

The Influence of Childhood Experiences on Financial Capability in Young Adulthood

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Introduction

U.S. consumers bear an increasing amount of personal responsibility when it comes to financial decisions in today's complex financial market. Transitions to defined contribution plans in place of defined benefit structures have fundamentally changed the way in which Americans plan for retirement. A steady demographic shift towards an older population has begun to place a strain on the social security system, a problem that is increasingly evident in many other developed economies. This trend in shifting responsibilities, from the society to the individual, has been coupled with increased innovation in terms of financial services. Consumers face more and more options with each passing year, and this presents an array of challenges. Not only are Americans responsible for determining how much to save in a given year to provide a lifetime stream of income in retirement, but also they are being asked to choose the most effective allocation of saved assets from a wide array of market options. For younger Americans today, this means that poor financial decisions may be more costly than in years past. Many younger Americans are also starting out in life with significant amounts of personal debt due to an increased reliance on student loans to fund their education (College Board 2014; Haughwout et al. 2015). This is further complicated by the fact that a large body of evidence has been gathered detailing the generally low financial literacy among young adults (Lusardi, Mitchell, and Curto, 2010; Mandell, 2004; 2008).

Concerns over this lack of financial knowledge has engendered a growing public policy response, with the most common solution being financial education. Thirty-one states have implemented financial education in high school (Champlain College Center for Financial Literacy, 2013). The intention of such interventions is to improve outcomes for consumers by

assisting in more effective decision-making. Logically providing more information should present individuals with the tools necessary to make good choices. However, empirical evidence suggests that such behavioral outcomes do not necessarily follow directly from knowledge improvement alone (Johnson Sherraden, 2007). Rather, behavior is necessarily complex and is influenced by numerous other factors aside from knowledge alone (Huston, 2010; Johnson Sherraden, 2007). One aspect that has received more attention in recent years is the process of financial socialization, whereby parental and environmental factors influence behavior.

The present analysis explores the financial capability of young adults with an emphasis on financial socialization received in the home and financial education received at school. Conceptually, it can be considered that financial education programs provided in schools are serving as a substitute for skills that are not being taught in the home. However, it is theoretically possible that such programs are most effective when they are considered as complements to a process of intentional financial socialization.

Literature Review

There is a wealth of literature that attempts to explain human behavior from a multidisciplinary standpoint (See Social Cognitive Theory, Bandura, 2011; Theory of Planned Behavior, Ajzen, 1991; and Trans-theoretical Model of Change, DiClemente Prochaska, 1982; among others), but Tang et al. (2015) highlight some consistent principles that seem to run throughout the various theories. Specifically, Tang et al. (2015) noted that what people think has an influence on how they behave, knowledge is an important but insufficient condition

for behavioral change, and that social and psychological factors are significant influencers of behavior.

Childhood economic conditions influence many outcomes later in life, including human capital formation, economic mobility, and health. Parent and caregiver behaviors provide a model for decision-making in early adulthood (Danes, 1994; Danes, Huddleston-Cases, Boyce, 1999). Parents and caregivers also serve as an important support system for many young adults as they become more independent. Previous studies have noted a positive association between parental financial knowledge and that of their children (Lusardi et al., 2010). One significant concern that stems from a reliance on parents as the primary providers of financial education is the fact that parents are often lacking in critical financial knowledge or skills themselves. Evidence from earlier studies indicates that many parents do not actively discuss financial matters with their children (Lyons Hunt, 2003) or that many parents did not believe that teaching about personal finances was their responsibility (TIAA-CREF Institute, 2001). This certainly does not mean that parental influences are not a significant factor to consider from a financial education standpoint, as a great deal of parental teaching is implicit.

Prior studies have highlighted a number of critical connections between parental behaviors and their children's preferences and behaviors (Dohmen et al., 2006; Xiao et al., 2011). The literature on associations between parental influences on financial behavior is less robust, though this topic has received more attention in recent years. Jorgensen and Savla (2010) noted a significant association between perceived parental influences on attitude, and an indirect effect of perceived parental influences on financial behavior, mediated by attitude. Campenhout (2015) reviews the state of the literature on parental socialization, noting that

whereas education initiatives and literacy programs often stress the importance of starting young, programs tend to do a poor job of connecting with the development process and parents are often not included as a core component of such curricula.

Data

We use the Panel Study of Income Dynamics bi-annual Transition to Adulthood Supplement (TA) from 2005-2013. We gather measures of financial capability among young adults graduating in years and states where financial education mandates were implemented. TA data also includes a rich set of individual-level demographic variables as well as the opportunity to follow the sample back to their childhood using the Childhood Development Supplement (CDS). The CDS sample is drawn from the children of the original PSID sample who were 0-12 years old in 1997. CDS includes information about childhood environment that we use to measure the differential impact of financial education by parent characteristics and childhood financial circumstances. Because TA respondents age into the survey sample at age 18 and age out of the sample at age 28, we decide to look at a snapshot of young adults rather than exploiting the panel nature of the data. We construct a cross-section of these young adults using the most recent observation available when they are 20-25 years old.

The State Mandated Financial Education Database constructed by Urban, Schmeiser, Collins (2015) serves as the source for the state-level policy variables that are used in this study. The data include information on state financial education mandates in all 50 states from 1970-2014. The data include graduation requirements, optional participation, type of course, testing, and indicator of local or district control. We merge the individual-level

data from the TA by state of residence and high school graduation year to the corresponding financial education mandates. Our sample includes individuals who graduated between 2002-2012 in states with and without mandates. Figure 1 illustrates the rapid adoption of personal financial education requirements for high school graduation over this time period. Figure 2 provides a closer look at the implementation of financial education mandates during the time period that we investigate in this study. The period that we study is of particular interest because it saw rapid adoption of personal finance requirements.

[Figure 1 here] [Figure 2 here]

Measures

The key dependent variable in our analysis is financial capability. We follow the definition set out by the President's Advisory Council on Financial Capability of Young Americans: "Financial capability means having the requisite knowledge, skills and access to manage financial resources prudently and effectively". With this definition in mind, we construct a financial capability index from five questions about ability to manage money ("On a scale of 1 to 7, where 1 means "Not At All Well" and 7 means "Extremely Well", How good are you at managing money?") and financial responsibilities ("How much responsibility do you currently take for" (1) "Paying your bills", (2) "Earning your own living", (3) "Paying your rent or mortgage", and (4) "Managing your money"). Table 1 shows the average inter-item covariance and Cronbach's alpha for the scale. The scale has an average inter-item covariance of 0.517 and Cronbach's α of 0.717, just below the 0.80 threshold recommended in the measurement literature.

[Table 1 here]

To explore the impact of high school personal finance requirements on financial capability in young adulthood, we construct an indicator variable that equals one if an individual graduates in a state on or after the year that high school financial education is mandated. We also explore whether childhood environmental conditions like economic strain and parent's education level moderate the effect of high school financial education on financial capability in young adulthood. Economic strain is defined as any incidence of a range of economic problems including sold possessions or cashed in life insurance, postponed major purchases, postponed medical care, borrowed money from friends or relatives, applied for government assistance, filed for or taken bankruptcy, and fallen behind in paying bills. Both maternal and paternal education level are included in our analysis to explore whether parents' education moderates the effect of financial education.

Sample Characteristics

[Table 2 here]

Table 2 details summary statistics for our sample of young adults including demographic characteristics and personal finances. There are significant differences in age, marital status, student status, high school graduation, race, banking status, car ownership, help paying bills, and childhood economic strain. We do not observe all demographic characteristics for every member of our sample. To deal with this, we exclude individuals who do not report their mother's education level. Father's education level is unreported for more than 25% of our sample which leads us to only control for mother's not father's education in our model.

Parent education level is highly correlated in our sample, $\rho = 0.779$, so we do not expect the bias from omitting father’s education to impact our results.

Empirical approach

In this paper, we exploit exogenous variation in state financial education mandates to identify the causal effect of high school financial education on financial capability in young adulthood. The treatment group is composed of all students who graduate in a year and state where a mandate requiring personal financial education for graduation is implemented. The comparison group is composed of individuals who live in states that never have a financial education mandate and students who graduate in a year prior to the implementation of a mandate. We use the following specification to estimate the impact of state financial education mandates:

$$Y_{iast} = \beta_0 + \beta_1 \text{Personal Finance Mandate}_{sa} + \beta_2 X_{sa} + \beta_3 X_{it} + \delta_a + \delta_s + \delta_t + \epsilon_{iast}$$

Y_{iast} is the score on the financial capability index for individual, i , of state, j , who graduated in year, a , surveyed in year, t . The financial capability index is standardized by the control group mean and standard deviation. Standardizing in this way allows our estimate to be interpreted as the difference in standard deviation units between the treatment and comparison group (Kling et al. 2007). $\text{Personal Finance Mandate}_{sa}$ indicates that an individual resides in state, s , in graduation year, a , where personal finance is a graduation requirement. X_{it} is a vector of individual-level demographic characteristics that we include as controls, including marital status, employment status, whether they have children, education level, race, gender, whether they are banked, childhood economic conditions, and parent’s education level. We also include graduation state, graduation year, and survey year fixed effects to

control for unobserved state and time invariant characteristics that may influence financial capability.

Results

Our preliminary results reveal a positive and statistically significant impact of mandated financial education on financial capability in young adulthood. Table 3 Column (1) shows the estimate for our baseline with graduation state and year fixed effects. We find an increase of 0.21 standard deviations for those who graduate with a financial education requirement. In Column (2), we include a rich set of control variables for demographic characteristics, personal finances, childhood economic experiences, and parental education. Including these covariates reduces our estimate by 0.03 standard deviations, but the effect remains positive and statistically significant. In Column (3) we estimate the effect with our fully specified model that includes state and year fixed effects, a rich set of covariates, age dummies, and survey wave dummies. Financial capability is 0.195 standard deviations higher for individuals who are required to take a financial education course to graduate from high school. Our previous analyses show the effect of financial education for all students, both graduates and non-graduates. In Column (4) of Table 3 we restrict the sample to only high school graduates. The estimate is the effect of graduating from high school and fulfilling the financial education requirement on later life financial capability. Under this sample restriction, we estimate the treatment on the treated effect (TOT) of financial education requirements on financial capability for these young adults. We find that students who graduate with a binding mandate increase their financial capability by 0.291 standard deviations relative to

the comparison group.

[Table 3 here]

Table 4 details the results from the fully specified model for each component of the financial capability index. All estimates of the effect of financial education are positive for these items. However, estimates for ability to manage money, responsibility for managing money, responsibility for earning a living, and responsibility for paying rent are statistically insignificant. The only statistically significant impact of financial education is on responsibility for paying bills. Individuals who participate in a financial education course in high school take on significantly more responsibility for paying their bills than those who do not take the course.

[Table 4 here]

Heterogenous effects

Finally, we explore heterogenous effects of financial education on financial capability in young adulthood by childhood financial circumstances, gender, race, and parent's education level. Table 5 Column (1) illustrates that children who underwent economic strain during their childhood have higher financial capability. There is a significant differential impact of financial education on financial capability for individuals whose families dealt with these economic strains.

[Table 5 here]

Next, we analyze whether there is a heterogenous effect of financial education for those who saved as a child. Results are presented in Column (2). We find that the interaction is

small and statistically insignificant. In Column (3), we analyze whether financial education has a differential effect by race. Although we find that being white reduces your financial capability, we do not find an interactive effect with financial education. In Column (4), we find that women are not differentially impacted by financial education. Column (5) shows individuals who grow up with fathers who do not graduate from high school have 0.521 standard deviations lower financial capability in young adulthood. We find similar results for individuals who grow up with mother's who do not graduate from high school. Their financial capability is 0.628 standard deviations lower.

Discussion

The results from this study provide evidence that mandated personal finance education positively impacts financial capability in young adulthood. We add to a growing literature that shows that high school financial education does have positive effects on young adults. However, this study and others that have explored the impact of high school financial education do not provide evidence of the long-term impact of these mandates. Future work should explore outcomes later in adulthood.

We also find that the positive impact of high school personal finance courses is moderated by childhood environment including experience of economic strain and parent education level. Children who experience a disadvantage in their childhood environment have a negative differential effect of financial education. This finding suggests that high school financial education does not help these students overcome childhood disadvantages that impact financial capability.

This study provides evidence that financial education may not serve as a means for putting students who experience disadvantage and less financial socialization at home, measured by economic strain and parent education level, on the same trajectory of financial capability in young adulthood as their peers. This suggests that financial education that occurs at earlier ages that continues through their schooling years may be better suited for fostering a baseline level of financial education across socioeconomic backgrounds.

Along with exploring long-term impacts of financial education and financial socialization at school beginning earlier in childhood, future research should explore objective financial well-being outcomes. Although it is important to understand perceived financial capability, the present analysis ignores the financial decisions that are made including decisions to borrow, save, and plan for the future.

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Appendix

Table 1: Constructing the financial capability index

Item	Average inter-item covariance	Cronbach's α
Ability to manage money	0.769	0.805
Responsibility for earning own living	0.621	0.683
Responsibility for paying rent/morgage	0.437	0.594
Responsibility for paying bills	0.372	0.624
Responsibility for managing money	0.387	0.579
Financial Capability Index	0.517	0.717

Figure 1: State Financial Education Mandates: 1970-2014

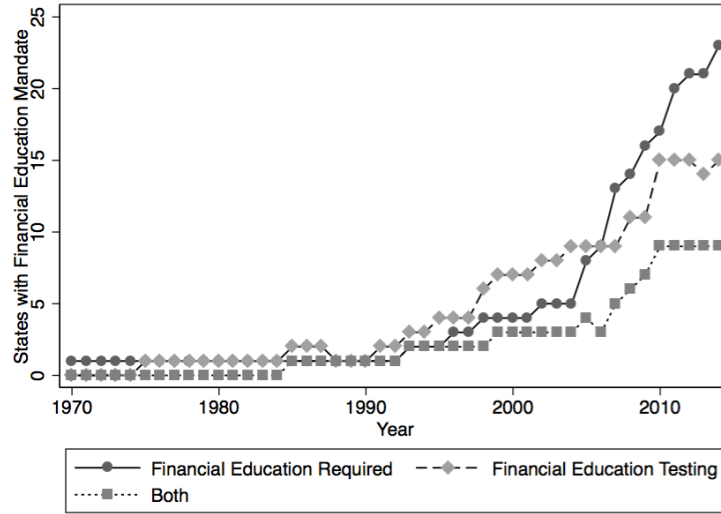


Figure 2: State Financial Education Mandates: 2002-2012

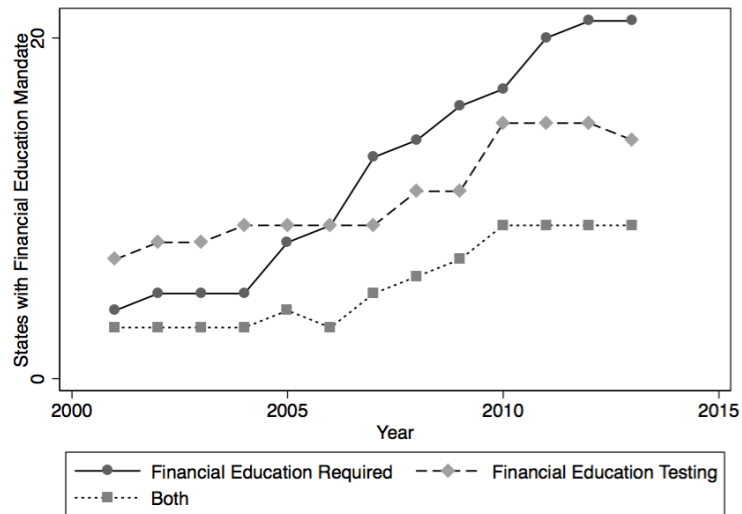


Table 2: Differences in Characteristics by High School Financial Education Mandate

	No Requirement	Requirement	Diff.	Obs
Age	23.243	22.309	0.934***	1968
Married	0.117	0.068	0.049***	1968
Cohabiting	0.169	0.184	-0.015	1968
Employed now	0.647	0.622	0.025	1968
Parent	0.284	0.273	0.011	1967
Some college	0.586	0.556	0.031	1968
Full-time student	0.241	0.288	-0.048**	1968
High School Graduate	0.669	0.585	0.084***	1968
White	0.537	0.470	0.067***	1968
Female	0.473	0.451	0.022	1968
Banked	0.791	0.743	0.048**	1968
Own a car	0.471	0.352	0.119***	1968
Saves for retirement	0.121	0.116	0.005	1968
Receive help paying rent	0.161	0.172	-0.011	1968
Receive help paying bills	0.353	0.405	-0.051**	1968
Have student loans	0.397	0.413	-0.017	1968
Econ. strain as child	0.703	0.750	-0.047**	1968
Father \downarrow HS	0.109	0.108	0.001	1414
Mother \downarrow HS	0.111	0.089	0.023	1968
Observations	1968			

Table 3: Estimated Effect of State Mandated Financial Education on Financial Capability

	(1)	(2)	(3)	(4)
	Outcome:	Financial Capability Index		HS Grads Only
	β / SE	β / SE	β / SE	β / SE
Graduation Requirement	0.206** (0.097)	0.180* (0.108)	0.195* (0.108)	0.291** (0.140)
State and Year fixed effects	Yes	Yes	Yes	Yes
Controls	No	Yes	Yes	Yes
Age dummies	No	No	Yes	Yes
Survey wave dummies	No	No	Yes	Yes
Observations	1839	1327	1327	902
R^2	0.103	0.265	0.280	0.258

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Estimated Effect of State Mandated Financial Education on Each Financial Capability Scale Item

	(1)	(2)	(3)	(4)	(5)
	Ability	Responsibility	Resp. earn	Resp. rent	Resp. bills
	β / SE	β / SE	β / SE	β / SE	β / SE
Graduation Requirement	0.143 (0.155)	0.047 (0.088)	0.063 (0.108)	0.234 (0.180)	0.260* (0.141)
State and Year fixed effects	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Age dummies	Yes	Yes	Yes	Yes	Yes
Survey wave dummies	Yes	Yes	Yes	Yes	Yes
Observations	1413	1413	1413	1331	1395
R^2	0.056	0.138	0.316	0.248	0.263

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Heterogenous Effect of State Mandated Financial Education on Financial Capability

	(1)	(2)	(3)	(4)	(5)
	β / SE	β / SE	β / SE	β / SE	β / SE
Graduation Requirement=1	0.399*** (0.152)	0.234* (0.131)	0.167 (0.125)	0.265** (0.113)	0.271** (0.113)
Econ. strain as child=1	0.174** (0.069)				
Graduation Requirement=1 \times Econ. strain as child=1	-0.248* (0.130)				
White=1		-0.124 (0.081)			
Graduation Requirement=1 \times White=1		-0.045 (0.128)			
Female=1			-0.125** (0.062)		
Graduation Requirement=1 \times Female=1			0.095 (0.119)		
Father ; HS=1				0.394*** (0.107)	
Graduation Requirement=1 \times Father ; HS=1				-0.521** (0.203)	
Mother ; HS=1					0.048 (0.123)
Graduation Requirement=1 \times Mother ; HS=1					-0.628** (0.249)
State and Year fixed effects	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Age dummies	Yes	Yes	Yes	Yes	Yes
Survey wave dummies	Yes	Yes	Yes	Yes	Yes
Observations	1327	1327	1327	1327	1327
R^2	0.304	0.302	0.302	0.306	0.307

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.