# What Makes a Good Money Manager Good? Insights from an Evaluation of a Financial Education Initiative

Using a data set of soldiers stationed at Ft. Bliss in El Paso, TX, this paper explores the impacts of aa financial education course on measures of being a good or poor money manager. The largest factors that appeared to impact good money management involved experience and education. Learning to learn may be an important consideration for structuring financial education programs. For financial educators, this may mean more careful learner assessments prior to instruction. For policy makers, this may mean reviewing curriculum requirements so that schools provide the literacy, numeracy, and critical thinking skills that lay the foundation for "learning to learn."

# Catherine J. Bell, Daniel Gorin, Jeanne M. Hogarth Federal Reserve Board, Division of Consumer & Community Affairs<sup>1</sup>

#### Introduction

Financial education has risen on the agendas and priority lists of a number of agencies and organizations (Braunstein, 2008; Bernanke, 2006). In fact, the American Council on Consumer Interests commissioned a special issue of the *Journal of Consumer Affairs* in 2008 (Vol. 42, No.2) focusing on financial literacy and public policy and a second special issue on financial literacy is planned for 2010. Yet despite all of the research conducted on the topic, the literature on evaluating the impacts of financial education is quite inconclusive (Bernheim, Garret, and Maki 2001; Lyons, Chang, and Scherpf, 2006; Willis, 2008; Cole and Shastry, 2009). This study is one attempt to move the field forward by addressing two common criticisms of financial education program evaluation literature: lack of a comparison group and documenting changes over time.

The Army Emergency Relief (AER), the U.S. Army post at Ft. Bliss in El Paso TX, and the Federal Reserve Board have been collaborating over the last several years to provide financial education for young enlisted soldiers and to evaluate the impact of that education on the soldiers' financial management behaviors. Soldiers attending the Army's air defender advanced individualized training (AIT) at Ft. Bliss are offered a two-day financial education course taught by staff from San Diego City College; funding for the course is provided by AER.<sup>2</sup> At the end of the two-day course, soldiers complete a survey of financial behaviors that serves as a baseline for the evaluation. A second group of soldiers at Ft. Bliss, who did not participate in the financial education course, serve as a comparison group. Follow-up surveys were conducted in January 2008 and January 2009 to provide second data points for those who took the financial education course.

The survey draws upon the experiences of many other financial education evaluations and collects a wide variety of information on demographics, the soldiers' pre-military histories (including financial management practices of their parents and family members), financial products they use, their current financial standing, financial behaviors and activities, a financial self-assessment, and information on financial education programs attended.

Over the years, numerous researchers have conducted program evaluations of financial education programs. More recently, Collins and O'Rourke (2009) analyzed a set of studies of the impacts of financial education and counseling. As with the current study, many of these programs were targeted to specific audiences: homebuyers, high school youth, IDA participants, and so forth. Although financial education can be beneficial and can have a positive impact on the lives of consumers, the nature of the impact and its level of effectiveness are often difficult to measure. Furthermore, impacts may not be immediate, but education may be instrumental in starting the process of behavior change or moving people from one stage of behavior to another (Xiao et al., 2004). Researchers and practitioners continue to debate the rigor of various evaluation techniques and the measures to use (Lyons, 2005; Willis, 2008). While knowledge, attitudes, behaviors, and outcomes (dollars saved or debt reduced) have been the metrics of choice, researchers and program evaluators are beginning to coalesce around the desirability of outcome measures. Increased knowledge alone does not necessarily change behavior. Furthermore, measuring behavior change from a macro perspective may not yield the same results as measuring it from a micro perspective – that is, measuring individual financial management behaviors. This paper explores the impacts of this specific course on aggregate measures of being a good or poor money manager.

## Methodology

Data reported here are from "paper and pencil" questionnaires administered during the financial education course (baseline, conducted in 2006-2008), in January, 2008 (follow-up and comparison group), and in January, 2009 (follow-up and comparison group). The baseline survey, instructors for the course collected the completed questionnaires and sent them to the [agency's] contractor for coding, verification, and safe-keeping. [Agency] staff worked with the central tasking manager at Ft. Bliss and administered questionnaires to air defender units during January, 2008 and January, 2009. For these surveys, about 350 soldiers from several units each year were "tasked" to report to the post's movie theatre, where we provided the surveys. Soldiers completed them on-site and turned them in. These also were sent to the contractor. After coding, staff worked with the contractor to identify the matches between the baseline and follow-up surveys. Of the 4,061 respondents in the baseline survey group, 199 had matches in the follow-up surveys. These matched observations are used in this report. In addition, there were 293 observations in the comparison group from the January 2008 and 2009 survey events.

The course provided by San Diego City College is substantively similar to the course they provide to the Navy, adapted as needed for the Army. During the period of the study, the course was presented in a two-day format (approximately 16 hours of instruction), generally on consecutive Saturdays. In late 2008, it was revised to be delivered in a one-day (8 hours) format. The course covers the topics of budgeting, credit, consumer awareness, purchasing a motor vehicle, insurance, the Thrift Savings Plan (TSP) and investing, with substantial amounts of time spent on purchasing vehicles and the TSP.

In order to measure "good" and "bad" behaviors, we included measures of specific money management behaviors. These were aggregated into an index of levels of good financial management and bad financial management. We used ordered logits to model whether individuals were "high," "medium," or "low" on good and bad financial management behavior indices. Then, we created a hybrid measure of the good and bad behaviors. Ideally, soldiers would be high on the good behavior index and low on the bad behavior index (that is, they would do a lot of the good behaviors and very few of the bad behaviors). We also modeled this composite measure with ordered logit. The "good" and "bad" behavior indices included the items listed in Table 1.

Table 1.

<u>Good and Bad Money Management Behaviors</u>
in percentages except where noted

		Education oups	
	Baseline	Follow-up	Comparison Group
Good Money Mana	gement Behav	viors	
Use either formal or informal budgeting	64.48	67.37	68.23
Use a formal budget for spending <sup>b</sup>	33.89	28.72	41.39
Use an informal budget for spending	42.08	51.58	43.75
Understand the difference between discretionary & non-discretionary spending <sup>ab</sup>	55	66.67	53.51
Comparison shop for credit <sup>b</sup>	32.22	40.31	31.87
Comparison shop for investment	30.94	36.51	31.13
Comparison shop for major purchases <sup>a</sup>	64.61	71.35	64.6
Review magazines before a major purchase	38.89	42.94	37.1
Read about money management through magazines <sup>a</sup>	26.52	39.27	30.4
Check the balance in your checking account during the month	88.11	87.96	88.04
Track spending periodically	84.32	82.72	80.87

Have a savings account	73.33	78.35	75.61						
Have an emergency fund	31.89	38.14	37.41						
Have a retirement plan (TSP, IRA, or 401K) <sup>ab</sup>	26.04	48.7	34.3						
Bad Money Management Behaviors									
Used a payday loan	5.43	2.09	5.02						
Used a pawn shop to get cash	6.52	3.66	6.79						
Used food stamps	5.98	3.66	3.94						
Bought supplemental life insurance <sup>ac</sup>	13.11	4.19	3.94						
Been turned down for credit	13.66	16.84	20.07						
Fallen behind in rent/mortgage payments	4.89	3.66	5.02						
Bounced a check	6.53	6.03	7.17						
Paid an overdraft fee <sup>c</sup>	29.89	38.5	47.81						
Been called by a debt collector	23.85	24.41	26.3						
Utilities were shut off due to nonpayment	9.38	7.26	8.75						
Returned from deployment for financial reasons	4.8	4.03	4.94						
Been denied security clearance for financial reasons	8.8	4.88	7.6						
Paid a credit card bill late	33.8	34.78	38.67						
Been late in paying other bills <sup>c</sup>	26.21	35.64	39.42						

- a Significant at 0.05 between baseline and follow-up groups
- b Significant at 0.05 between follow-up and comparison groups
- c Significant at 0.05 between baseline and comparison groups

In both indices, each reported behavior was assigned a value of 1 and then aggregated together. A frequency distribution was run on the indices, and they were subdivided into terciles. Soldiers reporting a large number of good behaviors (greater than nine) were placed in a "high good" category. Soldiers reporting five to eight good behaviors were placed in the "medium good" category. The remainder were placed in the "low good" category.

The bad index was produced in a similar fashion. Additionally in the bad index, behaviors that were considered to be particularly bad or distracting to a soldier's ability to work were weighted. Thus, soldiers that reported being returned from deployment, losing a security clearance, having utilities shut off or being called by a debt collector were automatically placed in the "high bad" category. After this initial cut, soldiers reporting more than three bad behaviors were placed in the "high bad" category. Those reporting one or two bad behaviors appeared in the "medium bad" category, and those that did not report any bad behaviors were placed in the "low bad" category.

The relationship between taking the course and better behavior in the indices was measured in a multivariate framework using ordered logistic regression. The dependent variables were the good index, the bad index, and a combined index (that looked at soldiers that fell into the "low good, high bad," "medium good, medium bad," and "high good, low bad" categories). The independent variables were: participating in the financial education course, having a high school financial education course, having a savings account in high school, years in the military, pay grade, gender, level of education, race, marital status, awareness of parental financial situation, money management self assessment, having a credit card, and perceived level of stress. Stress was measured as an aggregate based on soldiers' responses to the following three measures:

- How do you feel about your family's financial condition over the past 6 months? (5 point scale -- comfortable and secure to in over your head)
- How would you relate your financial stress level on a scale of 1 to 10 (overwhelming to no stress at all)?
- How frequently do you find yourself living paycheck to paycheck, on a scale of 1 to 10 (all the time to never)?

These measures were combined with a standard set of demographic and socio-economic control variables to assess the impact of selected measures on the probability of being a good, medium, or bad money manager, based on good and bad behavior categories.

#### Results

Soldiers in our sample were in their early 20's, and predominantly male (86%, Table 2). There are a number of other characteristics that relate closely to the age of the respondents. As might be expected when studying a population in their early 20's, 70% of the soldiers in our baseline survey were single; by the time of the follow-up surveys, 54% were still single. About two-fifths (40%) of the soldiers in this study had some post-secondary education.

Because the financial education course was delivered during the soldiers' Advanced Individualized Training, or AIT (generally received within the first year of military service), the majority of the soldiers in the baseline survey (92%) had less than one year of military service. By the time of the first follow-up survey, about two-fifths (40%) had more than one year, but less than 3 years of service.

Table 2. Participant Soldier Demographics

			1	. 1
110 1	nargantagae	avaant	TTIDATA	notod
1111	percentages	CALCIL	WHELE	HOLEU

	Financial E	Financial Education Groups			
	Baseline	Follow-up	Comparison Group		
Number of observations	199	199	293		
In high school I took a class in finance/consumer education	38.66		35.29		
Length in military service <sup>abc</sup> Less than 1					
year	91.89	59.48	21.23		
More than 1 year, but less than 2	5.41	33.99	32.53		
More than 2 years, but less than 3	1.08	5.88	8.22		
3 or more years	1.62	0.65	38.01		
Pay grade abc					
E1	44.16	14.72	5.14		
E2	34.01	30.46	15.07		
E3	20.30	45.18	36.64		
E4	1.52	9.14	31.16		
E5	0.00	0.00	7.19		
E6 and above	0.00	0.51	4.79		
Education High school					
diploma	46.19	41.84	46.74		
GED	19.29	17.86	17.18		
Some college or tech certificate	28.93	31.12	31.96		
2-year degree	4.57	5.12	2.06		
4-year degree	1.02	3.06	1.37		
Other	0.00	1.02	0.69		
Male	85.64		85.62		
Ethnicity* White <sup>c</sup>	86.19		65.02		
Black/African American	8.53		13.58		
Hispanic-Latino	20.00		20.66		
Asian	4.76		2.28		
American Indian/Alaska Native	2.46		4.18		

Othe	3.23		7.22
Marital status <sup>ac</sup>			
Single	69.70	54.31	48.80
Married	27.78	40.61	42.61
Divorceo	2.03	3.05	5.15
Separated	0.50	2.03	3.09
Widowed			0.34
While growing up, I was aware of parents financial situation <sup>c</sup>	80.93		68.40
Soldiers who consider themselves a good money manager <sup>bc</sup>	64.74	60.21	49.11
Have credit cards <sup>ac</sup>	39.79	50.52	54.61
Stress index <sup>c</sup> Stress			
index=0	64.80	57.30	54.19
Stress index=	25.14	24.86	26.43
Stress index=2	5.59	10.81	10.79
Stress index=3	4.47	7.03	8.59

<sup>\*</sup>Components do not sum to 100% because some respondents reported more than one ethnicity

- -- does not apply
- a Significant at 0.05 between baseline and follow-up groups
- b Significant at 0.05 between follow-up and comparison groups
- c Significant at 0.05 between baseline and comparison groups

Pay grade, or rank, is closely correlated with length of service; three-fourths (78%) of those in the baseline survey were E1 or E2. By the time of the first follow-up, 45% were still E1 or E2, but 54% were now in the higher pay grades of E3 or E4.<sup>5</sup>

For many of these characteristics, soldiers in the comparison group were different. While still predominantly male, they were slightly older, with more military experience, and in higher pay grades. There was no difference in marital status between soldiers in the follow-up survey and those in the comparison group.

## Good, Bad, and Combined Behaviors

Regression coefficients and odds ratios from the ordered logits are presented in Appendix Table A; because ordered logit coefficients are difficult to interpret, we provide a set of probabilities that form the basis for this discussion (Table 3). A number of the independent and control variables were significantly associated with being a good or poor money manager (as specified in the indices). These included having a savings account in high school, being male, having education beyond high school, being married, being aware of your parents' financial situation, thinking of yourself as a good money manager, and feeling financially stressed. Having a savings account in high school and stress level are also significantly associated with the combination of rating high on good money management behaviors and low on bad money management behaviors (as specified in the combined index).

While the financial education intervention was not associated with being a good money manager, those who had a savings account in high school – an experiential measure – had a 30% probability of being in the high-good category and had a nearly 14% probability of being in the high good/low bad category, both higher than overall averages.

Several other demographic measures were significantly associated with being a good money manager (gender, education, marital status). Males had a higher probability of being a good money manger (26%, compared with 19% for females). Those with a 2- or 4-year college degree were substantially more likely to be a good money manager (78% compared with 18% for the base group of those with a high school education). They were also more likely to be in the "high bad" group (64%, compared with 40% of those with a high school education). Married respondents had a higher probability of being in the "high good" money manager group, compared with their single counterparts (36% and 14% respectively).

Table 3.

<u>Probabilities for Money Management Categories</u>
predicted probabilities generated from ordered logistic regression

predicted probab			ehavior ind			behavior in	ndex	С	ombined indi	ces
		2			3000			Low	Medium	
	N	Low bad	Medium bad	High bad	Low good	Medium good	High good	good, high bad	good, medium bad	High good, low bad
N		101	108	165	76	157	89	32	256	34
Actual		0.270	0.289	0.441	0.236	0.488	0.276	0.099	0.795	0.106
Predicted		0.274	0.285	0.441	0.267	0.483	0.251	0.099	0.794	0.107
Had financial ed course	71	0.296	0.281	0.423	0.229	0.508	0.264	0.071	0.817	0.112
Did not have financial ed course	236	0.267	0.286	0.446	0.278	0.475	0.247	0.108	0.787	0.105
Took finance or consumer ed course in										
No finance or consumer ed course in high	113	0.298	0.293	0.409	0.120	0.486	0.314	0.065	0.789	0.146
school Had savings	194	0.260	0.281	0.460	0.306	0.480	0.214	0.119	0.797	0.084
account in high school	180	0.305	0.291	0.403	0.205	0.490	0.305	0.064	0.798	0.138
No high school savings										
account Years in	127	0.230	0.277	0.493	0.354	0.472	0.174	0.148	0.789	0.062
military (at follow-up)										
<1 (base)	80	0.347	0.295	0.358	0.359	0.484	0.162	0.113	0.815	0.072
>1 but <2	112	0.229	0.282	0.489	0.285	0.490	0.225	0.124	0.798	0.079
>2 but <3	21	0.225	0.263	0.512	0.255	0.512	0.233	0.070	0.795	0.135
3 or more	94	0.277	0.286	0.438	0.169	0.466	0.365	0.064	0.772	0.164
Pay grade (at follow-up)										
E1 (base)	23	0.367	0.295	0.338	0.322	0.510	0.168	0.084	0.827	0.089
E2	64	0.275	0.284	0.441	0.361	0.489	0.150	0.162	0.786	0.051
E3	113	0.266	0.291	0.443	0.291	0.485	0.223	0.097	0.804	0.099
E4	80	0.235	0.275	0.490	0.170	0.475	0.355	0.075	0.792	0.133
E5 or higher	27	0.340	0.286	0.375	0.179	0.456	0.366	0.043	0.750	0.207
Male	263	0.286	0.289	0.426	0.251	0.488	0.261	0.094	0.799	0.107
Female	44	0.205	0.263	0.532	0.359	0.451	0.190	0.128	0.766	0.106
Education (at follow-up)										

Consumer Interests Annual Volume 56, 2010

Single (hase)   190   0.306   0.295   0.400   0.318   0.504   0.178   0.109   0.808   0.083	High school or										
Certificate, or other   101   0.233   0.273   0.494   0.207   0.482   0.311   0.093   0.772   0.134	GED (base)	190	0.306	0.295	0.400	0.318	0.504	0.178	0.109	0.808	0.083
Certificate, or other	_										
Online   O											
2- or 4-year degree	· ·	101	0.222	0.072	0.404	0.207	0.402	0.211	0.002	0.772	0.124
Marical Status (at follow-up)   148   0.287   0.298   0.494   0.420   0.238   0.490   0.278   0.290   0.794   0.101   0.796   0.101   0.796   0.101   0.201		101	0.233	0.273	0.494	0.207	0.482	0.311	0.093	0.772	0.134
Race/Ethnicity   White (base)   208   0.281   0.285   0.434   0.284   0.476   0.240   0.105   0.796   0.100     African   American   32   0.217   0.270   0.513   0.229   0.510   0.261   0.083   0.831   0.087     Hispanic   50   0.278   0.294   0.428   0.235   0.490   0.275   0.092   0.783   0.125     All other races   33   0.257   0.297   0.446   0.277   0.482   0.242   0.089   0.794   0.118     Marrial Status   Garage   146   0.317   0.291   0.392   0.369   0.488   0.143   0.121   0.818   0.061     Married   138   0.243   0.282   0.475   0.157   0.477   0.367   0.063   0.776   0.161     Divorced, separated, widowed   23   0.184   0.266   0.550   0.278   0.483   0.238   0.177   0.754   0.069     Aware of parent's financial situation   218   0.287   0.293   0.420   0.222   0.487   0.290   0.073   0.797   0.130     Not aware of parent's financial situation   89   0.243   0.265   0.492   0.375   0.471   0.154   0.164   0.788   0.048     Think of myself as good money manager (at follow-up)   148   0.363   0.308   0.328   0.174   0.472   0.354   0.041   0.791   0.168     Do not think of myself as good money manager   159   0.191   0.263   0.546   0.353   0.492   0.155   0.153   0.797   0.050     Have a credit card (at follow-up)   165   0.250   0.280   0.470   0.197   0.485   0.318   0.075   0.797   0.128     Do not have a credit card (at follow-up)   165   0.250   0.280   0.470   0.197   0.485   0.318   0.075   0.797   0.198     Do not have a credit card (at follow-up)   165   0.250   0.280   0.470   0.197   0.485   0.318   0.075   0.797   0.082     Stress index=0   140   0.393   0.316   0.291   0.211   0.490   0.299   0.037   0.798   0.165     Stress index=2   40   0.130   0.231   0.638   0.312   0.497   0.191   0.162   0.793   0.045     Stress index=2   40   0.130   0.231   0.638   0.312   0.497   0.191   0.162   0.793   0.045		1.4	0.122	0.229	0.640	0.022	0.106	0.791	0.010	0.772	0.200
White (base)         208         0.281         0.285         0.434         0.284         0.476         0.240         0.105         0.796         0.100           African American         32         0.217         0.270         0.513         0.229         0.510         0.261         0.083         0.831         0.087           Hispanic         50         0.278         0.294         0.428         0.235         0.490         0.275         0.092         0.783         0.125           All other races         33         0.257         0.297         0.446         0.277         0.482         0.242         0.089         0.794         0.118           Marital Status (at follow-up)         146         0.317         0.291         0.392         0.369         0.488         0.143         0.121         0.818         0.061           Marital Status (at follow-up)         148         0.243         0.282         0.475         0.157         0.477         0.367         0.063         0.776         0.161           Divorced, separated, widowed         23         0.184         0.266         0.550         0.278         0.483         0.238         0.177         0.754         0.069           Aware of parent's financial situati		14	0.122	0.236	0.040	0.023	0.190	0.761	0.019	0.773	0.208
African American   32   0.217   0.270   0.513   0.229   0.510   0.261   0.083   0.831   0.087	-	200	0.201	0.205	0.424	0.204	0.476	0.240	0.105	0.707	0.100
American   32   0.217   0.270   0.513   0.229   0.510   0.261   0.083   0.831   0.087		208	0.281	0.285	0.434	0.284	0.476	0.240	0.105	0.796	0.100
Hispanic   50   0.278   0.294   0.428   0.235   0.490   0.275   0.092   0.783   0.125     All other races   33   0.257   0.297   0.446   0.277   0.482   0.242   0.089   0.794   0.118     Marital Status (at follow-up)     Single (base)   146   0.317   0.291   0.392   0.369   0.488   0.143   0.121   0.818   0.061     Married   138   0.243   0.282   0.475   0.157   0.477   0.367   0.063   0.776   0.161     Divorced, separated, widowed   23   0.184   0.266   0.550   0.278   0.483   0.238   0.177   0.754   0.069     Aware of parent's financial situation   218   0.287   0.293   0.420   0.222   0.487   0.290   0.073   0.797   0.130     Not aware of parent's financial situation   89   0.243   0.265   0.492   0.375   0.471   0.154   0.164   0.788   0.048     Think of myself as good money manager (at follow-up)   148   0.363   0.308   0.328   0.174   0.472   0.354   0.041   0.791   0.168     Do not think of myself as good money manager   159   0.191   0.263   0.546   0.353   0.492   0.155   0.153   0.797   0.050     Have a credit card (at follow-up)   165   0.250   0.280   0.470   0.197   0.485   0.318   0.075   0.797   0.128     Do not have a credit card (at follow-up)   165   0.250   0.280   0.470   0.197   0.485   0.318   0.075   0.797   0.128     Do not have a credit card (at follow-up)   165   0.250   0.280   0.470   0.197   0.485   0.318   0.075   0.797   0.082     Stress index=0   140   0.393   0.316   0.291   0.211   0.490   0.299   0.037   0.798   0.165     Stress index=0   140   0.393   0.316   0.291   0.211   0.490   0.299   0.037   0.793   0.045     Stress index=0   40   0.130   0.231   0.638   0.312   0.497   0.191   0.162   0.793   0.045		22	0.217	0.270	0.512	0.220	0.510	0.261	0.002	0.821	0.097
All other races   33   0.257   0.297   0.446   0.277   0.482   0.242   0.089   0.794   0.118     Marital Status (at follow-up)   Single (base)   146   0.317   0.291   0.392   0.369   0.488   0.143   0.121   0.818   0.061     Married   138   0.243   0.282   0.475   0.157   0.477   0.367   0.063   0.776   0.161     Divorced, separated, widowed   23   0.184   0.266   0.550   0.278   0.483   0.238   0.177   0.754   0.069     Aware of parent's financial situation   218   0.287   0.293   0.420   0.222   0.487   0.290   0.073   0.797   0.130     Not aware of parent's financial situation   89   0.243   0.265   0.492   0.375   0.471   0.154   0.164   0.788   0.048     Think of myself as good money manager (at follow-up)   148   0.363   0.308   0.328   0.174   0.472   0.354   0.041   0.791   0.168     Do not think of myself as good money manager   159   0.191   0.263   0.546   0.353   0.492   0.155   0.153   0.797   0.050     Have a credit card (at follow-up)   165   0.250   0.280   0.470   0.197   0.485   0.318   0.075   0.797   0.128     Do not have a credit card (at follow-up)   165   0.250   0.280   0.470   0.197   0.485   0.318   0.075   0.797   0.082     Stress index=0   140   0.393   0.316   0.291   0.211   0.490   0.299   0.037   0.798   0.165     Stress index=2   40   0.130   0.231   0.638   0.312   0.497   0.191   0.162   0.793   0.045											
Marital Status (at follow-up)         146         0.317         0.291         0.392         0.369         0.488         0.143         0.121         0.818         0.061           Married Divorced, separated, widowed 23         0.184         0.266         0.550         0.278         0.483         0.238         0.177         0.754         0.069           Aware of parent's financial situation         218         0.287         0.293         0.420         0.222         0.487         0.290         0.073         0.797         0.130           Not aware of parent's financial situation         89         0.243         0.265         0.492         0.375         0.471         0.154         0.164         0.788         0.048           Think of myself as good money manager (at follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.0	•										
Single (base)   146   0.317   0.291   0.392   0.369   0.488   0.143   0.121   0.818   0.061	All other races	33	0.257	0.297	0.446	0.277	0.482	0.242	0.089	0.794	0.118
Single (base)   146   0.317   0.291   0.392   0.369   0.488   0.143   0.121   0.818   0.061											
Married Divorced, separated, widowed 23         0.184         0.266         0.550         0.278         0.483         0.238         0.177         0.754         0.069           Aware of parent's financial situation         218         0.287         0.293         0.420         0.222         0.487         0.290         0.073         0.797         0.130           Not aware of parent's financial situation         89         0.243         0.265         0.492         0.375         0.471         0.154         0.164         0.788         0.048           Think of myself as good money manager (at follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127 </td <td>(at follow-up)</td> <td></td> <td></td> <td></td> <td> </td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	(at follow-up)										
Divorced, separated, widowed   23   0.184   0.266   0.550   0.278   0.483   0.238   0.177   0.754   0.069	Single (base)	146	0.317	0.291	0.392	0.369	0.488	0.143	0.121	0.818	0.061
Separated, widowed   23   0.184   0.266   0.550   0.278   0.483   0.238   0.177   0.754   0.069		138	0.243	0.282	0.475	0.157	0.477	0.367	0.063	0.776	0.161
widowed         23         0.184         0.266         0.550         0.278         0.483         0.238         0.177         0.754         0.069           Aware of parent's financial situation         218         0.287         0.293         0.420         0.222         0.487         0.290         0.073         0.797         0.130           Not aware of parent's financial situation         89         0.243         0.265         0.492         0.375         0.471         0.154         0.164         0.788         0.048           Think of myself as good money manager (at follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not bave a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127											
Aware of parent's financial situation 218 0.287 0.293 0.420 0.222 0.487 0.290 0.073 0.797 0.130 Not aware of parent's financial situation 89 0.243 0.265 0.492 0.375 0.471 0.154 0.164 0.788 0.048 Think of myself as good money manager (at follow-up) 148 0.363 0.308 0.328 0.174 0.472 0.354 0.041 0.791 0.168 Do not think of myself as good money manager 159 0.191 0.263 0.546 0.353 0.492 0.155 0.153 0.797 0.050 Have a credit card (at follow-up) 165 0.250 0.280 0.470 0.197 0.485 0.318 0.075 0.797 0.128 Do not have a credit card ard (at follow-up) 140 0.393 0.316 0.291 0.407 0.348 0.480 0.172 0.127 0.791 0.082 Stress index=0 140 0.393 0.316 0.291 0.211 0.490 0.299 0.037 0.798 0.165 Stress index=2 40 0.130 0.231 0.638 0.312 0.497 0.191 0.162 0.793 0.045			0.404					0.000			0.010
Do not think of myself as good money manager   159   0.191   0.263   0.546   0.353   0.492   0.155   0.153   0.797   0.168   0.100   0.000		23	0.184	0.266	0.550	0.278	0.483	0.238	0.177	0.754	0.069
financial situation         218         0.287         0.293         0.420         0.222         0.487         0.290         0.073         0.797         0.130           Not aware of parent's financial situation         89         0.243         0.265         0.492         0.375         0.471         0.154         0.164         0.788         0.048           Think of myself as good money manager (at follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798<											
situation         218         0.287         0.293         0.420         0.222         0.487         0.290         0.073         0.797         0.130           Not aware of parent's financial situation         89         0.243         0.265         0.492         0.375         0.471         0.154         0.164         0.788         0.048           Think of myself as good money manager (at follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798											
Not aware of parent's financial situation   89   0.243   0.265   0.492   0.375   0.471   0.154   0.164   0.788   0.048		218	0.287	0.203	0.420	0.222	0.487	0.200	0.073	0.707	0.130
Do not think of myself as good money manager   159   0.191   0.263   0.346   0.353   0.492   0.375   0.471   0.154   0.164   0.788   0.048		210	0.267	0.293	0.420	0.222	0.467	0.290	0.073	0.797	0.130
financial situation         89         0.243         0.265         0.492         0.375         0.471         0.154         0.164         0.788         0.048           Think of myself as good money manager (at follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045											
situation         89         0.243         0.265         0.492         0.375         0.471         0.154         0.164         0.788         0.048           Think of myself as good money manager (at follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045											
myself as good money manager (at follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045 <td></td> <td>89</td> <td>0.243</td> <td>0.265</td> <td>0.492</td> <td>0.375</td> <td>0.471</td> <td>0.154</td> <td>0.164</td> <td>0.788</td> <td>0.048</td>		89	0.243	0.265	0.492	0.375	0.471	0.154	0.164	0.788	0.048
money manager (at follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045	Think of										
manager (at follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045	myself as good										
follow-up)         148         0.363         0.308         0.328         0.174         0.472         0.354         0.041         0.791         0.168           Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045											
Do not think of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045											
of myself as good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045		148	0.363	0.308	0.328	0.174	0.472	0.354	0.041	0.791	0.168
good money manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045											
manager         159         0.191         0.263         0.546         0.353         0.492         0.155         0.153         0.797         0.050           Have a credit card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045											
Have a credit card (at follow-up) 165 0.250 0.280 0.470 0.197 0.485 0.318 0.075 0.797 0.128  Do not have a credit card 142 0.302 0.291 0.407 0.348 0.480 0.172 0.127 0.791 0.082  Stress index=0 140 0.393 0.316 0.291 0.211 0.490 0.299 0.037 0.798 0.165  Stress index=1 90 0.233 0.305 0.461 0.290 0.461 0.249 0.101 0.820 0.080  Stress index=2 40 0.130 0.231 0.638 0.312 0.497 0.191 0.162 0.793 0.045		150	0.101	0.262	0.546	0.252	0.402	0.155	0.152	0.707	0.050
card (at follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045		139	0.191	0.203	0.340	0.333	0.492	0.133	0.133	0.797	0.030
follow-up)         165         0.250         0.280         0.470         0.197         0.485         0.318         0.075         0.797         0.128           Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045											
Do not have a credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045	,	165	0.250	0.280	0.470	0.197	0.485	0.318	0.075	0.797	0.128
credit card         142         0.302         0.291         0.407         0.348         0.480         0.172         0.127         0.791         0.082           Stress index=0         140         0.393         0.316         0.291         0.211         0.490         0.299         0.037         0.798         0.165           Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045											
Stress index=1         90         0.233         0.305         0.461         0.290         0.461         0.249         0.101         0.820         0.080           Stress index=2         40         0.130         0.231         0.638         0.312         0.497         0.191         0.162         0.793         0.045		142	0.302	0.291	0.407	0.348	0.480	0.172	0.127	0.791	0.082
Stress index=2 40 0.130 0.231 0.638 0.312 0.497 0.191 0.162 0.793 0.045	Stress index=0	140	0.393	0.316	0.291	0.211	0.490	0.299	0.037	0.798	0.165
Stress index=2 40 0.130 0.231 0.638 0.312 0.497 0.191 0.162 0.793 0.045		90			0.461		0.461	0.249		0.820	
Stress index=3   37   0.079   0.177   0.743   0.372   0.490   0.138   0.262   0.721   0.017	Stress index=3	37	0.079	0.177	0.743	0.372	0.490	0.138	0.262	0.721	0.017

Being aware of parents' financial situation was associated with being a good money manger -- 29% of those who were aware were predicted to be in the "high good" money manager group, compared with only 15% of those who were reportedly not aware of their parents' financial situation. Those who felt they were good managers

had a 35% probability of ranking high on good money management behaviors, compared with 15% of those who did not think of themselves as good managers.

Perceived stress was also associated with being a good money manager; furthermore it behaves monotonically. As levels of stress rise (i.e. respondents indicate they are stressed in one, two, or all three measures), the probability of being in the low-bad category declines and the probability of being in the high-bad category increases (from 29% of those with no reported stress measures to 74% of those reporting stress on all 3 stress measures). Similarly, those with more stress have lower probabilities of being in the high-good category (ranging from 30% of those with no stress down to 13% of those reporting stress on all 3 stress measures) and higher probabilities of being in the low-good category.

When looking at the combined indices, only having a savings account in high school and stress levels were significantly associated with scores on the combined index. Those who had a savings account in high school had probabilities of being in the "high-good/low-bad" group that were twice as high as those without an account (13% compared with 6%). The stress index was also associated with the combined index; and again the relationship was monotonic, with increasing proportions in the "low-good/high-bad" group and decreasing proportions in the "high-good/low-bad" group. Those who had the lowest levels of perceived stress had a higher probability of being in the high good/low bad category (nearly 17%, compared with between 2% of those with the highest stress levels).

#### Discussion

## What are the limitations of this study?

First, we want to recognize the limits of our sample. Soldiers have a specific set of characteristics, which means our results are not generalizable to the general public. Furthermore, even though our sample is composed primarily of young people, our results are not generalizable to all young people.

Second, we believe that education is necessary, but that education alone is not sufficient to establish financially secure families and households. Important complements include access to information, access to financial counseling and advising, and public policies that provide consumer protection.

### Conclusions

This paper explored the correlates of being a good or poor money manager, as measured by aggregating good and bad money management behaviors. We find that measures of previous experience (having a savings account in high school, being aware of parents' financial situation), along with some demographic characteristics, attitudes, and perceived stress are all significantly associated with aggregated good and bad money management behaviors. Of note, the financial education course was not associated with the aggregate measures we created. One possible future direction for research would be to dis-aggregate these measures and discern where more specific differences lay.

Our study's focus on reported behaviors (budgeting, saving, paying credit card bills, and so forth) precludes the analysis of more nuanced progress resulting from the financial education course. We know that for some financial behaviors, people can be at different pre-action stages (precontemplation, contemplation, preparation; Xiao et al., 2004). Our particular survey did not measure where soldiers were on the behavior continuum or whether they moved from one stage to another. For example, if a soldier in the class was moved from being unaware of the TSP (precontemplation) to thinking about signing up for the TSP (contemplation) to getting some of the forms and materials to study (preparation), we could say the class had an effect; however, we did not measure these more subtle behavioral changes. Thus, we may have missed some of the impacts of the financial education program by focusing on actual behaviors rather than also including planned behaviors.

A general observation about this study is that it measures financial education in only one particular format – a formal classroom with highly structured presentations. It is very possible that the format of the educational experience matters. Alternative formats, such as simulations, experiential events, activity-based learning, and case studies may increase the relevance as well as the retention of information. For example, in our interviews, unit leaders spoke of rent-to-own transactions as a source of financial stress for their troops. Providing a case study or simulation of a rent-to-own experience may be more effective at giving soldiers some resistance for rent-to-own sales pitches than viewing slides in a lecture.

Furthermore, retention of the information might be enhanced when accountability is enforced through an assignment or test. Incentives for being able to demonstrate learning could be rendered either as penalties for failure, or rewards for success. A suggested method for incentivizing retention of course material might be to offer a non-mandatory assignment and reward completion with discounts to a local business or extra liberty.

The largest factors that appeared to impact good money management involved education -- 78% of those with a 2- or 4-year degree were "good" money managers (compared with 18% of high-school educated respondents). Learning to learn may be an important consideration for structuring financial education programs. For financial educators, this may mean more careful learner assessments prior to instruction. For policy makers, this may mean reviewing curriculum requirements so that schools provide the literacy, numeracy, and critical thinking skills that lay the foundation for "learning to learn."

### Endnotes

- 1. Contact author is Jeanne Hogarth, manager, Consumer Education & Research, Consumer & Community Affairs, Mail Stop 805, Federal Reserve Board, 20<sup>th</sup> & C Streets N.W., Washington DC 20551; 202-785-6024 (phone); 202-785-6085 (fax); <a href="mailto:jeanne.m.hogarth@frb.gov">jeanne.m.hogarth@frb.gov</a>. The analysis and conclusions set forth in this presentation represent the work of the authors and do not indicate concurrence of the Federal Reserve Board, the Federal Reserve Banks, or their staff. Mention or display of a trademark, proprietary product, or firm in the presentation by the author does not constitute an endorsement or criticism by the Federal Reserve System and does not imply approval to the exclusion of other suitable products or firms.
- 2. AIT generally takes place immediately after basic training; depending on the course of instruction, it can last between 6 to 12 weeks. After AIT, the soldiers are posted to their first official duty station. In this study, the air defenders were affected by deployments and by base re-alignment and closing provisions; toward the end of the study, air defenders were re-posted to Ft. Sill, OK.
- 3. Early in the study, we used a web-based survey design; this proved unsuccessful for a variety of reasons and we switched to the paper and pencil method.
  - 4. Matches were affected by deployments and by base re-alignment and closing provisions.
- 5. Monthly pay for an E1 with less than 2 years of experience was \$1,400 per month in 2009 (\$16,800 annually); monthly pay for an E4 with between 2 and 3 years of service is \$1,921 (\$23,052 annually; U.S. Military.com, 2009).

# Appendix

Table A. Ordered Logit Regression Coefficients and Odds Ratios

	Bad index		Good	index	Combined indices	
						Odds
	Coefficient	Odds Ratio	Coefficient	Odds Ratio	Coefficient	Ratio
Had financial ed course	30	.74	.31	1.37	.70	2.01
Took finance or consumer ed						
course in high school	0.11	1.59	.32	1.37	.43	1.31
Had savings account in high	0.22	72	70***	2.06	.85**	2.25
school Years in military (at follow-	-0.33	.72	.72***	2.06	.85***	2.35
up)						
<1 (base)						
>1 but <2	.47	1.59	.32	1.38	12	.89
>2 but <3	.39	1.48	.24	1.27	.67	1.96
Boy grade (at fallow yr)	.20	1.22	.78	2.19	.86	2.37
Pay grade (at follow-up)						
E1 (base)	.19	1.21	27	.77	 71	.49
E2 E3	25	.78	21	.81	.07	1.08
E3	04	.96	.18	1.19	18	.84
E5 or higher	97	.38	25	.77	.51	1.67
Male	34	.71	.62*	1.87	.01	1.07
Education (at follow-up)	54	./1	.02	1.07	.01	1.01
•						
High school or GED (base)						
Some college, tech certificate, or other	30	1 2/	.53*	1.70	25	1 //2
2- or 4-year degree	.30 1.66**	1.34 5.24	2.69***	1.70 14.76	.35	1.43
Race/Ethnicity	1.00	3.24	2.09	14.70	.20	1.52
White (base)						
African American	.28	1.33	.50	1.65	.09	1.10
Hispanic	28	.76	.20	1.23	.16	1.18
All other races	36	.70	.21	1.23	.97	2.64
		.,,	,			
Marital Status (at follow-up)						
Single (base)						
Married	.38	1.47	1.03***	2.79	.67*	1.95
Divorced, separated, widowed	.70	2.01	.29	1.34	69	.50
Aware of parent's financial						
situation	04	.96	.72**	2.06	.75*	2.12
Think of myself as good						
money manager (at follow-up)	70***	.50	.50*	1.65	.64	1.90
Have a credit card (at follow-						
up)	.23	1.26	.63**	1.87	.45	1.57
Financially stressed	.60***	1.81	27**	.76	76***	.47
LR Chi2	62.83***		93.95***		67.23***	

Pseudo R2	.10	.17	.20	

<sup>\*</sup> significant at .10

#### References

Bernanke, B.S. (2006) Financial literacy. Testimony before the Committee of Banking, Housing and Urban Affairs of the United States Senate (May 23). URL:

www.federalreserve.gov/boarddocs/testimony/2006/20060523/default.htm

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, 435-465.

Braunstein S. (2008) Financial literacy. Testimony before the Committee on Financial Services, U.S. House of Representatives, April 15. www.federalreserve.gov/newsevents/testimony/braunstein20080415a.htm

Cole & Shastry (2009) – from CA research conference in April: <a href="http://www.people.hbs.edu/scole/smarts-revised-08-02.pdf">http://www.people.hbs.edu/scole/smarts-revised-08-02.pdf</a>

Collins, J.M. & O'Rourke C. (2009) Still holding out promise: A review of financial literacy education and financial counseling studies. Paper presented at the Networks Financial Institute's conference, "Improving Financial Literacy and Reshaping Financial Behavior," Indiannapolis IN, May, 2009.

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.R., Scherpf, E.M., (2006) Translating financial education into behavior change for low-income populations. *Financial Counseling and Planning* 17(2): 27-45.

Willis, L.E. (2008). Evidence and ideology in assessing the effectiveness of financial literacy education. University of Pennsylvania Law School, Public Law Research Paper No. 08-08. Available at SSRN: <a href="http://ssrn.com/abstract=1098270">http://ssrn.com/abstract=1098270</a>

Willis, L.E. (2008) Against financial literacy education. Available at <a href="www.bepress.com/lauren\_willis/1">www.bepress.com/lauren\_willis/1</a> Xiao, J.J., Newman, B.M., Prochaska, J.; Leon, B.; Bassett, R.L.; & Johnson, J.L. (2004) Applying the transtheoretical model of change to consumer debt behavior. *Financial Counseling and Planning*, 15(2): 89-100. URL: <a href="www.afcpe.org/doc/Vol1529.pdf">www.afcpe.org/doc/Vol1529.pdf</a>

<sup>\*\*</sup> significant at .05

<sup>\*\*\*</sup> significant at .01