

What Have We Learned About the Effects of Financial Education on Household Financial Decisions?



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June 2011

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...and What *Haven't* We Learned?



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Background

- General perception: American households make poor financial decisions
 - Save “too little” and borrow “too much”
 - Invest “unwisely”
 - Fall prey to pernicious financial gimmicks and outright scams
 - Heightened concern with shift to DC plans
- Possible (likely?) cause: financial illiteracy
- Possible solution: financial education
 - In schools
 - In the workplace
 - In communities

Background

- Efforts to promote financial education by numerous government & private organizations
 - US Department of Labor launched national pension education program in 1995 to promote retirement security
 - Financial Literacy and Education Improvement Act, 2003, created the Financial Literacy and Education Commission, which coordinates efforts of 20 federal agencies
 - Treasury Department created the Office of Financial Education in 2002

Background

- Result:
 - Adoption and expansion of secondary education requirements in many states
 - Widespread adoption (particularly among large companies) of financial education programs for employees
 - Community-based programs
 - Picked up steam in mid-1990s
- Possible macroeconomic benefit: raising national saving rate
- *Has it worked?*

Financial Education in the Workplace

□ Early efforts:

- Bernheim and Garrett (1996, published 2003)
- Bernheim, Bayer, and Scholz (1996, published 2009)

□ Bernheim and Garrett

- Household survey fielded by Merrill Lynch
- Course measure of workplace financial ed
- Focus on “intent to treat” effect
- Availability appears to be remedial
- Availability increases median saving rate by 28%; largest proportional effect occurs at lower end of saving distribution; 12 percentage point increase in 401(k) participation rates

Financial Education in the Workplace

□ Bernheim, Bayer, and Scholz

- Panel survey of employers fielded by KPMG
- Richer info on nature of financial education (type, frequency) and other pension plan characteristics
- No data on assets outside 401(k)
- Firms tend to establish or enhance financial education when participation is low (remedial)
- Positive effects are concentrated among firms that offered *frequent seminars*, and among *non-highly compensated* employees
- NHC participation rates and contribution rates increased by 12 and 1 percentage points, on bases of 59% and 3%, respectively

Financial Education in the Workplace

- Duflo and Saez (2003)
 - Randomized field experiment involving employees of a university
 - Some employees in some departments incentivized to attend benefits fair (stated purpose: increase participation in TDA)
 - After 11 months, 20% increase in TDA participation among incentivized group (but small in absolute terms)
 - Effect was roughly the same for untreated individuals in the same departments, which underscores the importance of social effects

Financial Education in the Workplace

- Additional observations concerning Duflo and Saez
 - The effects are small (in absolute size), but:
 - The TDA was a supplementary plan
 - This was a one-off intervention (not frequent)
 - Large in proportional terms
 - Importance of social effect deserves emphasis
 - Raises questions about whether effects are truly informational
 - Explains how the frequency of seminars could be important even if particular individuals only attend once

Financial Education in the Workplace

- General corroboration:
 - Clark and Schieber (1998): 19 firms
 - Lusardi (2004): corroboration with HRS
 - Clark and d'Ambrosio (2003): effects of financial education on goal setting and expectation
 - Lusardi and Mitchell (2006) positive wealth effect, mainly for those of lower socioeconomic status
 - Anderson, Uttley, and Kerbel (2006) document that a workplace financial education intervention improved 26 specific actions (writing down goals, assessing asset allocation, etc.)
 - Garman, Kim, Kratzer, and Brunson (1999): positive effects on “financial wellness”
 - Kim (2007): impact on personal finances
- There is some evidence that financial education in the workplace improves knowledge (Clark and D'Ambrosio, 2008, Clark and Morrill, 2010)

Financial Education in the Workplace

□ Some contrary evidence

- Tend to be attended by those who “need” it the least (Mandell, 2008). But others may be influenced through peer effects.
- Many workers attend only once (Clark and D’Ambrosio, 2008). But frequent seminars may establish a norm through social interaction.
- Only a minority change their goals (Clark and D’Ambrosio, 2008). But may change perception of what is necessary to achieve those goals.
- Changed intentions often do not translate into action (Clark and D’Ambrosio, 2008, Choi, Laibson, Madrian and Metrick, 2006, and Madrian and Shea, 2001).

Financial Education in the Workplace

- A notable shortcoming of the literature:
 - Financial education (even “seminars”) is highly heterogeneous
 - How does content, style, etc. relate to the effect on behavior?
 - Most of what has been written about this involves either case studies or extrapolation from other evidence on learning
- Some recent work emphasizes the importance of reaching employees at “teachable moments” (e.g., eligibility for plan or match, transition to retirement)
 - Lusardi, Keller, and Keller (2008)
 - Clark and Morrill (2010)

High School Financial Education

- Bernheim, Garrett, and Maki (2001)
 - Household survey fielded by Merrill Lynch
 - Measures effect of state mandates (thereby avoiding the problem that taking a course is endogenous)
 - Diffs-in-diffs design, based on cohort and state in which attended high school, using the fact that different states introduced different mandates at different points in time
 - Key findings:
 - rate of saving as adult is 1.5 percentage points higher for those exposed to financial education mandates
 - wealth is also significantly higher
 - effect is concentrated in those whose parents were not frugal
 - no effect for economic education

High School Financial Education

- Finding disputed by Cole and Shastry (2009)
 - Attempted replication using Census data (advantage: *much* larger sample)
 - Found no significant effects of state-mandated financial education on saving behavior
 - Census does not contain the right variables
 - State of birth instead of state attended high school
 - No measure of flow saving rate
 - No measure of accumulated assets (substitutes partial measure of capital income)
 - No assessments of parents' frugality

High School Financial Education

- ❑ Other evidence relates financial education to short-term outcomes – scores on tests, and some behavioral measures – rather than adult behavior
- ❑ Evaluations of the National Endowment for Financial Education (NEFE) High School Financial Planning Program (HSFPP)
 - Boyce and Danes (1998): significant short-term effects on money management
 - Danes, Huddleston-Casas, and Boyce (1999): short-term increases in *self-reported* knowledge and saving rates
 - Danes (2004): As little as 10 hours of exposure to curriculum led to significant improvements in financial behavior and understanding measured immediately and after 3 months
- ❑ Walstad, Rebeck, & MacDonald (2010): financial education makes a positive and significant contribution to a high school student's knowledge of personal finance

High School Financial Education

- ❑ But the evidence is not uniform:
- ❑ Mandell (2006) found little positive impact of a particular high school personal finance course on post-high school financial behavior after 1 to 5 years; no improvement with age or experience
- ❑ Mandell (2001, 2002, 2004, 2006, 2009) found no effect that those who took a semester-length course in money management or personal finance are more financially literate than those who did not
 - Analysis the Jump\$tart Coalition's biennial national financial literacy surveys administered to high school seniors
 - In some cases those students did **worse** – selection effects?
 - Performance is boosted by about 2 percent as the result of having trained teachers teaching *required* semester-long courses in personal finance

High School Financial Education

- Peng, Barthomomae, and Cravener (2007):
 - Minimal impact of high school financial education on learning outcomes
 - Financial education in college (when information is more relevant) has a greater impact

High School Financial Education

- Potential interpretation: the mechanism by which high school financial education affects behavior may not involve financial literacy per se.
- Alternatives:
 - Greater comfort with financial matters (self-perceived knowledge)
 - Better knowledge of how to proceed with a financial decision (e.g., what questions to ask)
 - Indoctrination
- Mandell (2009):
 - Jump\$tart national sample of full-time undergraduate college students designed to measure financial literacy and financial behavior
 - Little evidence showing that full-time high school (or college) courses in personal finance increase financial *literacy*.
 - Clear evidence that such courses change financial *behavior*.

Other Venues for Financial Education

- Financial education during college:
 - Bowen and Jones (2006) evaluated an intervention regarding credit card and money usage
 - Found significant improvements in knowledge, and changes in (or plans to change) credit card use
- Individual Development Accounts (IDAs) for the poor:
 - Schreiner, Clancy, and Sherraden (2002): consecutive educational sessions in conjunction with IDAs are effective in stimulating saving
 - Shockey and Seiling (2004): financial education linked to improved confidence, and hence to behavioral changes

Other Venues for Financial Education

□ Credit counseling

- Elliehausen, Lundquist, & Staten (2007): compared to non-counseled borrowers, more than half of counseled borrowers improved bank card risk scores and the majority reduced the number of accounts, total debt, and delinquencies
- Hirad & Zorn (2002): Borrowers who received counseling prior to home purchase, on average, had a 90-day mortgage delinquency rate that was 19 percent lower than non-counseled homeowners

What *Haven't* We Learned?

- ❑ Does financial education make people better off? Does it improve welfare?
- ❑ Preconceptions on this issue are ingrained:
 - Saving more is good
 - Balanced portfolios are good
 - Education leads to a better understanding of alternatives, and hence to better choices
- ❑ But there are other possibilities: education influences behavior because it involves...
 - Advertising/indoctrination
 - Social pressure, brow-beating, shame, and/or embarrassment
 - Psychological anchor

Preconceptions concerning saving

- ❑ There is a strong preconception that people do not save “enough” for retirement
- ❑ That preconception is (apparently) bolstered by academic research
 - Bernheim (1993, 1994, 1995, 1996): Merrill Lynch Baby Boom Retirement Index, showing that baby boomers save one-third of the amount required to achieve a standard of living in retirement commensurate with their standard of living before retirement
 - Warshawsky and Americks (2000): savings shortfall based on calculations with Quicken Financial Planner
- ❑ Of course, not everyone agrees
 - CBO (1993): baby boomers better prepared than parents
 - Scholz, Seshadri, Khitatrakun (SSK, 2006): rates of saving easy to rationalize in a life cycle model

Preconceptions concerning saving

- The SSK argument reflects a general point:
 - Unless there is a violation of WARP (Arrow's version), behavior is consistent with coherent preferences
 - A single choice (e.g., of a lifetime consumption profile) cannot, by itself, violate WARP
 - In the framework of revealed preference, low saving is simply interpreted as impatience
 - Who are we to say that the individual's preferences are mistaken?
 - Isn't this like saying that fans of rap music would be better off listening to Mozart?
- So how do we determine whether financial education make people better off?

Financial Education and Welfare in Standard Economics

- Within standard economics, financial education can in principle increase welfare by providing information
- The informational role of financial education in the standard framework is limited
 - Encompasses the acquisition of factual information
 - Does not encompass conceptual learning – i.e., how to pose and solve a problem

Financial Education and Welfare in Standard Economics

- There is considerable evidence concerning gaps in financial information
 - Rules and benefits associated with pensions (Gustman and Steinmeier, 2004, Gustman, Steinmeier, and Tabatabai, 2008)
 - Social Security benefits (Gustman and Steinmeier, 2008, Helman, VanDerHei and Copeland, 2007; see, however, Bernheim, 1988, 1989)
 - Poor information concerning pensions and Social Security concentrated among low-income households, minorities, women, those with low education and assets (Gustman and Steinmeier, 2004, 2005)
 - Gaps in knowledge about terms of adjustable rate mortgages (Bucks and Pence, 2008)

Financial Education and Welfare in Standard Economics

- Even so, this is probably not the right way to think about the welfare effects of financial education
 - Not at all obvious that financial education is primarily about provision of factual information
 - In any case, the information in question is already easily available – the issue is that people aren't paying attention to it (a non-standard concern)
 - Not clear from the foregoing evidence that people lack the relevant information when they actually make their decisions

Financial Education and Welfare in Behavioral Economics

- ❑ Making welfare statements in behavioral settings is more difficult, however...
- ❑ From the perspective of behavioral economics, we may be able to make sense of the claim that financial education counters the common tendency to save “too little”
- ❑ A possible argument:
 - People tend to overconsume because of “present bias” in preferences (e.g., Laibson, 1997, O’Donoghue and Rabin, 1999)
 - Inducing them to save more (whether through incentives, pressure, or psychological tricks) is therefore welfare-improving

Financial Education and Welfare in Behavioral Economics

Problems with that argument:

1. The welfare standard is arbitrary

An individual chooses between eating x or y at time t

He would choose x if choosing at time t

He would choose y if choosing at time $t-1$

Why is y the “correct” choice?

Are people “present biased”? Or do they only fully appreciate experience in the moment?

2. There is actually very little evidence that “present bias” causes people to “undersave” according to “long-run” preferences

External commitment devices are surprisingly scarce

A time-inconsistent individual can achieve “self-control,” e.g. through the use of “personal rules” (Ainslee 1975, 1992, Bernheim, Ray, & Yeltekin 2011)

Financial Education and Welfare in Behavioral Economics

- Another approach: In behavioral welfare economics, one can make a case for respecting one choice over another when the second involves “characterization failure” while the first does not (Bernheim and Rangel, 2009)
 - Characterization failure occurs when an individual makes a choice based on an incorrect characterization of his opportunity set
 - Example: options are x and y
 - In setting A, the individual construes the options as x and y , and chooses y over x
 - In setting B, the individual construes the options as x as z , and chooses x over y
 - Only the first choice is a suitable guide for a policy maker choosing between x and y on the individual’s behalf

Financial Education and Welfare in Behavioral Economics

- To make the case in this context, we must establish two propositions:
 - Decisions in the “uneducated frame” suffer from characterization failure
 - Financial education cures characterization failure
- There is considerable evidence for the first proposition
- The second is more difficult to establish, and there are reasons to question its validity

Characterization failure in the “uneducated frame”

- Fact #1: People appear to lack the knowledge and skills necessary for sound life-cycle financial planning
 - Poor scores on questions concerning compound interest, inflation, asset diversification, etc. (Bernheim 1995, 1998, Mandell, 2004, Hilgert, Hogarth, and Beverly, 2003, Agnew and Szykman, 2005, Moore, 2003, Lusardi and Mitchell, 2006, 2007,...)
 - Problem: what is the right metric for measuring a shortfall in financial literacy? How do we know it's important? What does a “C” mean?
 - One answer: see whether differences in financial literacy have large effects on behavior

Characterization failure in the “uneducated frame”

□ Fact #1, cont'd

- Financial literacy is strongly correlated with saving and other financial decisions (Bernheim, 1988, Hilgert, Hogarth, and Beverly, 2003, Lusardi and Mitchell, 2007, Stango and Zinman, 2007, van Rooij, Lusardi, and Alessie, 2007, Kimball and Shumway, 2007)
- Efforts to establish causality through the use of instruments are not entirely convincing (Bernheim, 1988, Lusardi and Mitchell, 2007)
- For example, Lusardi and Mitchell's use of financial literacy when young as an instrument deals with reverse causation, but not common causation
- Still, the gaps in financial literacy seem severe

Characterization failure in the “uneducated frame”

- ❑ Financial illiteracy would not necessarily lead to characterization failure if people made use of tools and qualified advice. However:
- ❑ Fact #2: Few people make use of tools and qualified financial advice
 - Reliance on friends, family, and neighbors is high; use of tools and experts is low – “blind leading the blind” (Bernheim, 1998, Lusardi, 2003, Hone, Kubik, and Stein, 2007, Brown, Ivkovich, Smith, and Weisbenner, 2008)
 - The pattern is especially pronounced for those with low financial literacy (Van Rooij, Lusardi, and Alessi 2007)

Characterization failure in the “uneducated frame”

- ❑ Financial illiteracy would not necessarily lead to characterization failure if people periodically invested in thoughtful decision making. However:
- ❑ Fact #3: A large fraction of the population engages in no serious life-cycle financial planning
 - 30% of HRS respondents ages 51 to 56 have given no thought to financing retirement (Lusardi and Mitchell, 2007)
 - Only 18% of HRS respondents were able to develop a savings plan and stick to it (Lusardi and Mitchell, 2006)
 - Only 36% of workers have tried to determine how much they need to save for a comfortable retirement, and many of those could not give a figure (Yakoboski and Dickemper, 1997)
 - Planning is correlated with saving (Lusardi, 1999, 2003, Lusardi and Mitchell, 2007) , but again, causality is difficult to establish

Does financial education cure characterization failure?

- It's tempting to argue indirectly:
 - We know (?) higher saving is better because people save more when they understand their decisions better, use tools and/or experts, and engage in deliberate decisions (through planning)
 - Financial education induces people to save more
 - Therefore, financial education must be beneficial
 - But that argument is suspect, because it does not show that financial education increases saving by curing characterization failure (as opposed to indoctrinating, pressuring, etc.)

Does financial education cure characterization failure?

- We simply do not know whether financial education affects behavior by curing characterization failure, or through some other channel
 - There are questions about whether high school financial education in particular improves financial literacy, and demonstrations that it changes behavior without such improvements (Mandell, 2009)
 - Social influences seem to be critical (Duflo and Saez, 2003)
 - Financial education may affect behavior by influencing *subjective* perception of knowledge (Shin et. al., 2009)

Does financial education cure characterization failure?

- An intriguing possibility: demonstrate that financial education cures characterization failure by showing that it reduces the frequency of financial mistakes
 - Caveat: for this approach, a “mistake” must be defined by dominance
 - Example: Mottola and Ulkus (2008) argue that shifting to professionally managed investment accounts reduces mistakes such as
 - investing too much or too little in the stock market
 - not holding well-diversified portfolios
 - But either pattern can be rationalized by preferences or beliefs
 - A better example: Choi, Laibson, Madrian (2005) – “dollar bills on sidewalk” associated with matching provisions

Concluding remarks

- What we know: financial education (of various kinds) gives us a lever over behavior
- What we don't know: **why**
 - Does not appear to be a matter of financial literacy or knowledge (at least not exclusively)
 - May involve pressure, indoctrination, anchoring...
 - May involve comfort, self-confidence, perceived knowledge
 - Transmitted through social networks
- What we also don't know: whether there is an objective sense in which it makes people better off
- Important areas for future research:
 - Identify the mechanisms
 - Determine the effect on objective mistakes (dominated choices)