



Research Priorities

*Results of the National Research Symposium on
Financial Literacy and Education*

Washington, DC • October 6-7, 2008



*Convened by the U.S. Department of the Treasury
and U.S. Department of Agriculture on behalf of the
Financial Literacy and Education Commission*

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Contents

Symposium Overview.....	1
Symposium Process	1
Ten Recommended Research Priorities	2
Topic Area Group Summaries	
Behavior Theory Application	3
Consumer Economic Socialization	6
Financial Education and Program Evaluation.....	10
Financial Risk Assessment	15
Selected References by Topic Area	19
Symposium Participants (Appendix A)	23
Symposium Agenda (Appendix B).....	24
Recommended Research Priorities by Topic Area (Appendix C)	25

SYMPOSIUM OVERVIEW

The U.S. Department of the Treasury and U.S. Department of Agriculture convened the National Research Symposium on Financial Literacy and Education on October 6-7, 2008 in Washington, DC. Twenty-nine experts from the fields of behavioral and consumer economics, financial risk assessment and financial education evaluation were invited to summarize existing research findings, identify gaps in the literature, and define and prioritize questions for future analysis. Participants included academics from public and private universities and scholars and administrators from non-profit organizations and government officials. Numerous individuals also attended as observers.

The goal of the symposium was to provide a viewpoint on academic research priorities that could inform outcomes-based financial education, relevant public policy, and effective practices leading to personal and family financial security. The symposium is one of the calls to action in the federal government's *Taking Ownership of the Future: The National Strategy for Financial Literacy* (2006) developed by the 20-agency Financial Literacy and Education Commission.

This document summarizes the proceedings of the symposium and as such it reflects the views solely of the participants cited.

SYMPOSIUM PROCESS

The two-day symposium featured four discussion groups on the topics of behavior theory application, consumer economic socialization, financial education and program evaluation, and financial risk assessment. The identification of these topics was informed by the *Handbook of Consumer Finance Research* (J. Xiao, ed., 2008, New York, NY: Springer). Prior to the symposium, each participant aligned with a topic and prepared a brief paper summarizing research related to that particular area. A group facilitator for each topic was responsible for summarizing key themes from the individual papers and preparing a topic area summary.

On day one, participants presented key research findings in their assigned topic area and outlined the most pressing research gaps. A discussion with the whole group followed. On day two, topic area groups met separately to prioritize key research questions in their respective topic area. The decisions made by each team were reported to the whole group. The total group then discussed and agreed upon ten recommended research priorities.

TEN RECOMMENDED RESEARCH PRIORITIES

Participants identified the following ten most important research questions that could inform outcomes-based financial education, relevant public policy, and effective practice leading to personal and family financial security.¹

1. What are the core principles of personal finance that every consumer needs to know, and what evidence exists that current standards are effective in helping people reach their financial goals?
2. What are reliable and valid measures of the success for financial education, and what measures should be used to document success for various financial topic areas and target audiences?
3. What is the most effective mix of financial education, decision framing, and regulation to improve financial well-being?
4. How do socialization factors, including conflicting messages, influence and affect household financial behavior?
5. How do financial socialization and education processes vary by gender, life stage, race, socioeconomic status, education and ethnicity?
6. How do financial education, financial socialization, and psychological factors interact, and how does this interaction affect financial well being?
7. How do people perceive and manage risk, and what are their financial risk tolerances and capacities?
8. How do economic shocks alter risk exposure and risk management choices both at the individual and household levels?
9. What are effective coping strategies and behaviors during times of financial crisis?
10. How do relevant theories of financial behaviors and attitudes apply to various subgroups (i.e., age, socioeconomic status and ethnicity) and contribute to improving financial well-being currently and over time?

¹This National Research Symposium on Financial Literacy and Education was convened by the U.S. Department of the Treasury and the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service on October 6-7, 2008 in Washington, DC. The symposium was a *Call to Action 11.1* in the **Taking Ownership of the Future: The National Strategy for Financial Literacy** (2006) developed by the 20-agency Financial Literacy and Education Commission. To access this report, go to www.treasury.gov/ofe and click on the Financial Literacy and Education Commission link.

SUMMARY -- BEHAVIOR THEORY APPLICATION

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What do we already know from the existing literature?

Factors associated with financial behaviors

Researchers from diverse fields contributed to the literature of consumer financial behavior. Among them, consumer economists conducted research to identify factors associated with money management, debt and saving behaviors (see Xiao, 2008a, for examples).

Economic psychologists discovered behavior patterns that have implications for consumer financial behaviors. The findings include: contexts are important in decision making; decisions tend to be “local”; intention does not mean action; choice can be overwhelming; regulations, policies, and choice architecture need to consider behavioral patterns of consumers to be effective (Barr, et al., 2008; Bertrand, et al., 2006).

Factors associated with retirement saving and asset ownership behaviors are both economic and psychological (DeVaney & Zhang, 2001; DeVaney, et al., 2007). A qualitative study sponsored by the Filene Research Institute revealed several saving metaphors, such as growing, harvesting, sacrificing, and protecting, used by low- and middle-income consumers (Maynard & Zinsmeyer, 2007).

Financial education has positive impacts on consumer financial behaviors (Hilgert et al, 2003). Money management patterns are diverse among consumers (Hogarth et al, 2002). Workplace financial education contributes to positive financial behavior changes (Kim, 2007; Kim et al., 2005).

Evidence suggests that consumer financial behaviors contribute to their economic and general well-being (Kim, et al., 2003; Xiao, et al. forthcoming).

Applying behavior theories to financial behaviors

The purpose of applying behavior theories to financial behavior is to gain a better understanding of consumer behaviors in order to improve consumer financial education efforts and economic well-being (Xiao, 2008b). Several behavior theories are applied in this field (Schuchardt, et al., 2007).

The theory of planned behavior is used to understand and predict human behavior. This theory has been applied to online shopping, investing, and debt reducing behaviors (Xiao, 2008b).

The transtheoretical model of change (TTM) is used to understand how consumers eliminate undesirable behaviors and develop positive behaviors through stage-matched interventions. This theory has been applied to saving and debt reducing behaviors (Xiao, et al., 2004).

Self-determination theory posits that goals differentially contribute to human well-being based on the extent of their contributions to the core human psychological needs of competence, autonomy, and relatedness. This theory has been applied to money motivation and attitudes (Stone et al., 2008).

The human needs theory assumes that human needs are hierarchical and people seek higher-level needs after lower-level needs are met. This theory has been applied to saving motives (DeVaney, 2007).

What are the research gaps?

- Comprehensive reviews of literature from diverse academic fields, including economics, psychology, sociology, health, neurosciences, and organizational systems, should be conducted to identify important theories and factors associated with financial behaviors. This knowledge can inform the development and delivery of evidence-based financial education programs.
- The definition of “positive” and “negative” financial behaviors needs to consider life cycle stages, contexts and macroeconomic environments. Is saving behavior a positive behavior for all age groups and in all contexts?
- Longitudinal studies on financial behavior changes are needed to better understand how behaviors are formed and changed. To achieve this goal, a comprehensive, theory-based national panel dataset on consumer financial behaviors should be developed. Current national data sets can be used or amended for this purpose and existing national financial education programs should be encouraged to contribute to the dataset.
- Theory-based financial education programs with a focus on behavior modifications should be encouraged. Evaluation of financial education programs also should use appropriate theories as guides. Factors such as knowledge, attitude, and intention related to behavioral modification need to be investigated further. Associations between financial behaviors should be further investigated: do consumers follow a hierarchical pattern in developing financial behaviors?; do positive financial behaviors enhance each other?
- Qualitative research on consumer financial behaviors should be encouraged to explore important issues and factors that are not addressed by quantitative research. Research on financial behaviors of low- and middle-income consumers and consumers with diverse cultural backgrounds should be encouraged and conducted (Gutter et al., 2008).

What are the research priorities?

1. What are the relevant theories related to financial behaviors and attitudes and how do these theories apply to various subgroups?
2. What are the social, psychological and economic factors (e.g., incentives, emotion, peer effects) that affect financial attitudes and behaviors?
3. What are effective coping strategies and behaviors during times of financial crisis?
4. How do mass media and technology influence financial attitudes and behaviors?
5. How can longitudinal studies help us understand how financial attitudes and behaviors change over time?

SUMMARY – CONSUMER ECONOMIC SOCIALIZATION

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What do we already know from the existing literature?

The socialization process can be viewed as assimilation of the internalized and collective forms of values and norms, which occurs through parental influences and the influences of social others, including individuals, groups of individuals, organizations, media and the greater society. Values formation is crucial to understanding financial behavior, because behavior results from deep seated, emotion-laden, and often unconscious values. When consciously followed, values can act as motivational filters through which past behavioral data becomes comprehensible and future learning—and actions—become predictable (Beller, Weiss, and Palter 2005).

The family is a very important agent of socialization for both factual and emotional uses of money (Rettig 1983). Parents can influence the development of consumer behavior in their children both directly and indirectly. Family mediates the effects of other socialization agents and family communication processes play an important role in this mediation process (Moschis 1985). Parents are the main source of financial knowledge (Hira, Loibl, & Schenk Jr. 2007). Parents are also the primary influence on the way children handle money, particularly their attitudes toward saving (Clarke et al. 2005). Children learn financial management behavior through observation and participation and through intentional instruction by socialization agents (Rettig and Mortenson 1986). Several possible socialization agents include family (parents, siblings, spouses, etc.), peers, school, the workplace, media, and culture.

Participation in college-level financial education classes positively impacts investment knowledge (Peng, Bartholomue, Fox & Cravener 2007). People within states with mandated high school consumer education programs had higher savings rates and higher net worth when evaluated several years after the completion of the course (Bernheim et al. 2001). Those who attended employer-provided financial education workshops reported making better financial decisions, increased confidence when making investment decisions, and had their credit better under control (Garman et al. 1998).

Peers are an important socialization agent when it comes to making purchasing decisions. The role peers play in influencing purchasing decisions emerges slowly as children progress through their elementary school years (Bachmann, John, & Rao 1993).

Advertising is positively and directly related to children's purchase requests and materialism; it also is positively, though indirectly (mediated by advertising-induced purchase requests), related to family conflict, disappointment, and life dissatisfaction. Parent-child consumer communication and parental mediation of advertising are important moderators of the effects of advertising on children's purchase requests and materialism (Buijzen & Valkenburg 2003). Children who spent more time watching television became more enmeshed in the consumer culture, and that high consumer culture was significantly associated with depression anxiety, low self-esteem, and psychosomatic complaints in children (Schor 2004).

Financial socialization is the process by which young people acquire and develop values, attitudes, norms, knowledge, and behaviors that contribute to their financial skills and understanding. The family is the primary socialization agent for children. Children learn financial knowledge through their observations and participation and through their parents' intentional instruction (Danes, 1994; McNeal, 1987; Moschis, 1987).

The challenge for financial educators and others hoping to promote self-enhancing financial behavior is nothing less than helping individuals see and replace their underlying worldview. This involves raising their awareness in the context of the social environment in which they live and have formed their spending and borrowing habits in the first place and then, motivating them to change. But too often, sponsors of financial education employ "quick fix" approaches to financial learning and, unsurprisingly, have found them to have limited effect.

Most low-wage working families do not have the luxury of delayed consumption; they are playing by all the rules of a market economy, but struggle to be able to shift into an asset development mode. Further, for many families who are financially poor, who have limited opportunity for commanding a living wage, who live in poor neighborhoods, and whose children attend under-resourced schools, the models for wealth-building are scarce. If people do not see opportunity and consequently believe that opportunities are outside their reach, will any amount of "financial literacy" make a difference?

What are the research gaps?

- We do not know how the socialization process can be affected to improve financial behavior and what reference groups are most influential on financial behavior formation.
- Little is known about the role that personal psychology plays in financial behavior: how are these dispositions influenced by socialization (self-efficacy, materialism, impulsivity)?
- Current research does not inform us if there is an interaction of socialization and formal education in financial behavior formation.

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- What is the role of the media as an influence on perceived norm behaviors? What is the effect of social networking on financial behavior?
- While we know that people rely on family members and peers for financial advice, we do not know about the quality and adequacy of the information that people acquire from others; we have yet to exploit or even fully understand the power of peers to increase the effectiveness of financial education programs.
- We do not know how parents with limited income and asset success in the U.S. economy socialize their children to be effective wealth-builders. How do formative asset experiences and resulting expectations influence people's behaviors? We need to know if and how asset attainment impacts individuals' and families' economic, social, physical, psychological, and civic well-being. Longitudinal control/experiment research studies would be optimal ways to seek answers to these questions.
- We know very little about the world of choice in which these families operate. What constitutes an appropriate decision when alternatives are limited?
- Current research does not inform us to what extent a European-American middle class worldview drives our theory, research questions, methodology, and educational pedagogy. For example, the prevailing assumption that individual ownership is the asset goal can run counter to cultural norms of collective or community decision-making and ownership.
- The most compelling gap in research is the lack of theories that capture the impoverished consumer/taxpayer attributes, characteristics and behaviors that also incorporates the economic environment in which they operate: cash economy, constrained choice of financial services, limited access to internet and other information resources and limited avenues for cooperative and community owned assets. We apply theories generated by a middle to affluent representative consumer agent operating in a full-choice free-market economic environment to those at the bottom of the pyramid who live in economic environments characterized by limited infrastructure, inconvenient public transportation, a growing digital divide and high-cost limited-choice markets for goods and services.
- Existing data sources have a significant hole when it comes to understanding supply-side factors impacting the decisions of the working-poor with respect to their activities, behaviors and survival/mobility characteristics over their life-cycle.

What are the research priorities?

1. We need a better understanding of the relationship between socialization and financial behaviors, especially the influence on resources, psychology and education. What are appropriate techniques to improve the process of socialization? Is economic socialization an impediment to consulting financial advisors, or other more formal sources of information

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and financial advice? This can inform policies aimed at improving the effectiveness of financial education programs.

2. We need a better understanding of how much people are influenced by others when making financial decisions and the quality of information and advice they receive in this way. This will help inform policies promoting saving, particularly among low income groups.
3. We need a better understanding of how specific groups—such as women, African-Americans, Hispanics and other immigrants, and those with low educational attainment—acquire financial literacy and the role socialization plays for these groups. Generally these groups have low levels of financial literacy therefore are vulnerable economically. For example, they tend to have little or no savings for retirement or to buffer themselves against shocks.
4. Using field experiments or ethnographic work, we need to evaluate ways to exploit the power of peer influence on financial behavior. Many of the current saving and investment incentives rely on tax advantages. However, people with low levels of literacy may not fully appreciate the advantages these incentives offer. Moreover, such investigation may reveal more cost-effective ways to promote saving and contributions to pensions.
5. We need to explore how shared-ownership asset models may meet unmet needs of families who cannot currently acquire and bear the risk of individual ownership. In what community contexts might this work? Who could benefit from shared-ownership options? What community as well as individual benefits might be achieved?
6. We need to examine our financial education products and processes to identify any unintended European-American middle class biases that might exist. Perhaps a reason for the ineffectiveness of financial education in culturally, racially and economically diverse communities is a lack of attention to how our approaches, educational methods and examples connect or do not connect to the everyday lives of learners.
7. We need to craft new survey instruments from the perspective of community residents; we need data on the ways in which people make ends meet, how they continue to resiliently survive and thrive and what are their aspirations for themselves and their children in terms of financial security as they define it.
8. We need to develop whole-family learning programs that are ‘engaging’ and ‘real-life’ oriented. By focusing on bringing together multiple generations to understand the impacts of the costs and benefits to particular consuming behaviors, we have an opportunity to impact several financial issues at once: youth preparedness, couple financial management, and elderly retirement planning. Age specific curriculum may not work as well in cultural (ethnic/racial) enclaves as would a whole-family financial education program.

SUMMARY -- FINANCIAL EDUCATION AND PROGRAM EVALUATION

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What do we already know from the existing literature?

Since the early 2000s, a number of efforts have been made to document the impact of financial education on consumers' financial well-being. However, measuring the effectiveness of financial education has proven to be a difficult task and the results have often been mixed. In general, researchers have been working toward the same goal of trying to document whether financial education leads to improvements in consumers' financial knowledge, attitudes, and behaviors. Within the literature, there tends to be more consistent evidence that financial education leads to increases in financial knowledge and more positive changes in financial attitudes, motivation, and planned behavior. However, there is still debate as to whether financial education results in long-term changes in actual financial behavior.

Efforts to empirically document behavior change have been less consistent for a number of reasons. There are significant differences in core content, delivery methods, and target populations across programs, which has in turn resulted in considerable differences in the goals and objectives of these programs and what they are each trying to accomplish. At the same time, research in the area of financial education and program evaluation spans several academic disciplines, resulting in a lack of consistency in the types of theories, methodologies, and metrics being used to document program impact, which makes it difficult to make comparisons across studies. Furthermore, existing studies tend to lack adequate methodological controls for potential sampling and selection biases, environmental impacts (e.g., unexpected life events and program incentives) and psychological factors (e.g., inherent motivation, ability, and attitudes), making it even more difficult to isolate the impact of financial education on long-run outcomes.

What are the research gaps?

- **Defining Program Success.** A key gap in the current literature is a lack of consistency with regards to how financial “success” is being defined across programs. More specifically there is a lack of consistency in what the financial goals and objectives should be for program participants. What are financial education providers trying to accomplish with these programs? What are researchers ultimately trying to measure? At the end of the day, what financial information and problem-solving skills do consumers need to know? Therefore, a missing element in the research is an agreed upon set of key personal finance principles that can be applied across situations and subtopic areas. What set of personal finance principles does every adult and emerging adult need to understand and be able to apply in order to make informed decisions across topic areas and take appropriate financial actions in today’s complex financial marketplace?

- **Delivery Methods and Timing of Education.** Research is particularly limited on the comparative effectiveness of various delivery methods such as in-person, telephone, Internet, and computer software programs and simulations. There is also limited research on the relative effectiveness of group education versus more individualized, one-on-one financial counseling or “coaching.” Researchers need to better understand what delivery methods work, with whom, and why. They also need to examine what the appropriate timing is for the delivery of financial education. Is it when children start school or enter young adulthood or when they first enter the workforce? Or, is it when individuals are faced with a specific financial situation or crisis (e.g., buying a home, planning for retirement, or filing for bankruptcy)? In other words, are there “teachable moments” and when are they? Also, more research is needed to investigate how much education is needed to actually motivate individuals to change and achieve certain desired outcomes. Can short, one-shot workshops that focus on specific financial topics result in long-term knowledge retention and behavior change? How do the results of shorter programs compare to long-term programs that require students or consumers to participate in a series of on-going financial sessions? Also, what are the relative advantages and disadvantages of formal versus informal and mandatory versus voluntary education? For example, does requiring a personal finance course prior to graduation result in better long-term outcomes than if the course is optional?

- **Target Populations.** Financial education programs target nearly every segment of society, and in particular, youth, employees, and underserved populations in the financial markets. Yet, research has not yet effectively demonstrated whether this diversity in programming is appropriate or effective. More research is needed to better identify which populations financial education providers should be targeting with financial education programs. Should the focus be on providing a certain level of general financial education to all individuals such as formal financial education in the schools? Should those who are most in need of financial education be given priority? What do these various target populations need to know? Also, very little research has investigated issues related to program participation. In particular, more research is needed to better understand why some programs are better at reaching certain target populations than others and how these “best practices” can be applied to improving participation and retention in other programs. What are the most effective ways to

reach various target populations? Are current financial education efforts effectively reaching those who need financial education the most? Why or why not?

- **Measurement and Evaluation Methods.** Program evaluation researchers are often asked to provide a “silver bullet” list of financial outcomes that all consumers need to be working towards to achieve long-term financial security. As discussed above, the heterogeneity in objectives, desired outcomes, target populations, and content is a barrier to establishing a common set of financial objectives, much less a common set of indicators and measures (e.g., knowledge, confidence, attitudes, and behavior). Furthermore, the literature currently lacks a common set of reliable measures that have been adequately validated in multiple settings, which inhibits researchers’ ability to make broad base comparison of programs, impacts, and the overall effectiveness of financial education. Also, many of the measures are based on self-reported information from program participants, and are therefore, subject to a number of reporting biases resulting from misperceptions, over-optimism, memory distortion, recall bias, and established norms and “rules of thumb.” Objective measures can compensate for self-report biases. However, a significant part of consumer well-being is the individual’s own subjective assessment of their situation, requiring some form of self-report. Overall, more attention needs to be given to the development of robust and consistently used metrics to assess the impact of financial education on participants’ behavior and long-term financial well-being.

In addition to issues related to selecting financial outcomes and indicators, there are also measurement issues related to data collection and analysis. Program evaluation studies are subject to biases related to self-selection, program attrition, and non-response or low response rates. Longitudinal, control group studies and randomized experiments are often offered as potential solutions for dealing with these issues yet are rarely used to evaluate financial education programs. This is because they are very costly and time intensive for researchers and program participants. Moreover, even with follow-ups and control groups, it is difficult to control for environmental factors that might affect consumers’ financial outcomes such as unexpected life events, program incentives, and financial socialization. There are a number of psychological factors as well that are particularly difficult to account for such as the individual’s inherent motivation, ability, and attitude, as well as those of the instructor. With this said, arguments related to measurement are primarily speculative in nature. There is currently little empirical evidence to document whether, and to what extent, these measurement issues impact the true effect that financial education has on financial outcomes. The missing piece that researchers really want to know is whether longitudinal and control group studies provide better insight into the impact of financial education than standard pre- and post-tests with follow-ups? If so, to what extent, and to what degree should more cost-effective and time-efficient evaluation methods continue to be used?

- **Financial Education as a Policy Tool.** Difficulties in documenting the impact of financial education have led a growing number of researchers to question the extent to which financial education alone is effective at improving financial outcomes. Very little, if any, research has investigated the relationship between financial education and other types of potentially effective interventions such as regulatory measures and public policies designed to protect

consumers' financial well-being, regardless of how much financial knowledge and understanding they already have. Is financial education alone an effective policy tool at getting consumers to engage in certain financial behaviors? Can financial education be more effective if it is supplemented with regulation and public policy related to consumer protection? What are the costs and benefits associated with providing financial education versus using other types of alternative approaches? Are these alternative approaches more cost effective and efficient at getting consumers to engage in certain behaviors than financial education? Current research has not adequately addressed these issues.

- **Bridging the Gap between Theory and Practice.** In order for researchers to more effectively measure the impact of financial education, they need to have a better understanding of consumer financial behavior and how financial decisions are being made at the individual and household levels. Substantial strides in behavioral economics and consumer decision-making have been made; however, many of the key findings from these fields are not regularly applied to financial education programming or the evaluation of programs. It is difficult for researchers to establish whether financial education is the appropriate mechanism and how it translates to behavior change when we are still struggling to understand the behaviors education is attempting to modify. Are intervention strategies that are designed based on behavioral economics and decision-making theory more effective than those based on the more traditional model of knowledge transfer that leads to changes in attitude, skills, and ultimately, behavior?

To this end, there is a need for gathering more micro-level data on financial decision-making processes. Specifically, the field of financial education could benefit from research that tracks consumers' financial behaviors long enough to see how financial decisions are made, when financial behaviors actually change, why they change, what the role of financial education is in motivating the change, and what ultimately are the outcomes. Along these same lines, there is also a need to better understand the financial socialization process that individuals go through in establishing their financial identity, including financial confidence, attitudes, values, and habits. What role does financial education play in this socialization process and how does this process impact financial decisions and behaviors?

Finally, a number of theoretical frameworks from a wide range of academic disciplines are currently being used to explain how financial education might be applied so as to facilitate behavior change. Yet, there continues to be a noticeable disconnect between theory and practice. Theory provides context, and a baseline, for what consumers should be doing in practice. Ignoring theory is not a problem if anecdote-based recommendations always lead consumers to make optimal financial decisions. Yet, there are some anecdotal recommendations that are not optimal according to the theory. In these instances, educators are likely ignoring theory to the detriment of consumers' financial well-being. There are numerous opportunities for researchers to test various theories to see if their predictions match real-world financial data. Those theories that pass the tests can then be used to make more accurate predictions about the impact that financial education is likely to have on future financial behavior. This information can in turn be used to identify more appropriate educational interventions.

What are the research priorities?

1. From a content perspective, there needs to be a better understanding of the purpose of financial education and what financial information or skills need to be conveyed. Specifically, what are the core areas related to personal finance that all consumers need to understand to maneuver in the marketplace responsibly or to achieve the goals and outcomes determined by financial education?
2. Research is needed to investigate the effectiveness of various delivery methods for different target populations, the timing of that delivery, and the intensity of the financial education needed to motivate financial change.
3. There is a need for researchers to focus on the development of more reliable and valid measures of financial education, especially to document long-run behavior change.
4. Research is needed to better understand if, and how, financial education translates to improvements in knowledge retention, attitudes and motivation, and long-run financial behaviors, while adequately controlling for internal and external threats to the validity of the study.
5. Research is needed to better understand financial behavior and the decision-making process in general. How do consumers make financial decisions and how can financial education programs best modify and strengthen this process?
6. More investigation is needed to determine whether financial education may be more effective in conjunction with a combination of other regulatory or policy based tools.

SUMMARY -- FINANCIAL RISK ASSESSMENT

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What do we already know from the existing literature?

The term *risk* is used in different contexts in the financial arena. In general, risk implies making a choice when the outcome is uncertain. The final result could be a net gain, a net loss or no change. Attaching probabilities to the final result can inform the choice maker of the odds of a given outcome, but it does not eliminate the uncertainty of that given outcome.

The insurance industry uses the term risk to describe the chance of loss of a valued asset, whether that is life, health, earning capacity, or property. In the financial markets, risk has both a popular and a technical meaning. The financial press often uses the term *risk tolerance* to refer to investor feelings that may change with events and perceptions. Modern portfolio theory and rigorous prescriptions for optimal household investment allocations are based on expected utility analysis and the concept of *risk aversion* (the inverse of risk tolerance), however. Attention has been given to risk aversion in the economics and personal finance literature.

Risk aversion is a preference. Stigler and Becker (1977) proposed that preferences (tastes) "...neither change capriciously nor differ importantly between people... (p. 76)." It is possible that preferences may arise from genetic differences or very early socialization. It seems unlikely, though, that there should be differences in true risk tolerance based on characteristics such as race/ethnicity, age, or education status. But, such differences have been reported in studies that have used the measure of risk tolerance in the Federal Reserve Board's Survey of Consumer Finances (SCF), bringing the validity of the measure as an assessment of risk tolerance into question.

Hanna and Lindamood (2004) note that "...there are at least four methods of measuring risk tolerance: asking about investment choices, asking a combination of investment and subjective questions, assessing actual behavior, and asking questions based on hypothetical scenarios." (p. 29). Among these measurement approaches, the only measure of risk tolerance that is related the economic analysis of optimal investment choices is the job risk measure in the

Health and Retirement Study (HRS) (Barsky et al., 1997). This measure may have limitations, including the inability of respondents to fully accept the assumption that if they chose a risky gamble, it would be impossible to change jobs if they ended up in a low paying job. Hanna and Lindamood (2004) have recently proposed a hypothetical pension gamble with graphical illustrations that might better measure risk tolerance.

Viceira (2007) noted that there might be heterogeneity in investor risk tolerance, but also discussed the importance of objective characteristics such as the volatility of the investor's earned income and the level of correlation between the investor's earned income and equity returns.

Sophisticated discussions of risk aversion/tolerance have proposed there may be a difference between an individual's attitudes (preferences) and ability to tolerate risk. For instance, Cordell (2002) noted risk tolerance can be analyzed "... in two dimensions: risk attitude and risk capacity." Hanna, Waller, and Finke (2008) discussed the differences between the common usages of the term risk tolerance and the concept in normative financial economics.

If it is assumed that true risk tolerance does not vary much between demographic groups, the key to making recommendations to households about investment choices is the analysis of risk capacity. Risk capacity is related to total household wealth and the current allocation of that portfolio, including human capital (Hanna & Chen, 1997) and its correlation with financial investments (Cambell & Viceira, 2002). The effect of risk tolerance on optimal investment choices depends on risk capacity. Young workers choosing allocations for retirement accounts, for example, have a relatively large capacity for risk given the long time until retirement. For them, there is no reason even for those with low risk tolerance to choose conservative portfolios.

An important reason for concern about measurement of risk tolerance/risk aversion is replacement of the defined benefit plan (in which the employer bears the risk of meeting investment goals) with the defined contribution plan (in which the employee bears the risk of meeting employment goals). Default choices in retirement plans, lifecycle funds, and investor education aimed at clearing up misunderstanding about volatility of diversified portfolios could improve the retirement security of workers.

For workers approaching retirement and for retirees, the subject of risk tolerance and optimal portfolio allocations is much more complex than it is for younger workers. A key consideration is labor flexibility – if a household cannot or does not want to allow for changes in planned retirement age or going back into the labor market, conservative portfolio allocations may be appropriate.

What are the research gaps?

- Research should focus on individual risk tolerance/risk aversion, risk capacity, and also risk management practices of households. Some methods of risk assessment for a business, such as assets at risk, should be applied to households. It is unclear from the existing research literature as to how household risk assessment differs from that of business.

- The Kogan Wallach risky shift questionnaire, developed in the 1960s, was an early attempt to develop a rudimentary individual risk assessment. More recently, the SCF risk tolerance question and the risky gamble questions used in the Health and Retirement Survey have been used for the same purpose. But, all of these measures have limitations. It has been argued that the SCF instrument may serve well as a measure of financial sophistication rather than of risk tolerance. The HRS measures assume respondents understand terms of the gamble that they, in fact, might not. More work is needed on the development of valid measures of risk tolerance/risk aversion.
- The personal savings rate has declined sharply since the mid 1980s and the general trend of bankruptcy filings has been sharply increasing. It is not likely that households are simply making worse decisions. Rather, it may be that households are responding to changes in incentives and expectations, including the “democratization of credit.” There is some evidence to suggest that in the wake of a financial crisis such as a job loss, low income households are more likely not only to have impaired credit but to misperceive that credit impairment and consequently misjudge financial risks when faced with subsequent financial decisions. Research attention has largely focused on the relationship between risk aversion or risk tolerance and wealth accumulation. Less is known about the extent to which risk aversion may affect credit use, choice of lender, and debt levels. Also, little is known about the relationship between risk and other factors that affect household economic status such as investment in health or purchase of insurance.
- There are trust and contract approaches to investment risk and management. Financial intermediaries using a trust approach are fiduciaries, and assume some level of risk with the investor. Financial intermediaries using a contract approach conduct transactions at arms length and assume no risk. To the extent that consumers do not understand this difference in approaches, they are at risk of making decisions that are not in their best interest. Thus, education may play an important role in enabling consumers to more accurately evaluate their risk tolerance and risk capacity. Assessing the knowledge base of consumers may be relevant to assessment of risk tolerance. How accurate are consumers’ perceptions of their risk exposure?

What are the research priorities?

1. Better measures of risk tolerance linked to prescriptive financial economics are needed.
2. The concept of risk aversion is rooted in economic theory, providing a strong theoretical basis for its use in financial risk research. However, risk capacity and risk management ability are also important for household decision-making related to risk. How should these concepts be related in giving advice to consumers and in understanding household behavior?
3. More needs to be learned about the factors that may influence risk tolerance levels and, in turn, more needs to be learned about the influence that risk tolerance may have on individual and household level choice in areas such as insurance purchase, debt acquisition, and investment in health.

National Research Priorities for Financial Literacy and Education
Results of the National Research Symposium on Financial Literacy and Education
Washington, DC • October 6-7, 2008

4. Evaluation of the extent to which business measures of risk assessment will work in the household is needed.
5. More needs to be understood about the mechanisms by which consumers misunderstand the level of financial risk they face for investing and borrowing.
6. Risk is present in several different venues – life, debt, property and casualty, disability, health, investment, retirement income adequacy. Insurance currently offsets some, but not all of these risks. Does the definition and measurement of risk tolerance, risk capacity, risk management remain the same in all venues or is it somewhat situation specific
7. What are the consequences of a failure to accurately assess one's risk tolerance, risk capacity, risk management ability? How do exogenous factors such as the current financial crisis or an increase in prices affect one's actual and perceived risk tolerance, risk capacity, or risk management ability
8. What role does household liquidity play in one's risk tolerance, risk capacity, or risk management ability?

National Research Priorities for Financial Literacy and Education
Results of the National Research Symposium on Financial Literacy and Education
Washington, DC • October 6-7, 2008

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Washington, DC • October 6-7, 2008

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APPENDIX A

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National Research Priorities for Financial Literacy and Education
Results of the National Research Symposium on Financial Literacy and Education
Washington, DC • October 6-7, 2008

APPENDIX B

SYMPOSIUM AGENDA: MONDAY, OCTOBER 6

- 9:30 Opening and Welcome – Anna Escobedo Cabral, Treasurer of the United States
- 9:40 National Strategy for Financial Literacy - Dan Iannicola, Jr., Deputy Assistant Secretary for Financial Education, U.S. Department of the Treasury
- 9:45 Role of the U.S. Department of Agriculture in the National Strategy - Colien Hefferan, Administrator, Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture
- 9:55 Symposium Expectations – Jane Schuchardt, National Program Leader, Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture
- 10:00 Keynote Speaker - David Laibson, Harvard University, *the Psychology of Saving and Investment*
- 10:30 Financial Education & Program Evaluation – Angela Lyons, University of Illinois at Urbana-Champaign, Discussion Facilitator
- 11:45 Lunch
- 1:00 Financial Risk Assessment– Sherman Hanna, The Ohio State University, Discussion Facilitator
- 2:15 Behavior Theory Application – Jing Xiao, University of Rhode Island, Discussion Facilitator
- 3:40 Consumer Economic Socialization – Tahira Hira, Iowa State University, Discussion Facilitator
- 4:55 Outcome Paper Expectations - Jane Schuchardt

SYMPOSIUM AGENDA: TUESDAY, OCTOBER 7

- 8:30 Reconvene – Edwin Bodensiek, Director of Outreach, Office of Financial Education, U.S. Department of the Treasury
- 8:35 Breakout Group Strategy – Jane Schuchardt
- 8:45 Breakout Groups in Individual Sessions
- 10:30 Report Out and Synthesis of Research Recommendations - Dan Iannicola, Facilitators
- 11:45 Next Steps - Jane Schuchardt
- 12:00 Adjourn - Dan Iannicola

APPENDIX C

RECOMMENDED RESEARCH PRIORITIES BY TOPIC AREA

On day two of the symposium, topic area groups met separately to prioritize key research questions in their topic area. The recommendations listed below were prepared by each team and reported to the whole group.

Behavior Theory Application

- What are the relevant theories related to financial behaviors and attitudes and how do these theories apply to financial education programs to improve financial well-being of various subgroups (i.e., age, wealth, ethnicity, etc.)?
- What are the social, psychological and economic factors (e.g., incentives, emotion, peer effects) that affect financial attitudes and behaviors?
- What are effective coping strategies and behaviors during times of financial crisis?
- How does mass media and technology influence financial attitudes and behaviors?
- How can longitudinal studies provide better understanding and insight into how financial attitudes and behaviors change over time?

Consumer Economic Socialization

- How do social influences, including conflicting social messages, influence and affect household financial behavior?
- How do the financial socialization and education processes vary by gender, race, class, education, and ethnicity?

How do financial education and financial socialization interact, and how can this interaction be used to increase financial well being?

- What are the inter-generational processes by which financial socialization is transferred?
- How do conflicting social messages influence consumers' financial behavior?

Financial Education and Program Evaluation

- Is there evidence that current standards are effective in helping people reach their financial goals?

National Research Priorities for Financial Literacy and Education
Results of the National Research Symposium on Financial Literacy and Education
Washington, DC • October 6-7, 2008

- What are the mechanisms (socialization, psychological, pedagogical) through which financial education translates to improvements in information acquisition, knowledge retention, attitudes and motivation, and financial behaviors?
- Which delivery methods and techniques (such as those related to timing, content, delivery format, and intensity) are most effective in helping different target audiences achieve long-run financial security?
- What are reliable and valid measures of the success for financial education and what measures should be used to document success for various financial topic areas and target audiences?
- What is the most effective mix of financial education, regulation, and policy that will protect consumers financially and help them to better navigate today's complex financial marketplace?

Financial Risk Assessment

- How do people perceive and manage risk, and what are their financial risk tolerances and capacities? (Qualitative research is needed along with adding questions to large national datasets such as the Survey of Consumer Finances.)
- What is the level of comprehensiveness of literature on financial risk assessment, taking into consideration different disciplines, time frames, and cultures?
- How does socialization differ among population groups in ways that may influence risky choices?
- How do economic shocks alter risk exposure and risk management choices at the individual and household levels?