	-0.044 (0.014)	-0.054 (0.015)	0.021 (0.014)	-0.033 (0.013)	-0.008 (0.003)
Real wealth (net of bus.)	0.080 (0.00685)	0.044 (0.006)	0.042 (0.006)	0.025 (0.005)	0.050 (0.006)	
Net financial assets	0.042 (0.003)	0.038 (0.003)	0.044 (0.004)	0.010 (0.002)	0.025 (0.002)	
Non capital income	0.036 (0.011)	0.022 (0.011)	0.004 (0.011)	0.010 (0.009)	0.025 (0.009)	
Months in hospital	-0.106 (0.065)	0.110 (0.058)	-0.085 (0.065)	-0.053 (0.058)	-0.148 (0.071)	0.017 (0.016)
Above av. maths skills	0.149 (0.045)	0.081 (0.042)	0.061 (0.044)	-0.043 (0.041)	0.038 (0.038)	0.009 (0.009)
Above av. lang. skills	-0.048 (0.046)	0.060 (0.042)	-0.032 (0.045)	0.089 (0.041)	-0.003 (0.038)	0.008 (0.009)
No. of rooms	0.018 (0.009)	0.012 (0.008)	0.011 (0.008)	0.012 (0.008)	0.004 (0.008)	0.005 (0.002)
Owning some books	0.073 (0.052)	0.206 (0.049)	0.013 (0.051)	0.081 (0.047)	0.146 (0.041)	0.044 (0.010)
Denmark	-0.451 (0.079)	-1.736 (0.083)	0.102 (0.076)	-0.669 (0.078)	-0.601 (0.062)	0.006 (0.020)
Germany	-1.833 (0.104)	-1.659 (0.090)	-0.035 (0.086)	-0.161 (0.082)	-2.156 (0.089)	-0.114 (0.021)
Netherlands	-1.624 (0.098)	-1.840 (0.091)	-1.183 (0.104)	-0.387 (0.081)		-0.158 (0.020)
Belgium	-1.575 (0.089)	-1.716 (0.082)	-0.490 (0.081)	-0.757 (0.078)	-1.095 (0.068)	-0.117 (0.012)
France	-1.634 (0.096)	-1.477 (0.084)	-1.195 (0.103)	-0.923 (0.083)	-0.843 (0.068)	-0.145 (0.020)
Switzerland	-1.093 (0.099)	-1.418 (0.091)	0.018 (0.090)	-0.646 (0.091)	-1.607 (0.084)	-0.095 (0.022)
Austria	-2.441 (0.147)	-2.317 (0.128)	-0.922 (0.123)	-0.471 (0.100)	-2.663 (0.133)	-0.226 (0.024)
Italy	-2.336 (0.118)	-2.183 (0.106)	-0.187 (0.090)	-1.628 (0.101)	-3.295 (0.133)	-0.188 (0.021)
Spain	-2.133 (0.126)	-2.302 (0.124)	-1.528 (0.150)	-1.515 (0.110)	-1.813 (0.093)	-0.223 (0.024)
Greece	-2.607 (0.117)	-3.068 (0.129)	-1.727 (0.127)	-2.198 (0.107)	-3.047 (0.109)	-0.154 (0.020)
No. of Obs	18,899	18,899	18,899	18,899	26,698	9,400