Financial Literacy and Education Research Priorities

Jane Schuchardt, Sherman D. Hanna, Tahira K. Hira, Angela C. Lyons, Lance Palmer, and Jing Jian Xiao

Twenty-nine scholars from public and private universities, non-profit organizations, and the federal government participated in a National Research Symposium on Financial Literacy and Education in October 2008 in Washington, DC. The purpose was to identify critical research questions that could inform outcomes-based financial education, relevant public policy, and effective practice leading to personal and family financial literacy. Following the symposium, the U.S. Department of the Treasury released a comprehensive report. This paper summarizes the key findings and recommendations from the report and how researchers can use this information to extend the breadth and depth of research in the area of financial literacy and education.

Key Words: financial education, financial literacy, financial research priorities

Introduction

The U.S. Department of the Treasury and U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service convened the National Research Symposium on Financial Literacy and Education on October 6-7, 2008, in Washington, DC. Twenty-nine experts in 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 (see Appendix A). Participants included academics from public and private universities and scholars from non-profit organizations and the Federal Reserve Board. Numerous professionals from universities, federal agencies, and the non-profit and private sectors also attended as observers.

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

The Commission was established under Title V, the Financial Literacy and Education Improvement Act, which was part of the Fair and Accurate Credit Transactions (FACT) Act of 2003, to improve financial literacy and education in the United States. The FACT Act named the Secretary of the Treasury as head of the Commission and mandated the Commission include 19 other federal agencies and bureaus. The Commission coordinates financial education efforts through the federal government, supports the promotion of financial literacy by the private sector, and encourages the synchronization of efforts between the public and private sectors. Among its accomplishments is the web site www.mymoney.gov and toll-free consumer hotline 1-888-MyMoney.

Jane Schuchardt, Ph.D., National Program Leader, Cooperative State Research, Education, and Extension Service, USDA, 1400 Independence Ave., Washington, DC 20250, jschuchardt@csrees.usda.gov, 202-690-2674

Sherman D. Hanna, Ph.D., Professor, Consumer Sciences Department, The Ohio State University, 1787 Neil Avenue, Columbus, OH 43210, hanna.1@osu.edu, 614-292-4584

Tahira K. Hira, Professor, Ph.D., Iowa State University, 1750 Beardshear Hall, Ames, IA 50011, tkhira@iastate.edu, 515-294-2042

Angela C. Lyons, Ph.D., Associate Professor, University of Illinois, Department of Agricultural and Consumer Economics, 440 Mumford Hall, 1301 W. Gregory Drive, Urbana, IL 61801, anglyons@illinois.edu, 217-244-2612

Lance Palmer, Ph.D., Assistant Professor, Department of Housing and Consumer Economics, University of Georgia, 205 Dawson Hall, Athens, GA 30602, lpalmer@fcs.uga.edu, 706-542-4916

Jing Jian Xiao, Ph.D., Professor, Department of Human Development and Family Studies, University of Rhode Island, Transition Center, Kingston, RI 02881, xiao@uri.edu, 401-874-2547

 © 2009 Association for Financial Counseling and Planning Education®. *All rights of reproduction in any form reserved.*

Symposium Process

The 2-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 (see Figure 1). The identification of these topics was informed by the Handbook of Consumer Finance Research (Xiao, 2008a). 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. The scholars who led these groups were Dr. Jing Jian Xiao (behavior theory application), Dr. Tahira Hira (consumer economic socialization), Drs. Angela Lyons and Lance Palmer (financial education and program evaluation), and Dr. Sherman Hanna (financial risk assessment).

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 topic area. The decisions made by each team were reported to the whole group. The total group then discussed and agreed upon 10 recommended research priorities.

Following the symposium, the U.S. Department of the Treasury released a comprehensive report. This paper presents a summary of the key findings and recommendations from the report and how researchers can use this information to extend the breadth and depth of research in the area of financial literacy and education. In the following sections, highlights from each topic area are presented, including a) a brief overview of the particular topic, b) key findings from the existing literature, and c) critical research gaps. The summaries are followed by a presentation of the 10 research priorities that were identified by the entire group. The paper concludes with a call to action to the financial literacy and education community. The full Treasury report can be found at www.treasury.gov/ofe.1

Topic Area 1: Behavior Theory Application

Topic in Brief

The purpose of this segment of the research symposium was to determine how behavior theory can be applied to provide insight regarding financial behavior. In order to motivate financial behavior change, better understanding is needed about how behaviors are formed and how to help consumers change undesirable financial behaviors and develop positive ones.

Psychological behavior theory has been tested extensively as it applies to such topics as smoking cessation and human nutrition. However, researchers have only recently begun to examine psychological factors affecting consumer financial behaviors and how to apply behavioral science theories to facilitate changes in personal financial behavior.

Key Findings from Existing Research

Factors associated with financial behaviors. Researchers from diverse fields have contributed to the literature on consumer financial behavior. Among them, consumer economists have conducted research to identify factors associated with money management, debt control, and saving behaviors (see Xiao, 2008a, for examples). Economic psychologists have discovered behavior patterns that have implications for consumer financial behaviors, including identification of contextual factors that influence decision making (e.g., decisions tend to be "local," intention does not mean action, and choice can be overwhelming) (Barr, Mullainathan, & Shafir, 2008; Bertrand, Mullainathan, & Shafir, 2006). Empirical research indicated that both economic and psychological factors are associated with retirement saving and asset ownership behaviors (DeVaney & Zhang, 2001; DeVaney, Anong, & Yang 2007). A qualitative study sponsored by the Filene Research Institute revealed several saving metaphors used by low-and middle-income consumers such as growing, harvesting, sacrificing, and protecting (Maynard & Zinsmeyer, 2007). Money management patterns were diverse among consumers (Hogarth, Hilgert, & Beverly, 2002). Financial education has positive impacts on consumer financial behaviors (Hilgert, Hogarth, & Beverly, 2003). Workplace financial education contributed to positive financial behavior changes (Kim, 2007; Kim, Kwon, & Anderson, 2005). Evidence suggested that consumer financial behaviors contributed to their economic and general well-being (Kim, Garman, & Sorhaindo, 2003; Xiao, Tang, & Shim, 2008).

Applying behavior theories to financial behaviors. The purpose of applying behavior theories to financial behavior is to improve consumer financial education and well-being (Xiao, 2008b). Several behavior theories are applied to personal financial behavior research (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) has been used to study ways to encourage consumers to eliminate undesirable behaviors and to develop positive behaviors through stage-matched interven-

tions. This theory has been applied to better understand how individuals can be motivated to increase savings and reduce debt (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 better understand the factors that contribute to individuals' money motivation and attitudes (Stone, Bryant, & Wier, 2008). The human needs theory assumes that human needs are hierarchical and people seek higher-level needs after lower-level needs are met. Researchers have applied this theory to better understand consumer saving behavior (DeVaney, Anong, & Whirl, 2007).

Critical Research Gaps

An examination of the literature revealed a number of research gaps. First, comprehensive reviews of the literature from diverse academic fields are needed to identify important theories and factors associated with financial behaviors for helping develop evidence-based financial education programs. These reviews should evaluate strengths and weaknesses of existing theories being applied and provide directions for developing new theories.

Second, relevant behavior theories need to be utilized to define desirable financial behaviors by considering specific life-cycle stages, contexts, and macroeconomic environments. For example, is saving a desirable behavior for all age groups in all life-cycle stages?

Third, theory-based longitudinal studies are needed to better understand how financial behaviors are formed or changed to positive directions. To achieve this goal, a comprehensive, theory-based national panel dataset on consumer financial behaviors could be developed. Current national data sets can be used or amended for this purpose and consumer data from existing national financial education programs could be used to compile the dataset.

Fourth, theory-based financial education programs with a focus on behavior modifications should be encouraged. Evaluations of financial education programs should use appropriate theories as guides to make them more effective to encourage consumers to improve their well-being through developing positive financial behaviors. Factors, such as knowledge, attitude, and intention related to behavioral modification, need to be further investigated.

Finally, theory-based research needs to explore in-depth associations between financial behaviors. Do consumers follow a hierarchical pattern in developing financial behaviors? Are positive financial behaviors correlated? Qualitative research on consumer financial behaviors could also be encouraged to explore important issues and factors that are not addressed by quantitative research and to develop new theories. In addition, in-depth research on financial behaviors of low- and middle-income consumers and consumers with diverse cultural backgrounds could be encouraged and conducted (Gutter, Hayhoe, & DeVaney, 2008).

Topic Area 2: Consumer Economic Socialization

Topic in Brief

The purpose of this segment of the research symposium was to determine how individuals gain knowledge in consumer economics and personal financial areas. How do they learn and develop specific consumer and financial skills to function successfully in the economy? Cognitive competence about the consumer and financial behavior is learned early in life blended with values, attitudes, aspirations, and experiences, and it has great influence on how adults make financial decisions. This session focused on understanding the role of the major agents of economic socialization (e.g., family, peers, schools, media, and workplace culture).

Key Findings from Existing Research

Economics and consumer socialization is a "process by which young people acquire skills, knowledge, and attitudes relevant to their effective functioning as consumers in the marketplace" (Ward, 1974, p. 2). Some researchers have extended that definition to include acquiring and developing values, attitudes, norms, skills, behaviors, motives, and knowledge which are related to consumption and financial management (Rettig & Mortenson, 1986). However, financial socialization is much more inclusive than learning to function effectively in the marketplace. It is the process of acquiring and developing values, attitudes, standards, norms, knowledge, and behaviors that contribute to the financial viability and well-being of the individual.

The socialization process can be viewed as assimilation of the internalized and collective forms of values and norms which occurs through parental influences and other social agents including individuals, groups of individuals, organizations, media and the greater society. Beller, Weiss, & Palter (2005) suggested that values formation is crucial to understand, because behaviors often result 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. Factors associated with consumer socialization. Several possible socialization agents include family (parents, siblings, spouses, etc.), peers, school, the workplace, media, and culture. The family is a very important agent of socialization for both factual and emotional uses of money. Rettig (1985), Danes (1994), and McNeal (1987) showed that family was the primary socialization agent for children. Parents influenced the development of consumer behavior in their children both directly and indirectly. Additionally, family mediated the effects of other socialization agents, and family communication processes played an important role in this mediation process (Moschis, 1985). Parents were also the primary influence on the way children handle money, particularly their attitudes toward saving (Clarke, Heaton, Israelsen, & Eggett, 2005). Children learned financial management behavior through observation, participation and through intentional instruction by socialization agents such as their parents (Rettig & Mortenson, 1986).

Research has shown that peers are an important socialization agent when it comes to making purchasing decisions. The role peers play in influencing purchasing decisions emerged slowly as children progress through their elementary school years (Bachmann, John, & Rao, 1993). According to Schor (2004), 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. Research has also shown that television advertising is positively and directly related to children's purchase requests and materialism. However, parent-child consumer communication and parental mediation of advertising watched on television was an important moderator of the effects of advertising on children's purchase requests and materialism (Buijzen & Valkenburg, 2003).

Education also has been shown to play an important role in financial socialization. Students who participated in a college-level financial education class were found to have higher levels of investment knowledge than students who did not participate in a financial education class (Peng, Bartholomue, Fox, & Cravener, 2007). People who attended high school in a state that required students to complete a consumer education course prior to graduation were found to have higher savings rates and higher net worth when evaluated several years after the completion of the course (Bernheim, Garrett, & Maki, 2001). Those who attended employer-provided financial education workshops were found to make better financial decisions, have increased confidence when making investment decisions, and have better control over their credit use (Garman, Kim, Kratzer, Brunson, & Joo, 1998; Hira & Loibl, 2005).

Research Gaps

Current literature identifies parents as primary agents for financial socialization. However, future studies must focus on exploring the nature of family influence in the process of consumer and financial socialization. While current studies acknowledge that family plays a significant role in socializing its members to market economy and personal finances, future studies must determine the quality and adequacy of the information that people acquire from others. Parents do not have an understanding of exactly when and how they are influencing their children's consumption and financial behaviors. They may not know exactly when their children are ready to become involved in various economic and financial situations and what specifically they should do as a family to build financial competencies and teach basic aspects of consumption. Similarly, future studies must identify how socialization processes can be affected to improve consumer and financial behavior and what reference groups are most influential on economic and financial behavior formation. Furthermore, research on economic and financial socialization, that is when youth become developmentally capable of learning a variety of economic concepts, is also needed.

Another area that needs to be explored by researchers is how parents with limited income and assets can socialize their children to be effective wealth-builders and how asset attainment impacts economic, social, psychological, and civic well-being. Longitudinal control/experiment research studies would be optimal ways to seek answers to some of these questions related to economic and financial socialization.

Topic Area 3: Financial Education and Program Evaluation

Topic in Brief

Formal and informal financial education can affect the financial behavior and socialization of individuals and households. Existing efforts to document the effects of financial education were discussed during this segment of the symposium, and a comprehensive framework for improving program evaluation research was recommended. Does financial education work and how do we know? The

public, private, and non-profit sectors have been offering an increasing number of financial education resources and programs aimed at improving the financial knowledge, attitudes, and behaviors of individuals, families, and their communities. Yet, researchers have continued to struggle with developing measures that effectively gauge whether these resources and programs are working. To date, there are wide variations in the methods and metrics being used to document program impact, and many in the research community are still grappling with the fundamental question of how to define program success.

Key Findings from Existing Research

In the last decade, a number of efforts have been made to document the impact of financial education on consumers' financial well-being (for an overview of the literature, see Braunstein & Welch, 2002; Fox, Bartholomae, & Lee, 2005; Lyons, 2005; Lyons & Neelakantan, 2008; Lyons, Palmer, Jayaratne, & Scherpf, 2006; Martin, 2007; National Endowment for Financial Education, 2005; Organization for Economic Co-Operation and Development, 2005; and U.S. Government Accountability Office, 2004). Most of these efforts have focused on evaluating individual programs and their impact on the financial outcomes of specific target populations such as youth, employees, low-income families, first-time homebuyers, retirees, and credit counseling clients (e.g., Thaler & Bernatzi, 2004; Bernheim & Garrett, 2003; Bernheim, Garrett, & Maki, 2001; Block-Lieb, Gross, & Wiener, 2002; Danes, 2004; Elliehausen, Lundquist, & Staten, 2002; Hartaska & Gonzalez-Vega, 2005; Hilgert, Hogarth, & Beverly, 2003; Hirad & Zorn, 2001; Lyons, Chang, & Scherpf, 2006; Lusardi & Mitchell, 2007; Schreiner, Clancy, & Sherradan, 2002). The general goal of these studies has been to try and document whether financial education leads to improvements in consumers' financial knowledge, attitudes, and behaviors.

Measuring the effectiveness of financial education, however, has been challenging, and the results have often been mixed. There is fairly consistent evidence that financial education leads to increases in financial knowledge and more positive changes in financial attitudes, motivation, and planned behavior (e.g., Lyons, 2005; Lyons, Palmer, Jayaratne, & Scherpf, 2006). Positive correlations have also been found between financial knowledge and financial practices (e.g., Hilgert, Hogarth, & Beverly, 2003; Lyons, Rachlis, & Scherpf, 2007). However, there is little conclusive evidence to suggest causation. While evidence suggests that financial education leads to more improved financial behavior, the literature has been unable to clearly establish this relationship as a stylized empirical fact. There is still considerable debate among researchers as to whether financial literacy and education actually results in long-term improvements in financial behavior and well-being. Given this, there are a number of opportunities for researchers to improve upon existing research related to financial education and program evaluation.

Critical Research Gaps

Several research gaps related to financial education and program evaluation were identified by symposium participants. The following were five of the most critical gaps. A more complete listing can be found in the Treasury report.

The first gap is related to the lack of consistency among researchers in how to define and measure program success. Significant differences across programs in core content, delivery methods, and target populations have resulted in considerable differences in the goals and objectives of these programs and what they are each trying to accomplish. This makes it difficult for researchers to identify a common set of reliable measures (i.e., knowledge, attitude, and behavior indicators) that can be adequately validated in multiple settings. It also inhibits researchers' ability to make broad-based comparisons across programs. There is a need for researchers to develop a clear understanding of what it means to be "financially educated." In other words, what financial information and skills do consumers need to know? More research is also needed to better understand how financial education can be translated to improvements in knowledge retention, attitudes and motivation, and long-term financial well-being.

A second gap is associated with addressing challenges related to differences in methodology, data collection, and analysis. In particular, existing studies tend to lack adequate methodological controls for potential sampling and selection biases, environmental impacts (e.g., socialization factors and unexpected life events) and psychological factors (e.g., inherent motivation and ability). These deficiencies make it difficult to isolate the impact of financial education on long-run outcomes. More longitudinal research, including control group studies and randomized experiments, are needed to provide insight into the long-term impacts of financial education. Since these studies can be costly and time intensive, research is also needed to determine if longitudinal analysis provides better insight into the impact of financial education than more traditional evaluation methods such as pre- and post-tests with a follow-up.

A third research gap is related to the delivery and timing of financial education. Research has been particularly limited on the comparative effectiveness of various financial education delivery methods such as in-person, telephone, Internet, and computer software programs and simulations. There has also been limited research on the relative effectiveness of group education versus one-on-one financial counseling or "coaching." More research is needed to better understand what delivery methods work, with whom, and why. Research is also needed to investigate the timing of the delivery – both within the lifecycle and in relation to certain financial events. Additional research is needed to examine the intensity of financial education needed to motivate positive financial change (e.g., one-shot programs and services versus multi-session programming).

In general, for researchers to more effectively measure the impact of financial education, they also need to have a better understanding of consumer financial behavior and how financial decisions are made. Substantial strides have been made in behavioral and consumer economics; however, many of the lessons learned from this field have not yet been applied to evaluating the impact of financial education. A fourth gap cited by symposium participants is that more research is needed to better understand the process by which financial education can be used to modify consumers' decision making and financial behavior.

Finally, little research has investigated the relationship between financial education and other types of potentially effective interventions (e.g., making modifications to employer-sponsored retirement plans or implementing regulatory measures and public policies that better protect consumers' financial security). More research is needed to determine whether financial education alone is an effective tool at getting consumers to engage in certain financial practices. Recent research is beginning to suggest that financial education may be more effective in combination with other measures such as modifications to employer-sponsored retirement plans and regulations and policies that focus on consumer protection (e.g., Kozup & Hogarth, 2008).

Topic Area 4: Financial Risk Assessment

Topic in Brief

How is financial risk assessed and incorporated in decision making? Certain households maximize wealth accumulation over time while others with the same opportunities do not. While strides have been made to better understand the role risk tolerance plays in financial decisions, researchers agree that more knowledge is needed to inform educational strategies and policy. For example, does financial education influence risk tolerance? How do individuals evaluate risky actions? The purpose of this segment of the symposium was to summarize what is known about how people assess financial risk and how their tolerance levels affect their ability to build wealth, not debt.

Key Findings from Existing Research

Risk aversion as discussed by financial economists is a preference (Hanna, Waller, & Finke, 2008). Hanna, Gutter, and Fan (2001, p. 53) noted 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." Hanna, Finke, and Waller (2008) noted that many composite risk tolerance measures include questions related to attitudes, current behavior, and feelings (see also Grable & Joo, 2004; Roszkowski, Davey, & Grable, 2005; Roszkowski & Grable, 2005). Among the four basic approaches to measurement, the only measure of risk tolerance that is related to the economic analysis of optimal investment choices is the job risk measure in the Health and Retirement Study (HRS) (Barsky, Juster, Kimball, & Shapiro, 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) 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) suggested that risk tolerance should be analyzed in two dimensions, risk attitude and risk capacity. Hanna, Waller, and Finke (2008) discussed differences between 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.

Critical Research Gaps

Symposium participants identified a number of research gaps related to financial risk. First, better measures of risk tolerance linked to prescriptive financial economics are needed. 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?

More also 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 choices in areas such as insurance, debt acquisition, and health. Evaluation is also needed on the extent to which measures of risk assessment for businesses will work for the household.

Finally, more research is needed to understand the mechanisms by which consumers misunderstand the level of financial risk they face for investing and borrowing. Risk is present in several different venues – life, debt, property and casualty, disability, health, investment, and retirement income adequacy. Insurance currently offsets some, but not all of these risks. Does the definition and measurement of risk tolerance, risk capacity, and risk management remain the same in all venues or is it somewhat situation specific? What are the consequences of a failure to accurately assess one's risk tolerance, risk capacity, and 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, and risk management ability? What role does household liquidity play in one's risk tolerance, risk capacity, and risk management ability?

Research Priorities

The summary information presented for each topic area served as a foundation to help symposium participants identify key research priorities. Through a facilitated process, participants dropped away the topic headings and effectively named overarching research priorities for financial literacy and education. The following 10 research questions were identified, not in rank order.

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?

A Call to Action for the Financial Literacy and Education Community

Any effort directed toward human well-being, whether it is related to policy, education, or practice, has a propensity for greater success if it is grounded in rigorous research. When the 20 federal agencies of the Financial Literacy and Education Commission framed Taking Ownership for the Future: National Strategy for Financial Literacy (2006), it was paramount that the "call to action" includes the identification and dissemination of specific research priorities.

The results of the National Research Symposium have been distributed extensively to the public, private, and non-profit sectors concerned with financial literacy and education. University faculty, especially those who participate in research themselves or direct research at the undergraduate and graduate levels, can use the symposium results to guide research endeavors. Foundations and other entities providing research funding can use the recommendations to frame requests for proposals. Professional organizations can use the research questions to frame conferences and other services for membership.

The naming of research priorities can also provide a common framework for the interdisciplinary study of financial literacy and education. Researchers from several disciplines were represented at the symposium. The common research agenda discussed presents opportunities for continued collaboration and development in the area of financial literacy and education. Continued interdisciplinary study of this field, as outlined by the symposium results, is essential to further understand financial decision-making and behavior, and develop education and other interventions that result in positive financial outcomes for individuals, families, and society as a whole.

Figure 1. Building the Research Priorities

It is the collective hope of the Financial Literacy and Education Commission and the scholars who dedicated their time, expertise, and passion to this process that the results of the symposium guide important research over the next decade. Only by affirming and adding to the science base for financial literacy and education can this emerging interdisciplinary profession (Schuchardt, et. al., 2007) gain appropriate notoriety and respect for relevance and rigor.

References

Bachmann, G. R., John, D., & Rao, A. R. (1993). Children's susceptibility to peer group purchase influence: An exploratory investigation. In L. McAlister & M. L. Rothschild (Eds.), *Advances in Consumer Research* (pp. 463–468). Provo, UT: Association for Consumer Research.

Barr, M. S., Mullainathan, S., & Shafir, E. (2008). Behaviorally informed financial services regulation. White paper. Washington, DC: New America Foundation.

Barsky, R. B., Juster, F. T., Kimball, M. S., & Shapiro, M. D. (1997). Preference parameters and behavioral heterogeneity: An experimental approach in the Health and Retirement Study, *Quarterly Journal of Economics, 112*(2), 537-579.

Belk, R. W. (1988). Possessions and the extended self, *Journal of Consumer Research, 15* (September), 139-168.

Beller, K., Weiss, S., & Palter, L. (2005). *The consistent consumer: Predicting future behavior through lasting values*. Chicago, IL: Dearborn Trade Publication.

Bernheim, B. D., & Garrett, D. M. (2003). The effects of financial education in the workplace: Evidence from a survey of households. *Journal of Public Economics, 87*(7/8), 1487-1519.

Bernheim, B. D., Garrett, D. M., & Maki, D. M. (2001). Education and saving: The long-term effects of high school financial curriculum mandates. *Journal of Public Economics, 80*(3), 435-465.

Bertrand, M., Mullainathan, S., & Shafir, E. (2006). Behavioral economics and marketing in aid of decision-

making among the poor. *Journal of Public Policy and Marketing, 25*(1), 8-23.

Beutler, I., & Dickson, L. (2008) Consumer economic socialization. In J. J. Xiao (ed.). *Handbook of Consumer Finance Research* (pp.83-102). New York: Springer.

Block-Lieb, S., Gross, K., & Wiener, R. L. (2002). Lessons from the trenches: Debtor education in theory and practice. *Fordham Journal of Corporate & Financial Law, 7*(2), 503-523.

Braunstein, S., & Welch, C. (2002). Financial literacy: An overview of practice, research, and policy. *Federal Reserve Bulletin, 88*(November), 445-457.

Buijzen M., & Valkenburg, P. M. (2003) The unintended effect of television advertising. *Communication Research, 30*(5), 483-503.

Campbell, J. Y., & Viceira, L. M. (2002). *Strategic asset allocation*. Oxford: Oxford University Press.

Clarke, M. D., Heaton, M. B., Israelsen, C. L., & Eggett, D. L. (2005) The acquisition of family financial roles and responsibilities. *Family and Consumer Sciences Research Journal, 33*, 321-340.

Cordell, D. M. (2002). Risk tolerance in two dimensions. *Journal of Financial Planning, 15*(5), 30-35.

Danes, S. M. (1994). Parental perceptions of children's financial socialization. *Financial Counseling and Planning, 5*, 127-149

Danes. S. M. (2004). Evaluation of the NEFE High School Financial Planning Program, 2003-2004. Greenwood Village, CO: National Endowment for Financial Education. Retrieved February 16, 2008, from http://hsfpp.nefe.org/loadFile.cfm?contentid=273

DeVaney, S. A. & Zhang, T. C. (2001). A cohort analysis of the amount in defined contribution and individual retirement accounts. *Financial Counseling and Planning, 12*(1), 89-102.

DeVaney, S. A., Anong, S., & Whirl, S. P. (2007). Household savings motives. *The Journal of Consumer Affairs, 41*(1) 174-186.

DeVaney, S. A., Anong, S., & Yang, Y. (2007). Asset ownership of Black and White families. *Financial Counseling and Planning, 18*(1), 2-14.

Elliehausen, G., Lundquist, E. C., & Staten, M. E. (2003). The impact of credit counseling on subsequent borrower behavior. *The Journal of Consumer Affairs, 41*(1), 1-28.

Fox, J., Bartholomae, S., & Lee, J. (2005). Building the case for financial education. *The Journal of Consumer Affairs, 39*(1), 195-214.

Garman, E. T., Kim, J., Kratzer, C. Y., Brunson, B. H., & Joo S. (1998). Financial education in the workplace: Results of a research study. *Journal of Compensation and Benefits, 14*, 24-27.

Grable, J. E., & Joo, S. H. (2004). Environmental and biopsychosocial factors associated with financial risk tolerance. *Financial Counseling and Planning, 15*(1), 73-82.

Gutter, M., Hayhoe, C., & DeVaney, S. A. (2008). Economic and psychological determinants of savings behavior: A conceptual model. Consumer Interests Annual. Retrieved March 5, 2009, from http://www.consumerinterests.org/files/public/70.GutterHayhoeDevaney.pdf.

Hanna, S. D., & Chen, P. (1997). Subjective and objective risk tolerance: Implications for optimal portfolios. *Financial Counseling and Planning, 8*(2), 17-26.

Hanna, S. D., Gutter, M. S., & Fan, J. X. (2001). A measure of risk tolerance based on economic theory. *Financial Counseling and Planning, 12*(2), 53-60.

Hanna, S. D. & Lindamood, S. (2004). An improved measure of risk aversion. *Financial Counseling and Planning, 15*(2), 27-38.

Hanna, S. D., Waller, W., & Finke, M. (2008). The concept of risk tolerance in personal financial planning. *Journal of Personal Finance, 7*(1), 96-108.

Hartarska, V., & Gonzalez-Vega, C. (2005). Credit counseling and mortgage termination by low-income households. *Journal of Real Estate Finance and Economies, 30*(3), 227-243.

Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003, July). Household financial management: The connection between knowledge and behavior. *Federal Reserve Bulletin*, 309-322.

Hira, T. K., & Loibl, C. (2005). Understanding the impact of employer-provided financial education on employee commitment. *The Journal of Consumer Affairs, 39*(1), 173-194.

Hirad, A., & Zorn, P. M. (2001). A little knowledge is a good thing: Empirical evidence of the effectiveness of pre-purchase homeownership counseling. McLean, VA: Freddie Mac. Retrieved February 16, 2008, from http://www.freddiemac.com/corporate/reports/pdf/homebuyers_study.pdf

Hogarth, J. M., Hilgert, M. A., & Schuchardt, J. (2002). Money managers: The good, the bad, and the lost. *Proceedings of the Association of Financial Counseling and Planning Education*, 12-23.

Kasser, T., Ryan, R. M., Zax, M., & Sameroff, A. J. (1995). The relations of maternal and social environments to

late adolescents' materialistic and prosocial aspirations. *Developmental Psychology, 31*, 907–914.

Kim, J. (2007). Workplace financial education program: Does it have an impact on employees' personal finances? *Journal of Family and Consumer Science, 99*(1), 43-47.

Kim, J., Garman, E. T., & Sorhaindo, B. (2003). Relationships among credit counseling, clients' financial well-being, financial behaviors, financial stressor events, and health. *Financial Counseling and Planning, 14*(2), 75-87.

Kim, J., Kwon, J., & Anderson, E. (2005). Factors related to retirement confidence: Retirement preparation and workplace financial education. Financial Counseling and Planning, 16(2), 77-89.Kozup, J., & Hogarth, J. M. (2008). Financial literacy, public policy, and consumers' self-protection-more questions, fewer answers. *The Journal of Consumer Affairs, 42*(2), 127-136.

Lyons, A. C. (2005). Financial education and program evaluation: Challenges and potentials for financial professionals. *Journal of Personal Finance, 4*(4), 56-68.

Lyons, A. C., Chang, Y., & Scherpf, E. (2006). Translating financial education into behavior change for low-income populations. *Financial Counseling and Planning, 17*(2), 27-45.

Lyons, A. C., & Neelakantan, U. (2008). Potential and pitfalls of applying theory to the practice of financial education. The Journal of Consumer Affairs, 42(1), 106-112.

Lyons, A. C., Palmer, L., Jayaratne, K. S. U., & Scherpf, E. (2006). Are we making the grade? A national overview of financial education and program evaluation. *The Journal of Consumer Affairs, 40*(2), 208-235.

Lyons, A. C., Rachlis, M., & Scherpf, E. (2007). What's in a score? Differences in consumers' credit knowledge using OLS and quantile regressions. *The Journal of Consumer Affairs, 4*1(2), 223-249.

Lusardi, A., & Mitchell, O. S. (2007). Baby boomer retirement security: The role of planning, financial literacy, and housing wealth. J*ournal of Monetary Economics, 54*(1), 205–224.

Martin, M. (2007). A literature review on the effectiveness of financial education (Working Paper No. 07-03). Richmond, VA: Federal Reserve Bank of Richmond. Retrieved February 16, 2008, from www.richmondfed.org/publications/economic_research/working_papers/pdfs/wp07-3.pdf

Maynard, N., & Zinsmeyer, J. (2007). The mind of low- to moderate-income savers. Report. Madison, WI: Filene Research Institute.

McNeal, J. V. (1987). *Children as consumers: Insights and implications*. Lexington, MA: Lexington Books.

Moschis, G. P. (1985). The role of family communication in consumer socialization of children and adolescents. *Journal of Consumer Research, 11*(4), 898-913.

Moschis, G. P. (1987). *Consumer socialization: A life cycle perspective*. Lexington, MA: Lexington Books.

National Endowment for Financial Education. (2005). Closing the gap between knowledge and behavior: Turning education into action. Greenwood Village, CO: Author. Retrieved February 16, 2008, from http://www.nefe.org/Portals/0/NEFE_Files/Research%20and%20Strategy/Personal%20Finance%20Papers%20white%20papers/02Closing%20the%20Gap%20between%20Knowledge%20and%20Behavior_Aug05.pdf

Organization for Economic and Co-Operation and Development (OECD). (2005). *Improving financial literacy: Analysis of issues and policies*. Paris: OECD Publishing.

Peng, T. M., Bartholomue , S., Fox, J. J., & Cravener, G. (2007). The impact of personal financial education delivered in high school and college courses. *Journal of Family and Economic Issues, 28*, 265-284.

Rettig, K. D. (1985). Consumer socialization in the family. *Journal of Consumer Education, 3*, 1-7.

Rettig, K. D., & Mortenson, M. (1986). Household production of financial management competencies. In R. Deacon & W. Huffman (Eds.), *Human Resources Research 1887-1987* (pp. 137-145). Ames: Iowa State University.

Roberts, J., & Jones, E. (2001) Money attitudes, credit card use, and compulsive buying among American college students. *Journal of Consumer Affair, 35*(2), 213-240.

Roszkowski, M. J., Davey, G., & Grable, J. E. (2005, April). Insights from psychology and psychometrics on measuring risk tolerance, *Journal of Financial Planning*. Retrieved June 1, 2008, from www.fpanet.org/journal/articles/2005_Issues/jfp0405-art8.cfm

Roszkowski, M. J., & Grable, J. (2005). Estimating risk tolerance: The degree of accuracy and the paramorphic representations of the estimate. *Financial Counseling and Planning, 16*(2), 29-47.

Schor, J. B. (2004). *Born to buy: The commercialized child and the new consumer culture*. New York: Scribner.

Schuchardt, J., Bagwell, D. C., Bailey, W. C., DeVaney, S. A., Grable, J. E., Leech, et al. (2007). Commentary: Personal finance, an interdisciplinary profession. *Financial Counseling and Planning, 18*(1), 1-9.
Schreiner, M., Clancy, M., & Sherraden, M. (2002). *Saving performance in the American Dream Demonstration: A national demonstration of individual development accounts*. St. Louis, MO: Center for Social Development, Washington University in St. Louis.
Stone, D. N., Bryant, S. M., & Wier, B. (2008). *Money motivation and attitudes: An application and extension of self-determination theory*. Unpublished manuscript, University of Kentucky.
Thaler, R. H., & Bernatzi, S. (2004). Save more tomorrow: Using behavioral economics to increase employee saving. *Journal of Political Economy, 112*(1), S164-S187.
U.S. Financial Literacy & Education Commission. (2006). *Taking ownership of the future: The national strategy for financial literacy.* Washington, DC: Author.
U.S. Government Accountability Office. (2004). Highlights of a GAO forum: The federal government's role in improving financial literacy (GAO-05-93SP). Washington, DC: Author. Retrieved February 16, 2008, from http://www.gao.gov/docdblite/ summary.php?rptno=GAO-05-93SP&accno=A13412
Viceira, L. M. (2007). Life-cycle funds. Retrieved July 1, 2008, from http://ssrn.com/abstract=988362
Wang, C. & Hanna, S. D. (2007). The risk tolerance and stock ownership of business owning households, *Financial Counseling and Planning, 18*(2), 3-18.
Ward, S. (1974). Consumer socialization. *Journal of Consumer Research, 1*(9), 1-16.
Xiao, J. J. (Ed.). (2008a). *Handbook of consumer finance research*. New York: Springer.
Xiao, J. J. (2008b). Applying behavior science theories in financial behaviors. In J. J. Xiao (ed.). *Handbook of consumer finance research* (pp. 69-81). New York: Springer.
Xiao, J. J., Newman, B. M., Prochaska, J. M., Leon, B., Bassett, R., & Johnson, J. L. (2004). Applying the trans-theoretical model of change to debt reducing behavior. *Financial Counseling and Planning, 15*(2), 89-100.
Xiao, J. J., Tang, C., & Shim, S. (2008). Acting for happiness: Financial behavior and life satisfaction of college students. *Social Indicator Research*. Online First. DOI 10.1007/s11205-008-9288-6.

Endnotes

[1]The report can be accessed via the Treasury's website for the Office of Financial Education (www.treasury.gov/ofe). Click on "Financial Literacy and Education Commission," "Implementation of the National Strategy," and then "Academic Research and Program Evaluation."

Acknowledgments

The authors express appreciation to the U.S. Department of the Treasury and the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service for hosting the National Research Symposium on Financial Literacy and Education and bringing national awareness and attention to pressing research issues in the area of financial literacy and education. In particular, the authors wish to thank Dan Iannicola, Jr., former Deputy Assistant Secretary for Financial Education for the U.S. Department of the Treasury, and his staff for exemplary leadership in this collaborative partnership.

This paper extends work previously released by the U.S. Department of the Treasury in partnership with the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service. All views expressed in this paper are those of the authors and do not reflect the views or policies of either government agency.

Appendix A. Symposium Participants

Charles L. Betsey, Ph.D.
Howard University

Edwin Bodensiek, Director of Outreach
United States Department of the Treasury
Office of Financial Education

Cathy Falcon Bowen, Ph.D.
Pennsylvania State University

Stephanie M. Bryant, Ph.D.
University of South Florida

Haiyang Chen, Ph.D.
William Paterson University

Robert L. Clark, Ph.D.
North Carolina State University

Sharon A. DeVaney, Ph.D.
Purdue University

Michael Gutter, Ph.D.
University of Florida

Sherman D. Hanna, Ph.D.
The Ohio State University

Tahira K. Hira, Ph.D.
Iowa State University

Jeanne M. Hogarth, Ph.D.
Board of Governors of the Federal Reserve System

Dan Iannicola, Jr.
Deputy Assistant Secretary for Financial Education
United States Department of the Treasury,
Office of Financial Education

Jinhee Kim, Ph.D.
University of Maryland

David I. Laibson, Ph.D.
Harvard University

Sharon C. Laux, Ph.D.
University of Missouri, St. Louis

Annamaria Lusardi, Ph.D.
Dartmouth College

Angela Lyons, Ph.D.
University of Illinois

Mark C. Meyer, J.D.
Filene Research Institute

Judith Ochs, Program Analyst (detailee)
United States Department of the Treasury
Office of Financial Education

Lance Palmer, Ph.D.
University of Georgia

Gary J. Previts, Ph.D.
Case Western Reserve University

Janneke Ratcliffe
University of North Carolina at Chapel Hill

Bárbara J. Robles, Ph.D.
Arizona State University-Phoenix Campus

Eldar Shafir, Ph.D.
Princeton University

Deanna L. Sharpe, Ph.D.
University of Missouri at Columbia

Catherine A. Solheim, Ph.D.
University of Minnesota

Michael E. Staten, Ph.D.
University of Arizona

Peter Tufano, Ph.D.
Harvard University

Lois A. Vitt, Ph.D.
Institute for Socio-Financial Studies

William B. Walstad, Ph.D.
University of Nebraska-Lincoln

Lauren E. Willis, J.D.
Loyola Law School

Jing Jian Xiao, Ph.D.
University of Rhode Island