

## **Consumer Literacy and Creditworthiness**

Marsha Courchane  
Welch Consulting  
[mcourchane@welchcon.com](mailto:mcourchane@welchcon.com)

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Peter Zorn  
Freddie Mac  
[peter\\_zorn@freddiemac.com](mailto:peter_zorn@freddiemac.com)

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In this research we use the data gathered through a survey conducted by Freddie Mac to examine the relationship between consumer financial knowledge, consumer behavior, and credit outcomes. The survey was designed to identify factors that might contribute to any credit or payment difficulties on the part of consumers. The survey gathered detailed information on individuals' self-reported use of credit, and we link that information with the individual's publicly recorded credit record. The information gathered in the survey included experience, attitudes, behaviors, and perceptions of credit; sources of information about financial matters; measures of knowledge and familiarity with finances; and demographic factors and psychological characteristics of the respondent. We use the survey responses combined with credit bureau information obtained from Experian to help understand how financial knowledge can impact a consumer's behavior and how that behavior, in turn, can lead to particular credit outcomes.

## **1. Initial Findings**

The model proposed links consumer literacy, defined as self-assessed financial knowledge or objective knowledge, to behavioral patterns such as budgeting, saving, and shopping responsibly, and to actual credit market outcomes based on information on individual credit bureau reports. This model is the one upon which much public policy implicitly relies (e.g., credit counseling, education, and early intervention). Our findings broadly support that policy structure and paradigm. We find that the single largest predictor of responsible behaviors is financial knowledge. Given this survey, self-assessed knowledge matters much more than does "objective" knowledge. We interpret this to mean that consumer literacy (knowledge and internalization of financial rules of thumb--don't spend more than you earn, basic budgeting, and paying bills on time) matter more than might the ability to understand a discount rate or the intricacies of credit reports. Consumer behavioral patterns are the second most predictive component of the equation predicting whether or not consumers will have "impaired" credit.

Interestingly, while consumer literacy interventions directly impact behavior in a significant way, these do not have a direct effect on credit outcomes when examined in a reduced-form framework except through formal education. Learning through courses, seminars, or from parents may affect the self-assessed perception of knowledge (and, hence, behavior, and credit outcomes), but those do not directly significantly affect outcomes. Credit counseling, on the other hand, improves consumer literacy and has a significant impact, for those with counseling, on credit outcomes, with those having previous counseling more than five years ago likely to do better. Those with recent counseling do less well, but that might reflect endogeneity – the counseling results from bad credit outcomes. We find that homeownership exerts a positive influence on credit outcomes in the reduced-form equations, possibly through the impact of increased financial responsibility on creditworthiness. As observed in previous studies, African Americans and Hispanics are more likely to have impaired credit relative to whites, while Asians are likely to have less impaired credit.

The largest contributors to self-assessed knowledge (in terms of marginal impact) were the group of "learning" variables (*learn from bad times, education, and learn from school*). The second group of variables with the most impact on self-assessed knowledge was the financial well-being group (*income, net worth, homeownership, and income relative to parents*). Other

variables had significant but small impacts. We observe slightly different results in the “objective” knowledge equation. While learning from bad times and formal education still have relatively large impacts, income and income relative to parents increase in the magnitude of their impacts. Counseling remains significant only if received more than five years earlier (or never). We find in the second stage that interacted knowledge (objective interacted with self-assessed knowledge) is by far the largest explanatory variable in terms of impact on behavior.

The group of “psychological” variables included measures for whether the respondent felt as though he/she took risks, was optimistic, worried about money, worried about short-run problems, felt in control, and could cope well with stress. As a group, these variables explained a large percentage of the variance in behavior, while income factors (including *safety net*) and knowledge also explained significant percentages of behavior (self-control). The demographic effects (age, kids, and gender) except race were insignificant, and while race explained a small amount of the variance in behavior, so did counting on God to solve problems.

We provide both structural equations and reduced-form results for credit outcomes. The largest explanatory variable in the structural, logit estimation of impaired credit is race, followed closely by behavior/self control. The presence of bad financial shocks (medical, tax, theft problems) also matters significantly. The most important of the financial variables was the presence of a financial safety net (helping weather shocks). Formal education remains important, with more schooling improving credit outcomes. One group of variables with some interest is that related to spousal interactions. When the respondent managed finances, credit outcomes were better than they were otherwise and were also better if the respondent and spouse agreed on financial matters. Similarly, spousal credit behavior impacted credit outcomes as did being left with bills by an ex-spouse.

Finally, in the reduced-form equation for credit outcomes, the primary factors explaining variance in credit outcomes are race, bad events (medical, tax, and theft problems), previous bad times, counseling, formal education, and the presence of a safety net. Clearly, if issues arose, and were dealt with (earlier counseling, the safety net), then the impact of bad events and bad times on credit could be ameliorated. If these avenues (counseling, education, safety net) are less available to minorities, they might find it more difficult to prevent unfortunate events from adversely impacting credit.

## **2. Overview of Survey and Data Development**

The analysis of this paper is based on information about 12,140 respondents compiled from three sources: survey data collected from individuals who responded to a 12-page consumer credit survey (CCS) questionnaire; demographic data kept on file by Market Facts, Inc. and The NPD Group to support their panels used for surveys; and individual credit data from Experian, a consumer credit repository agency.

The CCS was completed by panel members aged 20 to 40 with household incomes under \$75,000. These cutoffs were chosen to represent a segment of the population for which homeownership and credit issues are important. The CCS data development process of 1999 included two firms that maintain national databases of mail survey panels: Market Facts, Inc., the lead

firm on this project, and the NPD Group. The sample frame consisted of lists of pre-recruited survey respondents provided by the two survey panel companies. Since the members of these panels had agreed to complete surveys, the panels represent known populations with relatively high response rates. Both of these panels included more than 500,000 households covering the U.S. Panel information previously collected by Market Facts and NPD provided some background for sample selection but contained no credit information. Experian, Inc., a consumer credit repository, provided the credit data key to our study. The sample was selected on the basis of payment history in order to obtain an adequate sample with “impaired” credit. Freddie Mac assisted with survey design and initial analysis of some of the key data elements. Table 1 in Appendix A illustrates the roles of each agency in the development of the survey.

Market Facts and NPD prepared files containing the names and address of all available African-American, Hispanic, and Asian panel members meeting the age and income criteria, plus a geographically balanced sample of whites.<sup>1</sup> In their databases, married couple mail panel households designated one head of household as the primary contact, most often the female head. Since marital status was known, survey mailings were targeted to the male or female head of married panel members to ensure more gender balance in the responses.<sup>2</sup> Table 2 in Appendix A provides the racial/ethnic distribution in the file sent to Experian. The file included 68,854 single household members. For the purpose of this survey, respondents are classified into only one racial/ethnic group. While Hispanics can be of any race, we categorized those with minority racial status as that race, rather than Hispanic.

Next, Experian appended credit files to the name and address file provided. The process was designed to ensure confidentiality of consumer credit information in that neither the survey panel companies nor Freddie Mac could match an individual’s credit record to that individual’s name, address, or other unique identifying information. Experian matched and provided credit information for 85,597 individual householders and spouses (excluding the out-of-range Asians) or 91,223 (including out-of-range Asians). These matched files were used for selection of the survey samples. Table 3 (in Appendix A) shows the race/ethnic distribution of the panel members and their spouses after matching.<sup>3</sup>

If first name and race/ethnicity of spouses of panel members were not available, the following decision rules were adopted for the credit reporting agency to use for the purpose of achieving the greatest accuracy in the appending of credit records. An adult of the opposite

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<sup>1</sup> For the Asian sample, there were insufficient persons to achieve the sampling objectives. However, national estimates from the survey exclude Asians who are outside the age or income specifications.

<sup>2</sup> The CCS uses individuals, not households, as the unit of observation. Many, if not most, credit decisions involve more than one family or household member, and the survey includes several questions about the role of the spouse/partner in the questionnaire. While records can be merged, each individual consumer has his or her own payment and credit record. Attitudes, perceptions, and opinions, moreover, are inherently personal and require that survey participants answer as an individual, not a household.

<sup>3</sup> In mail panel households, one head of household is designated as the person to be the first recipient of all survey mailings/contacts. Typically, it is the female in married couple households. It was necessary to include panel member spouses as designated respondents to minimize gender bias.

gender living at the same address as a married panel member was assumed to be the spouse (or partner) and was deemed eligible for the sample. An individual classified as the spouse of the panel member was assumed to share the race/ethnicity category of the respective spouse/partner when this information was absent for the spouse. If no spouse was found for the married panelist, it is shown as “spouse not found” in Table 3.

After credit records for all panel members and married spouses (when found) were appended to the files, the files were forwarded to Freddie Mac, where each panelist was grouped into a credit quality group. The sampling plan partitioned by race/ethnicity (white, African-American, Hispanic, and Asians) and payment history (impaired, indeterminate, good, and non-matches).<sup>4</sup> Each panelist in the sample was categorized in one of three credit quality groups (“buckets”) using actual payment behavior extracted from credit files. The definitions of credit buckets used for our analysis are as follows:

**Impaired:** Respondents are “impaired” if they meet the following conditions:

- 90 days or more late or in derogatory status on one trade line in the past 24 months
- 30 days or more late on another trade line in the past 24 months

To be impaired, this group fell behind on their payments on at least two separate accounts in the last two years, and in at least one of these instances, they became as late as 90 days delinquent.

**Good:** People are put into the “good” bucket if they meet all of the following conditions:

- 30-60 days late on no more than one trade line in the past 24 months
- Never 90 days or more late or in derogatory status in the past 24 months
- Fewer than four instances of ever being 30 days late on a trade line
- No public records ever filed on any trade line

**Indeterminate:** People are put into the “indeterminate” credit bucket if they fit none of the other buckets.

**Non-matches:** People are put into the “nonmatch” bucket if Experian did not return credit record variables.<sup>5</sup>

People are excluded from our analysis if they have neither an impaired nor good payment record (i.e., have an “indeterminate” payment record) or if Experian was unable to match them to a credit record. Observations are weighted to adjust for this bucket definition.

Table 4 (Appendix A) shows the distribution, by data development phase, of race/ethnicity for panel members and married spouses for which Experian was able to match their records.

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<sup>4</sup> The goal was to obtain approximately 1,000 surveys in each of the 12 cells of this four-by-four matrix.

<sup>5</sup> Nonmatches could include those individuals not covered by Experian but may have records in other credit repository agencies or those individuals covered by Experian but whose name didn’t match. In the original sampling design, the nonmatches were combined with the good.

Market Facts and NPD mailed out almost 23,000 surveys to the pre-identified panel members and spouses. Slightly higher proportions were mailed to African-American and Hispanic panelists, as well as to male spouses of female panel members, in order to compensate for the known tendency of these groups to have lower survey response rates than whites and females, respectively. All of the Asian members on the two panels were sent surveys, since this is a segment that is dramatically underrepresented in the panels. Table 5 in Appendix A provides the distributions by race/ethnicity and payment history of the sample to whom surveys were mailed.

With respect to race/ethnicity, the respondent was classified based on the reported race/ethnicity from the survey. If the respondent did not answer the race/ethnicity questions, race/ethnicity was based on the panel company information or assumed for spouses to be the same as respondents. As previously stated, for the purpose of this survey, respondents are classified into only one racial/ethnic group. Thus, Hispanics who indicate that they are white are classified as Hispanic. The overwhelming majority of Hispanics fall in this racial group. Hispanics who report that they are African-American are grouped as African-American. Finally, Hispanics who report that they are Asian are classified as Hispanic. Table 6 (in Appendix A) shows the result of the original race/ethnicity by self-reported race/ethnicity.

A total of 12,140 questionnaires were returned, providing a response rate of more than 52 percent. The distribution of the final sample is provided in Table 7 in the Appendix with responses categorized by race/ethnicity, marital status, and credit bucket. The final sample allowed for a two-year relaxation on the age criteria. Respondents reporting their age on the questionnaire as between 18 and 42 were included. In addition, as income often is highly variable and reporting of income often is inaccurate, survey respondents were not excluded from the final data file based exclusively on the income they reported on the survey. The raw data were then weighted to approximate the national composition of the U.S. population of householders aged 20 to 40 with household incomes of less than \$75,000. This allows for analysis of the data both by sample cell and at the aggregate level.

The data have been weighted by those factors on which the sample was originally stratified, as well as some additional characteristics that tend to be highly correlated with issues of financial well being. These include:

- Race/ethnicity by gender
- Race ethnicity by payment history (“bucket”)
- Age
- Household income
- Household size

A form of marginal-based weighting known as “rim weighting” was used to simultaneously adjust for each of these factors. The weighting logic is based on a procedure of multivariate post hoc balancing, in which the population target distributions of the weighting factors are inputs to the weighting program. The weighting program uses an optimizing algorithm that seeks the best set of weights for all combinations of variable values or “cells.” When applied to the data, this yields the univariate target distributions on each variable as closely as possible. (See Appendix B for the target population distributions used.)

After Market Facts cleaned, edited, and weighted the data, files were sent to Freddie Mac where alternative credit bucket definitions were developed and for which Market Facts provided new weights. For this analysis we use the definition of “impaired” for which the individual must be 30-60 days delinquent in at least one trade line, and 90 or more days delinquent or derogatory status in another trade line in the past 24 months. Observations included in the estimation are weighted to reflect the U.S. population after accounting for the choice-based sampling employed when administering the survey. Those values are presented in Table 8.

<b>Table 8. Final Sample—New Definition of Impaired</b>					
<b>Phase VII. Final Sample by Race/Ethnicity and Credit Bucket 4</b>					
<b>RACE/ETHNICITY</b>	<b>Final Sample</b>	<b>Pct of Race</b>	<b>Credit Bucket</b>	<b>N</b>	<b>Pct of Final Sample</b>
<b>African American</b>	3,747	31	Impaired	1,197	10
			Indeterminate	1,040	9
			Good	813	7
			Non-matches	697	6
<b>Asian*</b>	1,266	10	Impaired	199	2
			Indeterminate	201	2
			Good	702	6
			Non-matches	164	1
<b>Hispanic</b>	2,471	20	Impaired	672	6
			Indeterminate	756	6
			Good	686	6
			Non-matches	357	3
<b>White</b>	4,656	38	Impaired	1,051	9
			Indeterminate	1,346	11
			Good	1,768	15
			Non-matches	491	4
<b>Totals</b>	12,140	100	Impaired	3,119	26
			Indeterminate	3,343	28
			Good	3,969	33
			Non-matches	1,709	14

### 3. Analysis

We estimate a recursive model with credit outcomes, a function of financial behavior that, in turn, is a function of self-assessed or objective financial knowledge. We will estimate each of the equations in the recursive model with all respondents and then by racial or ethnic category. We estimate both structural models, including actual values of knowledge in the behavior equation and both knowledge and behavior in the outcome equation, and reduced-form models without the inclusion of the other dependent variables as predictors. We use OLS procedures (with a Type III option) for the knowledge and behavior equations and an ordered logit (with a Type III option) for the outcome equations. The Type III option provides a statistical test that allows us to obtain F-test results (for OLS) or likelihood ratio test results (Wald statistics for logit) for the “class” of variables in addition to the individual parameter estimates for the values of the class that are typically obtained without that option.

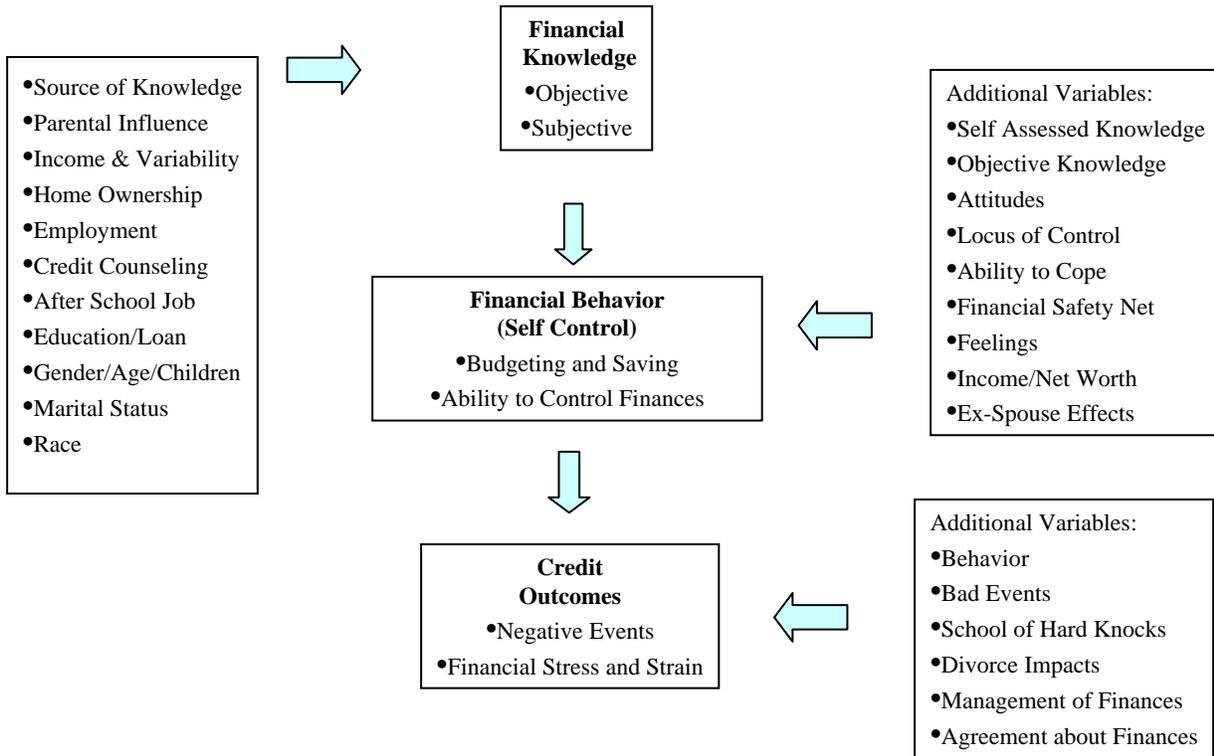
First, we estimate self-assessed and objective knowledge in separate equations as functions of predictors of that knowledge. These predictors include reference variables (education, age, gender, family status, race), income and wealth-related variables (income, wealth, employment status, homeownership status, income relative to family of origin, and expected or past variation in income), and other survey variables that might contribute to the attainment of knowledge. These include learning from parents, regular savings, after school jobs, student loans, credit counseling, presence of a safety net, and money management courses.

Next, we estimate behaviors as a function of financial knowledge and additional factors that will affect behavior. The dependent variable is a summary of financial self-control composed from answers to several survey questions. We include whether the respondent follows a budget or saves or invests money from each paycheck. We also include controlling spending, paying bills on time, planning for financial future, providing for self and family, only buying things that are necessary, and borrowing for things that are not important. We assign negative value to buying things that are not affordable. Not included in the financial knowledge equations but included here are psychological or physical health factors that might influence financial control behaviors. We include self-descriptive variables, such as risk-taking, optimism, the influence of religion, and gambling. We also include stress-related impacts that might affect behavior. These include variables such as the amount of worry about money, spending, and the respondent’s financial situation, smoking, and stress symptoms (nightmares, migraines, insomnia, stomach or back pain, extreme tiredness or fatigue, or feelings of inadequacy). Other explanatory variables include feelings of control or lack thereof (inadequacy, helplessness, or lack of control) relative to feeling in control (I can do anything I set my mind to and what happens depends on me) should impact behavior. We call these variables “locus of control.” Here we also include spousal credit behaviors.

Our financial equation estimates the financial outcome for each respondent. The dependent variable is “impaired” credit using the alternative definition presented above. For this equation, we estimate financial outcome using an ordered logit. In addition to the inclusion of financial self-control and predictors discussed above, we include in the financial outcome equation variables describing spousal impacts (from current or ex-spouse), divorce and the status of unpaid bills following divorce, and intra-household management and financial decision-making. We also include factors grouped to indicate learning from the “school of hard knocks.” These survey questions elicit responses on bad financial events (eviction, NSF checks, utility

cancellations, credit denials, creditor calls, repossession, late payments, collections, and bankruptcy). Finally, we include “bad external events,” such as major medical expenses, theft or property destruction, or major legal or tax problems.

## Model of Creditworthiness



Overall, we find that the equations fit the model well. The key explanatory variable for behavior is knowledge and that for credit outcomes is behavior. In this respect, the vision that motivates intervention for credit counseling and educational programs will have value. To the extent that more learning affects knowledge and that knowledge impacts how persons behave with respect to saving, budgeting, and spending, we expect better behavior to result in better credit outcomes (lower impaired credit). Individual equation results have some interesting features, but the main finding is that there are important policy reasons to continue advocating improved financial awareness.

Turning to individual equations, we first present results for the “knowledge” equations in Tables 9 and 10. Self-assessed (SE) knowledge is based on the respondents’ beliefs about what they know, while objective knowledge is based on answers to particular financial questions. Generally speaking, there seems to be support for the view that one can enhance financial knowledge by providing learning opportunities through a variety of sources. We find a relatively large impact on self-assessed knowledge coming from “learning experiences,” including *learn from bad times* (school of hard knocks). Interestingly, this is more important in terms of explaining the variance in SE knowledge than the existence of previous *bad credit outcomes*, including repossessions, bankruptcies, and creditor calls. In addition to this, learning from formal *education* has a significant impact (the more education, the higher the impact), as does taking financial training courses in school (*learn from school*) and financial seminars (*learn from seminars*). *Credit counseling* can also impact knowledge. Above and beyond the impact on behavior, knowledge does not have a direct impact on credit outcomes. As shown in the reduced-form results in Table 15, the set of “learning” variables, beyond formal education, do not individually significantly explain outcomes.

Income and wealth also affect own estimations of knowledge, with higher incomes and higher net worth associated with more knowledge. Homeownership exerts a positive influence on SE knowledge, as does having higher income levels compared to one’s parents. Variance in income has some effect, with having a decrease in income in the past two years the largest effect from the variance measures. The presence of a financial safety net matters considerably, with being likely able to cover bills for three months having the largest impact on SE knowledge. This may reflect a tendency toward saving and budgeting reflected in the dependent variable.

Finally, we see a large effect from the two credit card variable associated with usage and payment patterns. For previous credit card usage, those obtaining a card at the youngest age learned, marginally, the most. This may not reflect positive credit outcomes, simply an increase in financial knowledge that comes from use of credit. Card payment patterns considerably impact knowledge, with those paying only the minimum, and having small balances, not learning much. Those who pay in full (up to balances of \$5,000) learn a significant amount from the experience. Once we look at the credit outcomes variable, having a credit card does not have a significant impact but credit payment patterns remain significant.

<b>Table 9</b>				
<b>Estimations for Self-Assessed Knowledge</b>				
<b>Parameter</b>		<b>Estimate</b>	<b>T-Statistic</b>	<b>Pr &gt;  t </b>
<i>Intercept</i>		21.21	32.90	<.0001
<i>Card Use</i>		386.49	14.86	<.001
	under 18	1.69	5.12	<.0001
	18 or older	1.50	5.30	<.0001
	never had card			
<i>Card Pay</i>		818.78	5.25	<.001
	min, >=\$5000 due	0.32	0.83	0.407
	min, \$1000-4999	0.15	0.45	0.650
	min, <\$1000 due	-0.64	-2.00	0.046
	> min, >=\$5000 due	1.05	4.20	<.0001
	> min, \$1000-4999	0.55	2.32	0.020
	> min, <\$1000 due	0.33	1.27	0.206
	>> min, >=\$5000	1.42	4.84	<.0001
	>> min, \$1000-4999	1.17	4.75	<.0001
	>> min, <\$1000 due	1.12	4.34	<.0001
	in full, >=\$5000	-0.06	-0.05	0.959
	in full, \$1000-4999	1.34	2.81	0.005
	in full, <\$1000	0.71	2.89	0.004
	do not use cards			
<i>Bad Credit Outcomes</i>		210.34	16.18	<.001
	no problems	0.80	4.02	<.0001
	problems			
<i>Student Loan</i>		31.92	2.46	0.117
	no student loan	-0.23	-1.57	0.117
	student loan			
<i>Learn from Bad Time</i>		987.91	37.99	<.001
	times little	-1.15	-8.31	<.0001
	times some	-0.84	-5.32	<.0001
	times a lot			
<i>Counseling</i>		174.89	4.48	<.001
	no, never	-0.39	-1.26	0.207
	yes, <2 years	0.05	0.14	0.886
	yes, 3-5 years	0.50	1.23	0.218
	yes, >5 years			
<i>After School Job</i>		250.56	9.64	<.001
	seldom	-0.59	-4.23	<.0001
	sometimes	-0.41	-2.98	0.003
	often			
<i>Income</i>		526.73	20.26	<.001
	under \$25,000	-1.07	-5.92	<.0001
	\$25,000 to \$44,999	-0.19	-1.30	0.193
	\$45,000 or more			

<i>Net Worth</i>		222.71	8.56	<.001
	under \$10,000	-0.75	-4.00	<.0001
	\$10,000 to \$49,999	-0.37	-2.05	0.040
	\$50,000 or more			
<i>Own or Rent</i>		207.45	15.95	<.001
	own	0.52	3.99	<.0001
	rent			
		236.72	6.07	<.001
<i>Y Compared to Parent</i>	worse off	0.33	1.35	0.177
	same	0.71	2.83	0.005
	better off	0.81	3.47	0.001
	do not know			
<i>Safety Net</i>		623.42	23.97	<.001
	unlikely	-1.14	-6.60	<.0001
	neutral	-0.77	-5.49	<.0001
	likely			
<i>Employment Status</i>		267.96	4.12	<.001
	self-employed	0.97	4.01	<.0001
	part-time	-0.03	-0.15	0.878
	not working	-0.25	-1.43	0.152
	student	0.17	0.54	0.588
	retired/disabled	-0.18	-0.40	0.686
	full-time			
<i>Y Variance</i>		95.57	3.68	0.025
	seldom	-0.38	-2.09	0.037
	sometimes	-0.31	-2.17	0.030
	often			
<i>Net Y Chg in Past 2 Yrs</i>		411.98	15.84	0.000
	decreased	-1.19	-4.70	<.0001
	stayed the same	-1.02	-5.49	<.0001
	increased			
<i>Expected Net Y Chg</i>		136.01	5.23	0.005
	unlikely	-0.89	-2.29	0.022
	neutral	-0.53	-3.01	0.003
	likely			
<i>Ex-Spouse Bills</i>		248.31	9.55	<.001
	no ex-spouse	-0.63	-2.19	0.029
	left bills	0.18	0.53	0.599
	left no bills			
<i>Education</i>		625.90	12.03	<.001
	some school	-1.73	-4.73	<.0001
	high school	-1.19	-6.12	<.0001
	some college	-0.39	-2.54	0.011
	associate degree	-0.57	-2.80	0.005
	finished college			

<i>Learn from School</i>		<i>1615.14</i>	<i>62.11</i>	<i>&lt;.001</i>
	a little	-1.68	-11.06	<.0001
	some	-1.06	-5.96	<.0001
	a lot			
<i>Learn from Seminars</i>		<i>562.33</i>	<i>21.62</i>	<i>&lt;.001</i>
	a little	-1.33	-6.14	<.0001
	some	-0.74	-2.84	0.005
	a lot			
<i>Gender</i>		<i>56.65</i>	<i>4.36</i>	<i>0.037</i>
	male	0.25	2.09	0.037
	female			
<i>Age</i>		<i>29.72</i>	<i>2.29</i>	<i>0.131</i>
	< 30 years old	0.19	1.51	0.131
	>= 30 years old			
<i>Kids</i>		<i>0.01</i>	<i>0.00</i>	<i>0.978</i>
	no kids	0.00	0.03	0.978
	kids			
<i>Race</i>		<i>267.28</i>	<i>6.85</i>	<i>&lt;.001</i>
	Hispanic	-0.20	-1.29	0.199
	African-American	0.41	2.72	0.007
	Asian	-0.41	-2.21	0.027
	White			

Results from the objective knowledge equation are similar in terms of significance of particular explanatory variables, with credit card use and credit card payment patterns, income and learning (from bad times or from formal education) still important. We see a smaller impact from counseling and no impact from homeownership as compared to SE knowledge. Later, in looking at the behavioral equation, Table 11, we observe that knowledge has a strong impact on behavior (with objective knowledge and self-assessed knowledge interacted).

<b>Table 10</b>				
<b>Estimations for Objective Knowledge</b>				
<b>Parameter</b>		<b>Estimate</b>	<b>T-Statistic</b>	<b>Pr &gt;  t </b>
<i>Intercept</i>		8.94	20.59	<.0001
<i>Card Use</i>		82.17	6.97	0.001
	under 18	0.67	3.02	0.003
	18 or older	0.71	3.73	0.000
	never had a card			

<i>Card Pay</i>		982.92	13.89	<.0001
	min, >=\$5000 due	-0.05	-0.19	0.850
	min, \$1000-4999	0.02	0.09	0.932
	min, <\$1000 due	-0.30	-1.38	0.169
	> min, >=\$5000 due	1.38	8.21	<.0001
	> min, \$1000-4999	0.69	4.33	<.0001
	> min, <\$1000 due	0.23	1.34	0.182
	>> min, >=\$5000	1.53	7.76	<.0001
	>> min, \$1000-4999	1.29	7.77	<.0001
	>> min, <\$1000 due	0.49	2.83	0.005
	in full, >=\$5000	1.79	2.25	0.025
	in full, \$1000-4999	1.48	4.61	<.0001
	in full, <\$1000	1.16	7.01	<.0001
	do not use cards			
<i>Bad Credit Outcomes</i>		23.12	3.92	0.048
	no problems	-0.26	-1.98	0.048
	problems			
<i>Student Loan</i>		30.02	5.09	0.024
	no student loan	-0.22	-2.26	0.024
	student loan			
<i>Learn from Bad Times</i>		466.33	39.55	<.0001
	little	-0.83	-8.89	<.0001
	some	-0.29	-2.71	0.007
	a lot			
<i>Counseling</i>		50.52	2.86	0.036
	no, never	-0.36	-1.74	0.082
	yes, <2 years	-0.13	-0.57	0.572
	yes, 3-5 years	0.05	0.19	0.851
	yes, >5 years			
<i>After School Job</i>		104.53	8.87	0.000
	seldom	-0.35	-3.78	0.000
	sometimes	-0.01	-0.11	0.916
	often			
<i>Income</i>		267.41	22.68	<.0001
	under \$25,000	-0.82	-6.73	<.0001
	\$25,000 to \$44,999	-0.38	-3.97	<.0001
	\$45,000 or more			
<i>Net Worth</i>		35.28	2.99	0.050
	under \$10,000	0.17	1.30	0.192
	\$10,000 to \$49,999	0.29	2.39	0.017
	\$50,000 or more			
<i>Own or Rent</i>		2.78	0.47	0.492
	own	0.06	0.69	0.492
	rent			

<i>Y Compared to Parent</i>		290.94	16.45	<.0001
	worse off	1.01	6.11	<.0001
	same	0.97	5.81	<.0001
	better off	1.09	6.97	<.0001
	do not know			
<i>Safety Net</i>		119.81	10.16	<.0001
	unlikely	-0.41	-3.56	0.000
	neutral	-0.41	-4.30	<.0001
	likely			
<i>Employment Status</i>		73.17	2.48	0.030
	self employed	0.29	1.81	0.070
	part-time	-0.21	-1.45	0.147
	not working	-0.24	-2.03	0.043
	student	-0.08	-0.38	0.702
	retired/disabled	0.38	1.30	0.195
	full-time			
<i>Y Variance</i>		24.45	2.07	0.126
	seldom	-0.25	-2.04	0.042
	sometimes	-0.04	-0.45	0.653
	often			
<i>Net Y Chg in Past 2 Yrs</i>		102.05	8.65	0.000
	decreased	-0.01	-0.03	0.974
	stayed the same	-0.38	-3.03	0.003
	increased			
<i>Expected Net Y Chg</i>		28.88	2.45	0.087
	unlikely	-0.57	-2.18	0.030
	neutral	-0.06	-0.51	0.613
	likely			
<i>Ex-Spouse Bills</i>		108.59	9.21	0.000
	no ex-spouse	-0.64	-3.33	0.001
	left bills	-0.23	-1.02	0.306
	left no bills			
<i>Education</i>		489.32	20.75	<.0001
	some school	-1.50	-6.08	<.0001
	high school	-1.10	-8.40	<.0001
	some college	-0.67	-6.37	<.0001
	associate degree	-0.45	-3.28	0.001
	finished college			
<i>Learn from School</i>		2.53	0.21	0.807
	little	-0.07	-0.65	0.517
	some	-0.06	-0.48	0.628
	a lot			
<i>Learn from Seminars</i>		1.33	0.11	0.894
	little	0.02	0.11	0.913
	some	0.07	0.40	0.692
	a lot			

<i>Gender</i>		107.44	18.22	<.0001
	male	0.34	4.27	<.0001
	female			
<i>Age</i>		36.59	6.21	0.013
	< 30 years old	0.21	2.49	0.013
	>= 30 years old			
<i>Kids</i>		29.63	5.03	0.025
	no kids	0.19	2.24	0.025
	kids			
<i>Race</i>		310.75	17.57	<.0001
	Hispanic	-0.30	-2.82	0.005
	African-American	-0.72	-7.03	<.0001
	Asian	-0.47	-3.73	0.000
	White			

After modeling the consumer literacy equations, we turn to the behavior equation. The dependent variable here is an index of types of “good” behavior, such as saving regularly, budgeting, controlling spending, and paying bills on time. Included as explanatory variables are psychological factors, income-related factors, consumer literacy factors, and demographics. By far the most important determinant of behavior/self control was knowledge (self-assessed interacted with objective). The respondent had less self-control when the knowledge was either stated as “little” or “some” in either self-assessed or objective categories, compared to having a fair amount of knowledge in both categories. The set of psychological factors also had an expected large impact on financial behavior. A respondent behaves “better” if more optimistic, taking fewer risks, not worrying too much about money, and being able to cope well. Feeling in control (*locus of control*) has a significant but relatively small effect. The income-related measures do matter, but with income relative to parents and the existence of a safety net being considerably more important than actual income, net worth, or homeownership. Here, we see some direct effects from formal education and a small effect from learning about financial matters at school, but the learning variables are less important here (likely because of their influence on knowledge).

<b>Table 11</b>				
<b>Estimations for Behavior/Self Control</b>				
	<b>Parameter</b>	<b>Estimate</b>	<b>T value</b>	<b>Pr &gt;  t </b>
<i>Intercept</i>		38.05	31.65	<.0001
<i>Knowledge Interacted</i>		6692.12	27.00	<.0001
	both very little	-3.94	-8.24	<.0001
	very little, some	-3.82	-9.40	<.0001
	very little, fair amount	-3.28	-3.83	0.000
	some, very little	-1.58	-3.64	0.000
	both some	-2.41	-7.91	<.0001
	some, fair amount	-2.04	-5.49	<.0001
	fair, very little	-0.05	-0.08	0.936
	fair amount, some	0.17	0.54	0.591
	both fair amount			
<i>Take Risks</i>		1888.42	30.48	<.0001
	slightly	2.16	7.81	<.0001
	somewhat	1.67	5.92	<.0001
	well			
<i>Optimistic</i>		3253.79	52.51	<.0001
	slightly	-2.81	-10.00	<.0001
	somewhat	-1.14	-5.55	<.0001
	well			
<i>Count on God</i>		606.57	9.79	<.0001
	slightly	-1.08	-4.42	<.0001
	somewhat	-0.64	-2.40	0.016
	well			
<i>Worry in SR</i>		520.33	8.40	0.000
	slightly	0.72	3.12	0.002
	somewhat	-0.07	-0.30	0.767
	well			
<i>Go to Church</i>		97.03	1.57	0.209
	seldom	0.42	1.77	0.078
	sometimes	0.29	1.08	0.282
	often			
<i>Gamble</i>		103.36	1.67	0.189
	seldom	0.41	1.39	0.164
	sometimes	0.10	0.31	0.758
	often			
<i>Locus of Control</i>		210.04	3.39	0.034
	internal	-0.61	-1.84	0.065
	neutral	-0.09	-0.30	0.762
	external			

<i>Stress</i>		130.50	2.11	0.122
	seldom	-0.59	-2.05	0.041
	sometimes	-0.43	-1.62	0.104
	often			
<i>Smoke</i>		79.31	2.56	0.110
	do not smoke	0.79	1.60	0.110
	smoke			
<i>Worry about Money</i>		4249.80	68.59	<.0001
	very little	3.92	11.69	<.0001
	some	1.40	6.19	<.0001
	a fair amount			
<i>Cope</i>		3288.84	53.08	<.0001
	well	3.32	10.30	<.0001
	OK	1.72	6.95	<.0001
	poorly			
<i>Student Loan</i>		388.04	12.52	0.000
	no student loans	0.78	3.54	0.000
	student loan			
<i>Income</i>		337.24	5.44	0.004
	under \$25,000	0.97	3.29	0.001
	\$25,000 to \$44,999	0.37	1.65	0.100
	\$45,000 or more			
<i>Net Worth</i>		972.68	15.70	<.0001
	under \$10,000	-1.60	-5.54	<.0001
	\$10,000 to \$49,999	-0.91	-3.29	0.001
	\$50,000 or more			
<i>Own or Rent</i>		242.94	7.84	0.005
	own	0.56	2.80	0.005
	rent			
<i>Y Compared to Parents</i>		3555.40	38.25	<.0001
	worse off	-0.96	-2.52	0.012
	same	0.57	1.48	0.139
	better off	1.53	4.22	<.0001
	do not know			
<i>Safety Net</i>		3253.72	52.51	<.0001
	unlikely	-2.64	-9.95	<.0001
	neutral	-1.63	-7.63	<.0001
	likely			
<i>Employment Status</i>		272.52	1.76	0.118
	self employed	-0.89	-2.39	0.017
	part-time	0.24	0.69	0.489
	not working	0.17	0.64	0.523
	student	-0.44	-0.89	0.373
	retired/disabled	-0.55	-0.82	0.415
	full-time			

<i>Income Variance</i>		259.82	4.19	0.015
	seldom	-0.83	-2.89	0.004
	sometimes	-0.20	-0.89	0.373
	often			
<i>Net Y Chg in Past 2 Yrs</i>		1300.82	20.99	<.0001
	decreased	-2.51	-6.35	<.0001
	stayed the same	-1.54	-5.33	<.0001
	increased			
<i>Expected Net Income Chg</i>		90.58	1.46	0.232
	unlikely	-0.13	-0.22	0.829
	neutral	0.40	1.46	0.144
	likely			
<i>Spouse</i>		1400.61	15.07	<.0001
	no spouse	-1.13	-4.30	<.0001
	fair	-2.12	-5.43	<.0001
	okay	-1.26	-5.25	<.0001
	good			
<i>Ex-Spouse</i>		42.08	0.68	0.507
	no ex-spouse	1.04	1.47	0.142
	fair	0.81	1.08	0.280
	okay	0.41	0.50	0.614
	good			
<i>Ex-Spouse Bills</i>		137.78	4.45	0.035
	left bills	1.14	2.11	0.035
	left no bills			
<i>Education</i>		1095.54	8.84	<.0001
	some school	-1.34	-2.38	0.017
	high school	-1.36	-4.48	<.0001
	some college	-1.36	-5.64	<.0001
	associate degree	-0.52	-1.63	0.103
	finished college			
<i>Learn from School</i>		415.66	6.71	0.001
	a little	-0.78	-3.31	0.001
	some	-0.25	-0.89	0.376
	a lot			
<i>Learn from Seminars</i>		65.57	1.06	0.347
	a little	-0.37	-1.09	0.277
	some	-0.59	-1.45	0.146
	a lot			
<i>Gender</i>		39.70	1.28	0.258
	male	0.21	1.13	0.258
	female			
<i>Age</i>		13.78	0.44	0.505
	< 30 years old	0.13	0.67	0.505
	>= 30 years old			

<i>Kids</i>		77.28	2.49	0.114
	no kids	0.32	1.58	0.114
	kids			
<i>Race</i>		572.06	6.15	0.000
	Hispanic	-0.50	-2.03	0.0424
	African-American	-0.56	-2.23	0.026
	Asian	0.65	2.25	0.025
	White			

Finally, we examine the impacts of behavior on impaired credit. As we noted earlier, behavior is the second most important variable in explaining credit outcomes (with only race more important). Here, as the impacts of learning are already measured by the literacy impact on knowledge and behavior, these variables do not have further direct effects. We do see for the first time some significant impacts from demographic variables (age, kids, gender) all with the expected signs. Race is the single most important factor in explaining impaired credit outcomes, somewhat surprising not in its impact but in its magnitude. We continue to observe the importance of relative income compared to the previous generation and the “safety net” (which may be provided by the previous generation). Also of note are the effects from those variables relating to income and employment uncertainty (*unemployment or income fall, net income change in past two years, or expected net income change*), all of which have significant impacts on credit outcomes. Marital accord leads to better outcomes than does marital discord (*agree on finances and good spousal behavior*).

<b>Table 12</b>				
<b>Structural Estimations of Credit Outcomes</b>				
		<b>Parameter</b>		
		<b>Estimate</b>	<b>ChiSq</b>	<b>Pr &gt; ChiSq</b>
<i>Intercept</i>		-0.34	0.92	0.338
<i>Behavior/Self Control</i>			85.04	<.0001
	poor	1.38	66.12	<.0001
	okay	0.89	37.01	<.0001
	good	0.47	11.18	0.001
	very good			
<i>Events</i>			59.80	<.0001
	no	-0.82	38.02	<.0001
	one of them	-0.31	5.13	0.024
	two or three of them			
<i>Ex-Spouse Bills</i>				
	yes, unpaid bills	0.85	7.12	0.008
	yes, no bills	0.22	0.52	0.472
	no			
<i>Unemployment or Y Fall</i>			17.89	0.000
	no	-0.54	17.77	<.0001
	one of them	-0.37	7.24	0.007
	both of them			

<i>Student Loan</i>			19.96	<.0001
	no student loan	-0.44	19.96	<.0001
	student loan			
<i>Income</i>			1.91	0.385
	under \$25,000	0.11	0.77	0.380
	\$25,000 to \$44,999	0.13	1.90	0.168
	\$45,000 or more			
<i>Net Worth</i>			2.62	0.270
	under \$10,000	0.18	1.79	0.181
	\$10,000 to \$49,999	0.21	2.58	0.108
	\$50,000 or more			
<i>Own or Rent</i>			22.17	<.0001
	own	-0.41	22.17	<.0001
	rent			
			33.68	<.0001
<i>Y Compared to Parents</i>	worse off	0.36	4.92	0.027
	same	-0.13	0.59	0.443
	better off	-0.22	2.10	0.147
	do not know			
<i>Safety Net</i>			78.72	<.0001
	unlikely	1.00	78.60	<.0001
	neutral	0.48	25.51	<.0001
	likely			
<i>Employment Status</i>			24.91	0.000
	self employed	0.35	4.74	0.029
	part-time	-0.52	12.09	0.001
	not working	-0.16	1.72	0.190
	student	-0.33	2.32	0.127
	retired/disabled	0.49	2.93	0.087
	full-time			
<i>Income Variance</i>			2.87	0.238
	seldom	0.04	0.10	0.753
	sometimes	0.16	2.86	0.091
	often			
<i>Net Y Chg in Past 2 Yrs</i>			20.41	<.0001
	decreased	-0.78	19.77	<.0001
	stayed the same	-0.46	13.24	0.000
	increased			
<i>Expected Net Income Chg</i>			14.25	0.001
	unlikely	-0.54	4.29	0.038
	neutral	-0.44	13.87	0.000
	likely			
<i>Spouse</i>			32.87	<.0001
	no spouse	0.59	17.77	<.0001
	fair	0.63	11.53	0.001
	okay	0.60	31.09	<.0001
	good			

<i>Ex-Spouse</i>			0.94	0.624
	fair	-0.01	0.00	0.973
	okay	0.23	0.42	0.519
	good			
<i>Manage Finances</i>			12.48	0.002
	mostly spouse	0.30	6.02	0.014
	equally	0.43	11.30	0.001
	mostly me			
<i>Agree on Finances</i>			6.22	0.045
	seldom	0.39	5.32	0.021
	sometimes	-0.04	0.09	0.760
	often			
<i>Education</i>			68.17	<.0001
	some school	1.20	24.98	<.0001
	high school	0.71	28.47	<.0001
	some college	0.83	60.08	<.0001
	associate degree	0.73	26.87	<.0001
	finished college			
<i>Learn from School</i>			0.43	0.805
	little	-0.04	0.16	0.685
	some	0.02	0.02	0.883
	a lot			
<i>Learn from Seminars</i>			2.47	0.291
	little	-0.22	2.35	0.125
	some	-0.24	1.80	0.180
	a lot			
<i>Gender</i>			8.19	0.004
	male	-0.24	8.19	0.004
	female			
<i>Age</i>			7.45	0.006
	< 30 years old	0.23	7.45	0.006
	>= 30 years old			
<i>Kids</i>			36.53	<.0001
	no kids	-0.54	36.53	<.0001
	kids			
<i>Race</i>			88.03	<.0001
	Hispanic	0.53	25.99	<.0001
	African-American	0.78	58.86	<.0001
	Asian	-0.23	2.80	0.094
	White			

Our final table of results presents the reduced-form equation for impaired credit. We wanted to compare the direct effects of the explanatory variables on impaired credit to their impacts when entered through the other structural equations, consumer literacy and behavior. Here we find that the psychological variables, by themselves, do not generally influence credit outcomes directly. As expected, bad financial shocks (*bad events*) do continue to matter as do

previous bad times (*learn from bad times*) and previous bad credit outcomes (*bad credit outcomes*). While talking to parents may not matter, observing their behavior, saving as a child, and getting an after school job all do matter in small but significant ways. This argues for early financial training (e.g., adding money management to health classes in high school). The income and net worth variables are reduced to insignificance in this form, as are the interventionist measures (learning from school or seminars). A surprise is the strong impact of recent credit counseling on impaired credit outcomes, although this likely follows from the need to get counseling due to already extant credit issues.

<b>Table 13</b>				
<b>Reduced Form Estimations of Credit Outcomes</b>				
		<b>Estimate</b>	<b>Chi Sq</b>	<b>Pr&gt;ChiSq</b>
<i>Intercept</i>		1.32	5.44	0.02
<i>Card Use</i>			4.20	0.123
	under 18	0.21	0.82	0.37
	18 or older	0.35	3.36	0.07
	never had a card			
<i>Card Pay</i>			285.67	<.0001
	min, >=\$5000 due	-0.63	5.59	0.02
	min, \$1000-4999	0.54	4.45	0.03
	min, <\$1000 due	0.61	5.87	0.02
	> min, >=\$5000 due	-1.58	79.23	<.0001
	> min, \$1000-4999	-0.76	21.96	<.0001
	> min, <\$1000 due	-0.05	0.07	0.79
	>> min, >=\$5000	-2.25	91.35	<.0001
	>> min, \$1000-4999	-1.42	63.30	<.0001
	>> min, <\$1000 due	-0.61	11.65	0.00
	in full, >=\$5000	-1.83	4.05	0.04
	in full, \$1000-4999	-2.01	20.60	<.0001
	in full, <\$1000	-2.08	107.74	<.0001
	do not use cards			
<i>Bad Events</i>			34.69	<.0001
	no	-0.71	22.92	<.0001
	one of them	-0.27	3.28	0.07
	two or three of them			
<i>Ex-Spouse Bills</i>				
	yes, unpaid bill	0.60	2.72	0.10
	yes, no bills	0.02	0.00	0.96
	no			
<i>Unemployment or Y Fall</i>			8.75	0.013
	no	-0.42	8.65	0.00
	one of them	-0.35	5.20	0.02
	both of them			

<i>Take Risks</i>			11.22	0.004
	slightly	-0.42	9.73	0.00
	somewhat	-0.22	2.49	0.11
	well			
<i>Optimistic</i>			3.81	0.149
	slightly	-0.16	1.38	0.24
	somewhat	-0.19	3.53	0.06
	well			
<i>Count on God</i>			0.20	0.904
	slightly	-0.05	0.18	0.67
	somewhat	-0.05	0.13	0.71
	well			
<i>Worry in SR</i>			0.12	0.944
	slightly	-0.02	0.02	0.88
	somewhat	0.02	0.03	0.87
	well			
<i>Go to Church</i>			5.63	0.060
	seldom	0.02	0.03	0.87
	sometimes	0.27	4.25	0.04
	often			
<i>Gamble</i>			8.08	0.018
	seldom	-0.38	7.44	0.01
	sometimes	-0.22	2.28	0.13
	often			
<i>Locus of Control</i>			3.99	0.136
	internal	0.22	1.89	0.17
	neutral	0.29	3.92	0.05
	external			
<i>Stress</i>			2.51	0.29
	seldom	0.21	2.34	0.13
	sometimes	0.10	0.68	0.41
	often			
<i>Smoke</i>			0.04	0.835
	do not smoke	-0.05	0.04	0.84
	smoke			
<i>Worry about Money</i>			2.20	0.333
	very little	-0.24	1.99	0.16
	some	-0.12	1.24	0.26
	a fair amount			
<i>Cope</i>			2.99	0.224
	well	0.27	2.93	0.09
	OK	0.15	1.67	0.20
	poorly			
<i>Bad Credit Outcomes</i>			43.58	<.0001
	no problems	-1.69	43.58	<.0001
	problems			

<i>Student Loan</i>			6.92	0.009
	no student loan	-0.29	6.92	0.01
	student loan			
<i>Learn from Bad Times</i>			39.45	<.0001
	little	-0.44	17.42	<.0001
	some	-0.69	32.13	<.0001
	a lot			
<i>Counseling</i>			100.98	<.0001
	no, never	-0.11	0.28	0.60
	yes, <2 years	1.33	27.90	<.0001
	yes, 3-5 years	1.14	14.87	0.00
	yes, >5 years			
<i>Talk to Parents</i>			3.22	0.200
	disagree	0.23	3.11	0.08
	neutral	0.15	1.83	0.18
	agree			
<i>Parents-Good Mgmt</i>			4.75	0.093
	disagree	0.25	4.55	0.03
	neutral	0.04	0.14	0.71
	agree			
<i>Save as Child</i>			7.58	0.023
	disagree	0.07	0.53	0.47
	neutral	0.33	7.39	0.01
	agree			
<i>Learn from Parents</i>			2.40	0.301
	little	-0.17	2.33	0.13
	some	-0.04	0.16	0.69
	a lot			
<i>After School Job</i>			5.88	0.053
	seldom	-0.10	0.92	0.34
	sometimes	-0.25	5.84	0.02
	often			
<i>Income</i>			3.42	0.180
	under \$25,000	-0.26	3.25	0.07
	\$25,000 to \$44,999	-0.08	0.54	0.46
	\$45,000 or more			
<i>Net Worth</i>			0.66	0.719
	under \$10,000	0.01	0.01	0.94
	\$10,000 to \$49,999	0.09	0.35	0.55
	\$50,000 or more			
<i>Own or Rent</i>			15.47	<.0001
	own	-0.38	15.47	<.0001
	rent			

<i>Y Compared to Parents</i>			<i>19.17</i>	<i>0.000</i>
	worse off	0.26	2.00	0.16
	same	-0.16	0.82	0.37
	better off	-0.26	2.26	0.13
	do not know			
<i>Safety Net</i>			<i>37.06</i>	<i>&lt;.0001</i>
	unlikely	0.79	36.95	<.0001
	neutral	0.37	11.80	0.00
	likely			
<i>Employment Status</i>			<i>23.82</i>	<i>0.000</i>
	self employed	0.47	6.71	0.01
	part-time	-0.51	9.29	0.00
	not working	-0.06	0.22	0.64
	student	-0.02	0.01	0.92
	retired/disabled	0.70	5.04	0.02
	full-time			
<i>Variance in Income</i>			<i>1.44</i>	<i>0.486</i>
	seldom	0.06	0.22	0.64
	sometimes	0.13	1.41	0.23
	often			
<i>Net Y Chg in Past 2 Yrs</i>			<i>8.30</i>	<i>0.016</i>
	decreased	-0.56	8.15	0.00
	stayed the same	-0.24	2.88	0.09
	increased			
<i>Expected Net Income Chg</i>			<i>7.64</i>	<i>0.022</i>
	unlikely	-0.31	1.18	0.28
	neutral	-0.36	7.64	0.01
	likely			
<i>Spouse</i>			<i>21.27</i>	<i>&lt;.0001</i>
	no spouse	0.70	20.14	<.0001
	fair	0.56	7.74	0.01
	okay	0.53	20.07	<.0001
	good			
<i>Ex-Spouse</i>			<i>2.09</i>	<i>0.352</i>
	fair	0.15	0.16	0.69
	okay	0.49	1.48	0.22
	good			
<i>Manage Finances</i>			<i>8.50</i>	<i>0.014</i>
	mostly spouse	0.32	5.53	0.02
	equally	0.36	6.64	0.01
	mostly me			
<i>Agree on Finances</i>			<i>11.08</i>	<i>0.004</i>
	seldom	0.62	10.97	0.00
	sometimes	0.07	0.30	0.59
	often			

<i>Education</i>			24.03	<.0001
	some school	0.65	6.26	0.01
	high school	0.32	4.55	0.03
	some college	0.53	19.33	<.0001
	associate degree	0.54	11.46	0.00
	finished college			
<i>Learn from School</i>			0.02	0.991
	little	0.01	0.00	0.96
	some	0.02	0.02	0.90
	a lot			
<i>Learn from Seminars</i>			0.38	0.829
	little	-0.09	0.27	0.60
	some	-0.12	0.36	0.55
	a lot			
<i>Gender</i>			6.99	0.008
	male	-0.25	6.99	0.01
	female			
<i>Age</i>			3.28	0.070
	< 30 years old	0.17	3.28	0.07
	>= 30 years old			
<i>Kids</i>			18.18	<.0001
	no kids	-0.42	18.18	<.0001
	kids			
<i>Race</i>			38.42	<.0001
	Hispanic	0.60	26.17	<.0001
	African-American	0.57	22.70	<.0001
	Asian	0.06	0.14	0.71
	White			

We look finally at the marginal impacts of several “groups” of the explanatory variables. These groups are composed of several different questions from the survey responses, grouped to reflect similar types of expected impacts. We include here many of the exogenous variables, such as bad events and income or unemployment changes, as well as previous bad credit outcomes. We combine several financial variables into an income and wealth category and combine several spousal-related variables, since those have been mentioned as important by focus groups. The groups follow below.

<b>Table 14</b>	
<b>Variable Groups</b>	
credit bucket	outcomes
self_control	behaviors
bad event, dissolve, U or Y fall	external events
bad credit, student loan, hard knocks	school of hard knocks
income, net worth, own or rent	income & wealth
Y now compared to parents, safety net	income & wealth
employment	income & wealth
income variance, past net Y	variability in income & wealth
expected net Y	variability in income & wealth
spouse, manage, agree	spouse and ex-spouse credit behaviors
ex-spouse bills	spouse and ex-spouse credit behaviors
education, learn from school	education variables
learn from seminars	education variables
gender age kids	demographic variables
race	demographic variables

We examine the impact of the variable group, relative to a model that first includes only an intercept, and then as a group added to the “full model” that includes all other variable groups. In this way we can look at the sole impact of the set of variables in contributing to the explained variation, and then we can also look, at the margin, at whether that group of variables, given the variation already explained by the other variable groups, still has a large impact on credit outcomes. Those findings follow in Table 15.

<b>Table 15</b>		
<b>Impacts of Groups of Variables on Credit Outcomes</b>		
	Percentage Impact	
Variable Group	Impact of Variable Group Alone	Effect when Controlling for Other Variables
Behaviors	32.37%	5.68%
External Events	32.51%	5.79%
Hard Knocks	1.70%	1.31%
Income and Wealth	53.06%	12.81%
Variability in Income and Wealth	9.84%	2.67%
Spousal Behaviors	29.06%	3.33%
Education	16.75%	4.76%
Demographics	25.24%	10.56%

The group of variables most important in explaining the observed credit outcomes is that composed of income and wealth information (income, wealth, homeownership, income relative to parents, and employment status). This group contributes over 50 percent to the explained variation. After controlling for all other variables, we still see that the marginal impact of this group is 13 percent. Behaviors (self-control) and external events (medical, theft, tax, loss of job)

also have a sole contribution of over 30 percent in explaining credit outcomes. In the full model, their net contributions are around 6 percent each as a group. Demographics, particularly race, is not one of the most important groups when considered solely (at only 25 percent), but after controlling for the other groups, this set of variables continues to add over 10 percent to explaining credit outcomes.

One issue that must be faced to resolve credit issues is to develop, on the part of a consumer, an accurate self-assessment of their credit situation. That is, improving credit profiles requires recognition by borrowers that there is a need to improve. This requires both understanding what contributes to impaired credit and understanding what, if anything, can be done to change the underlying circumstances contributing to credit outcomes.

In this next table, we present information on how well respondents self-assess (question 13) compared to their actual credit performance (defined as “impaired” or “good”). We present this information by racial group, as we observe some distinct differences in what percentages of respondents in a group self-assess correctly (or wrongly) compared to other groups.

<b>Table 16</b>						
<b>Self Assessed Credit Compared to Actual Credit</b>						
SELF-ASSESSED CREDIT						
HISPANIC						
ACTUAL CREDIT	.	Very Bad	Bad	Average	Good	Very Good
Impaired Percent	0.12	9.52	20.06	15.32	3.28	1.45
Row Percent	0.24	19.13	40.32	30.79	6.6	2.92
Column Percent	25.36	96.8	89.42	60.76	22.22	5.33
Good Percent	0.35	0.31	2.37	9.89	11.49	25.84
Row Percent	0.69	0.63	4.72	19.68	22.87	51.41
Column Percent	74.64	3.2	10.58	39.24	77.78	94.67
AFRICAN AMERICAN						
ACTUAL CREDIT	.	Very Bad	Bad	Average	Good	Very Good
Impaired Percent	0.31	10.36	21.92	20.76	4.7	1.01
Row Percent	0.53	17.55	37.11	35.14	7.96	1.71
Column Percent	69.24	89.12	88.78	67.33	26.65	6.85
Good Percent	0.14	1.27	2.77	10.07	12.94	13.76
Row Percent	0.34	3.09	6.77	24.6	31.6	33.61
Column Percent	30.76	10.88	11.22	32.67	73.35	93.15
ASIAN						
ACTUAL CREDIT	.	Very Bad	Bad	Average	Good	Very Good
Impaired Percent	0.11	4.58	10.17	5.39	1.79	1.09
Row Percent	0.46	19.8	43.98	23.3	7.75	4.72
Column Percent	18.33	94.36	78.96	31.25	7.62	2.67
Good Percent	0.47	0.27	2.71	11.86	21.72	39.84
Row Percent	0.61	0.36	3.53	15.42	28.26	51.82
Column Percent	81.67	5.64	21.04	68.75	92.38	97.33

	WHITE					
ACTUAL CREDIT	.	Very Bad	Bad	Average	Good	Very Good
Impaired Percent	0.1	6.32	15.48	11.03	2.91	1.23
Row Percent	0.28	17.04	41.75	29.75	7.86	3.33
Column Percent	48.59	88.79	81.14	50.92	14.77	3.83
Good Percent	0.11	0.8	3.6	10.63	16.81	30.97
Row Percent	0.17	1.27	5.72	16.9	26.72	49.22
Column Percent	51.41	11.21	18.86	49.08	85.23	96.17

If we compare the percentages, by race, of those who had impaired credit with those who believed they had bad or very bad credit, we see only minor differences. The African American respondents correctly identified their impaired credit 55 percent of the time, while whites correctly self-assessed impaired credit 59 percent of the time, Hispanics 60 percent, and Asians 64 percent. The African American group is nearly 10 percent more likely (55 percent compared to 59 percent) to have an inaccurate perception of their own impaired credit. In terms of good credit, we observe additional significant differences by race. African Americans correctly self-assessed (good or very good categories) only 65 percent of the time, while whites correctly self-assessed good credit 76 percent of the time, Hispanics 74 percent, and Asians 80 percent. Perhaps because the African Americans are less likely able to understand that they are less likely to seek credit from, for example, prime lenders, because they do not assess a high probability of success to their applications.

### Conclusions

The findings in this paper improve our understanding of the complex interactions between acquisition of financial knowledge, behavior resulting from that knowledge, background, financial status, and psychological profile and credit outcomes. We find throughout this research that financial knowledge can improve financial behavior and behaviors (either current or perhaps influenced by past familial interactions) do significantly affect the probability of having impaired rather than good credit. We hope that this research helps to illuminate the need for consumer literacy and that it helps quantify the forms in which that literacy might be enhanced. Credit outcomes can change and increased knowledge (and awareness of that knowledge) can lead to better financial behavior and improved credit outcomes.

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**Appendix A. Phase and Sample Tables.**

<b>Table 1. CCS Data Development Process</b>			
<b>PHASE</b>	<b>Market Facts &amp; NPD</b>	<b>Experian, Inc.</b>	<b>Freddie Mac</b>
<b>Phase I</b>	<ul style="list-style-type: none"> <li>Obtain names and addresses of the panel members (See Table 2) within age &amp; income categories</li> <li>Send address files (with spouse) to Experian</li> </ul>		
<b>Phase II</b>		<ul style="list-style-type: none"> <li>Identify “Spouse” of panelist</li> <li>Append files with credit records of panel members and married spouses, when found (See Table 3)</li> <li>Remove names and addresses for privacy and forward the files to Freddie Mac</li> </ul>	
<b>Phase III</b>			<ul style="list-style-type: none"> <li>Create credit quality buckets using credit variables from Experian (See Table 4)</li> <li>Remove credit records and forward the files to Market Facts, Inc</li> </ul>
<b>Phase IV</b>	<ul style="list-style-type: none"> <li>Draw samples &amp; mail surveys (see Table 5)</li> <li>Collect, edit and code the data (See Table 7)</li> <li>Weight the data</li> </ul>		
<b>Phase V</b>			<ul style="list-style-type: none"> <li>Merge the survey response files with credit bucket files</li> <li>Add geographic codes</li> <li>Develop alternative buckets</li> </ul>
<b>Phase VI</b>	<ul style="list-style-type: none"> <li>Rim weight the alternative buckets and send files to Freddie Mac</li> </ul>		
<b>Phase VII</b>			<ul style="list-style-type: none"> <li>Merge the alternative buckets with the data</li> </ul>

**Table 2. Race & Ethnicity of File Sent to Experian**

**PHASE I: Generate Names and Addresses of Panelist**

<b>Race/Ethnicity</b>	<b>N</b>	<b>Pct of Pop</b>	<b>Status</b>	<b>N</b>	<b>Pct of Race</b>
African American	14,937	22%	Unmarried	10,375	69%
			Married	4,625	31%
Asian*	7,456	11%	Unmarried	2,997	40%
			Married	4,459	60%
Hispanic	16,551	24%	Unmarried	6,993	42%
			Married	9,558	58%
White	29,910	43%	Unmarried	11,880	40%
			Married	18,030	60%
<b>Total</b>	<b>68,854</b>	<b>100%</b>	<b>Unmarried</b>	<b>32,245</b>	<b>53%</b>
			<b>Married</b>	<b>36,609</b>	<b>47%</b>

\*Includes out-of-range Asians. Excluding out-of-range, Asians total is 64,784.  
 Race/ethnicity is based on the panel company information or assumed for spouses to be the same as respondent.

**Table 3. Race/Ethnicity Distribution of Population After Experian Appended**

<b>Table 3. Race/Ethnicity Distribution of Population After Experian Appended</b>											
	<b>PHASE I: Generate Panelist Sample</b>			<b>PHASE II: Append Credit and Add Spouses</b>							
<b>RACE/ETHNICITY</b>	<b>Marital Status of Panelist</b>	<b>N</b>	<b>Pct by Marital Status</b>	<b>Individual</b>	<b>N</b>	<b>Pct of Race</b>	<b>Append Credit Data</b>	<b>N</b>	<b>Pct of individuals</b>		
<b>African American</b>	Unmarried	10,375	69%	Panelist	10,375	57%	Credit Matched	8,688	84%		
							Credit Non-Matched	1,687	16%		
	Married	4,562	31%	Panelist	4,562	25%	Credit Matched	3,791	83%		
							Credit Non-Matched	771	17%		
				Spouse Found			3,442	19%	Credit Matched	2,091	61%
							Credit Non-Matched	1,351	39%		
			Spouse Not Found	1,120	25%	N/A	N/A	N/A			
<b>Asian*</b>	Unmarried	2,997	40%	Panelist	2,997	32%	Credit Matched	2,561	86%		
							Credit Non-Matched	436	15%		
	Married	4,459	60%	Panelist	4,459	48%	Credit Matched	3,820	86%		
							Credit Non-Matched	639	14%		
				Spouse Found			1,831	20%	Credit Matched	1,489	81%
							Credit Non-Matched	342	19%		
			Spouse Not Found	2,628	59%	N/A	N/A	N/A			
<b>Hispanic</b>	Unmarried	6,993	42%	Panelist	6,993	33%	Credit Matched	5,809	83%		
							Credit Non-Matched	1,184	17%		
	Married	9,558	58%	Panelist	9,558	45%	Credit Matched	8,176	85%		
							Credit Non-Matched	1,382	15%		
				Spouse Found			4,763	22%	Credit Matched	3,350	70%
							Credit Non-Matched	1,413	30%		
			Spouse Not Found	4,795	50%	N/A	N/A	N/A			
<b>White</b>	Unmarried	11,880	40%	Panelist	11,880	28%	Credit Matched	10,033	85%		
							Credit Non-Matched	1,847	16%		
	Married	18,030	60%	Panelist	18,030	43%	Credit Matched	16,028	89%		
							Credit Non-Matched	2,002	11%		
				Spouse Found			12,333	29%	Credit Matched	9,480	77%
							Credit Non-Matched	2,853	23%		
			Spouse Not Found	5,697	32%	N/A	N/A	N/A			

**Table 3 (cont.): Race/Ethnicity Distribution of Population After Experian Appended**

<b>Table 3 (cont.): Race/Ethnicity Distribution of Population After Experian Appended</b>									
	<b>PHASE I: Generate Panelist Sample</b>			<b>PHASE II: Append Credit and Add Spouses</b>					
<b>RACE/ETHNICITY</b>	<b>Marital Status of Panelist</b>	<b>N</b>	<b>Pct by Marital Status</b>	<b>Individual</b>	<b>N</b>	<b>Pct of Race</b>	<b>Append Credit Data</b>	<b>N</b>	<b>Pct of individuals</b>
<b>Totals</b>	Unmarried	32,245	47%	Panelist	32,245	35%	Credit Matched	27,091	84%
							Credit Non-Matched	5,154	16%
	Married	36,609	53%	Panelist	36,609	40%	Credit Matched	31,815	87%
	<b>Total Panelists</b>	<b>68,854</b>					Credit Non-Matched	4,794	13%
				Spouse Found	22,369	25%	Credit Matched	16,410	73%
							Credit Non-Matched	5,959	27%
				Spouse Not Found	14,240	39%	N/A	N/A	N/A
							<b>Total Credit Matched</b>	<b>75,316</b>	<b>83%</b>
							<b>Total Credit Non-matched</b>	<b>15,907</b>	<b>17%</b>
							<b>Total Population</b>	<b>91,223</b>	<b>100%</b>

\*Including out-of-range Asians. Excluding out-of-range Asians the total is 85,597

**Table 4. Race/Ethnicity Based on Panel Company Information by Credit Bucket**

	PHASE I: Generate Panelist			PHASE II: Append Credit and Add Spouses						PHASE III: Create Credit Buckets		
RACE/ETHNICITY	Marital Status of Panelist	N	Pct of Race	Individual	N	Pct of Race	Appending Credit Data	N	Percent	Bucket	N	Percent
<b>African American</b>	Unmarried	10,375	69%	Panelist	10,375	56%	Credit Matched	8,688	84%	Impaired	5,226	50%
										Indeterminate	1,798	17%
										Good	1,664	16%
										Credit Non-Matched	1,687	16%
										Non-matches	1,687	16%
										Married	4,562	31%
	Indeterminate	705	15%									
	Good	737	16%									
	Credit Non-Matched	771	17%									
	Non-matches	771	17%									
	Spouse Found	3,442	19%	Credit Matched	2,091	61%	Impaired	1,129	33%			
	Indeterminate	452	13%	Good	510	15%	Credit Non-Matched	1,351	39%	Non-matches	1,351	39%
Spouse Not Found	1,120	25%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
<b>Asian*</b>	Unmarried	2,997	40%	Panelist	2,997	32%	Credit Matched	2,561	85%	Impaired	512	17%
										Indeterminate	308	10%
										Good	1,741	58%
										Credit Non-Matched	436	15%
										Non-matches	436	15%
										Married	4,459	60%
	Indeterminate	411	9%									
	Good	2,674	60%									
	Credit Non-Matched	639	14%									
	Non-matches	639	14%									
	Spouse Found	1,831	20%	Credit Matched	1,489	81%	Impaired	262	14%			
	Indeterminate	172	9%	Good	1,055	58%	Credit Non-Matched	342	19%	Non-matches	342	19%
Spouse Not Found	2,628	59%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

\*Includes all Asians. The non-match credit bucket were originally combined with the good credit bucket

**Table 4 (cont.): Race/Ethnicity Based on Panel Company Information by Credit Bucket**

RACE/ETHNICITY	PHASE I: Generate Panelist			PHASE II: Append Credit and Add Spouses						PHASE III: Create Credit Buckets								
	Marital Status of Panelist	N	Pct of Race	Individual	N	Pct of Race	Appending Credit Data	N	Percent	Bucket	N	Percent						
<b>Hispanic</b>	Unmarried	6,993	42%	Panelist	6,993	33%	Credit Matched	5,809	83%	Impaired	2,589	37%						
										Indeterminate	1,171	17%						
										Good	2,049	29%						
										Credit Non-Matched	1,184	17%						
										Non-matches	1,184	17%						
										Married	9,558	58%	Panelist	9,558	45%	Credit Matched	8,176	86%
	Married	9,558	58%	Panelist	9,558	45%	Credit Matched	8,176	86%	Indeterminate	1,405	15%						
										Good	3,456	36%						
										Credit Non-Matched	1,382	14%						
										Non-matches	1,382	14%						
										Spouse Found	4,763	22%						
										Indeterminate	615	13%						
Good	1,416	30%																
Credit Non-Matched	1,413	30%	Non-matches	1,413	30%													
Spouse Not Found	4,795	50%	N/A	N/A	N/A	N/A	N/A	N/A										
<b>White</b>	Unmarried	11,880	40%	Panelist	11,880	28%	Credit Matched	10,033	84%	Impaired	3,434	29%						
										Indeterminate	1,775	15%						
										Good	4,824	41%						
										Credit Non-Matched	1,847	16%						
										Non-matches	1,847	16%						
										Married	18,030	60%	Panelist	18,030	43%	Credit Matched	16,028	89%
	Married	18,030	60%	Panelist	18,030	43%	Credit Matched	16,028	89%	Indeterminate	2,200	12%						
										Good	8,863	49%						
										Credit Non-Matched	2,002	11%						
										Non-matches	2,002	11%						
										Spouse Found	12,333	29%						
										Indeterminate	1,250	10%						
Good	5,398	44%																
Credit Non-Matched	2,853	23%	Non-matches	2,853	23%													
Spouse Not Found	5,697	32%	N/A	N/A	N/A	N/A	N/A											

**Table 4 (cont.): Total Race/Ethnicity Based on Panel Company Information by Credit Bucket**

Table 4 (cont.): Total Race/Ethnicity Based on Panel Company Information by Credit Bucket												
	PHASE I: Generate Panelist			PHASE II: Append Credit and Add Spouses						PHASE III: Create Credit Buckets		
RACE/ETHNICITY	Marital Status of Panelist	N	Pct of Race	Individual	N	Pct of Race	Appending Credit Data	N	Percent	Bucket	N	Percent
<b>Totals</b>	Unmarried	32,245	47%	Panelist	32,245	35%	Credit Matched	27,091	84%	Impaired	11,761	36%
										Indeterminate	5,052	16%
										Good	10,278	32%
							Credit Non-Matched	5,154	16%	Non-matches	5,154	16%
	Married	36,609	53%	Panelist	36,609	40%	Credit Matched	31,815	87%	Impaired	11,364	31%
										Indeterminate	4,721	13%
										Good	15,730	43%
	<b>Total Panelists</b>	<b>68,854</b>					Credit Non-Matched	4,794	13%	Non-matches	4,794	13%
				Spouse Found	22,369	25%	Credit Matched	16,410	73%	Impaired	5,542	25%
										Indeterminate	2,489	11%
										Good	8,379	37%
							Credit Non-Matched	5,959	27%	Non-matches	5,959	27%
				Spouse Not Found	14,240	39%	N/A	N/A	N/A	N/A	N/A	N/A
							<b>Total Credit Matched</b>	<b>75,316</b>	<b>83%</b>	Impaired	28,667	38%
										Indeterminate	12,262	16%
										Good	34,387	46%
							<b>Total Credit Non-Matched</b>	<b>15,907</b>	<b>17%</b>	Non-matches	15,907	21%
							<b>Total Population</b>	<b>91,223</b>	<b>100%</b>	<b>Total Population</b>	<b>91,223</b>	<b>100%</b>

<b>Table 5. Starting Samples</b>					
<b>Race/Ethnicity Based on Panel Company Information by Credit Bucket</b>					
<b>PHASE IV: Draw Sample and Mail Surveys</b>					
<b>RACE/ETHNICITY</b>	<b>Starting Sample</b>	<b>Pct of Race</b>	<b>Credit Bucket</b>	<b>N</b>	<b>Pct of Starting Sample</b>
<b>African American</b>	6,591	36%	Impaired	2,679	41%
			Indeterminate	1,572	24%
			Good	1,014	15%
			Non-matches	1,326	20%
<b>Asian*</b>	3,712	40%	Impaired	956	26%
			Indeterminate	549	15%
			Good	1,764	48%
			Non-matches	443	12%
<b>Hispanic</b>	6,525	31%	Impaired	2,495	38%
			Indeterminate	1,670	26%
			Good	1,498	23%
			Non-matches	862	13%
<b>White</b>	5,884	14%	Impaired	1,986	34%
			Indeterminate	1,908	32%
			Good	1,473	25%
			Non-matches	517	9%
<b>Totals</b>	22,712	25%	Impaired	8,116	36%
			Indeterminate	5,699	25%
			Good	5,749	25%
			Non-matches	3,148	14%

\*Includes only Asians meeting age and income criteria of target population. Including all Asians in the starting sample would result in Asian totals of: 1,465 (Impaired), 836 (Indeterminate), 2,345 (Good), and 607 (Non-matches).

<b>Table 6. Original Race/Ethnicity by Self-Reported Race/Ethnicity</b>					
<b>Original</b>	<b>Self-Defined Race/Ethnicity</b>				
<b>Race/Ethnicity</b>	<b>White</b>	<b>African-American</b>	<b>Hispanic</b>	<b>Asian</b>	<b>TOTAL</b>
<b>White</b>	3,523	7	0	8	<b>3,538</b>
<b>African-American</b>	106	3,718	0	14	<b>3,838</b>
<b>Hispanic</b>	829	12	2,471	147	<b>3,459</b>
<b>Asian*</b>	198	10	0	1,097	<b>1,305</b>
<b>TOTAL</b>	<b>4,656</b>	<b>3,747</b>	<b>2,471</b>	<b>1,266</b>	<b>12,140</b>

**Table 7. Final Sample of Re-classified Race/Ethnicity by Credit Buckets and Marital Status**

<b>PHASE IV: Final Sample of Re-classified Race</b>									
<b>RACE/ETHNICITY (N)</b>	<b>Individual</b>	<b>N</b>	<b>Pct of Marital Status</b>	<b>Credit Bucket</b>	<b>N</b>	<b>Pct of Starting Sample</b>			
<b>African American (3,747)</b>	Unmarried Panelist	1,914	51%	Impaired	761	40%			
				Indeterminate	555	29%			
				Good	322	17%			
	Married Panelist	1,210	32%	Non-matches	276	14%			
				Impaired	485	40%			
				Indeterminate	330	27%			
				Good	180	15%			
				Non-matches	215	18%			
				Spouse	623	17%			
	Spouse	623	17%	Impaired	243	39%			
				Indeterminate	82	13%			
				Good	92	15%			
Non-matches				206	33%				
<b>Asian* (1,266)</b>				Unmarried Panelist	508	32%	Impaired	92	18%
							Indeterminate	60	12%
	Good	304	60%						
	Married Panelist	441	48%	Non-matches	52	10%			
				Impaired	101	23%			
				Indeterminate	64	15%			
				Good	213	48%			
				Non-matches	63	14%			
				Spouse	317	20%			
	Spouse	317	20%	Impaired	80	25%			
				Indeterminate	47	15%			
				Good	141	44%			
Non-matches				49	15%				

\* Includes only Asians meeting age and income criteria of target population. Including all Asians in the final sample results in Asian totals as follows: 445 (Impaired), 258 (Indeterminate), 851 (Good), and 208(Non-matches).

**Table 7. Final Sample of Re-classified Race/Ethnicity by Credit Buckets and Marital Status**

<b>PHASE IV: Final Sample of Re-classified Race</b>							
<b>RACE/ETHNICITY</b>	<b>Individual</b>	<b>N</b>	<b>Pct of Marital Status</b>	<b>Credit Bucket</b>	<b>N</b>	<b>Pct of Final Sample</b>	
<b>Hispanic (2,471)</b>	Unmarried Panelist	648	33%	Impaired	283	44%	
				Indeterminate	211	33%	
				Good	96	15%	
	Married Panelist	1,047	45%	Non-matches	58	9%	
				Impaired	418	40%	
				Indeterminate	327	31%	
	Spouse Found	776	22%	Good	211	20%	
				Non-matches	91	9%	
				Impaired	230	30%	
	<b>White (4,656)</b>	Unmarried Panelist	741	28%	Indeterminate	100	13%
					Good	238	31%
					Non-matches	208	27%
Married Panelist		1,987	43%	Impaired	242	33%	
				Indeterminate	269	36%	
				Good	168	23%	
Spouse		1,928	29%	Non-matches	62	8%	
				Impaired	637	32%	
				Indeterminate	654	33%	
Non-matches				Good	537	27%	
				Non-matches	159	8%	
				Impaired	650	34%	
Non-matches			Indeterminate	470	24%		
			Good	538	28%		
			Non-matches	270	14%		

<b>Table 7. Final Sample</b>					
<b>Phase IV. Final Sample by Race/Ethnicity and Credit Bucket</b>					
<b>RACE/ETHNICITY</b>	<b>Final Sample</b>	<b>Pct of Race</b>	<b>Credit Bucket</b>	<b>N</b>	<b>Pct of Final Sample</b>
<b>African American</b>	3,747	31	Impaired	1,489	12
			Indeterminate	967	8
			Good	594	5
			Non-matches	697	6
<b>Asian*</b>	1,266	10	Impaired	273	2
			Indeterminate	171	1
			Good	658	5
			Non-matches	164	1
<b>Hispanic</b>	2,471	20	Impaired	931	8
			Indeterminate	638	5
			Good	545	4
			Non-matches	357	3
<b>White</b>	4,656	38	Impaired	1529	13
			Indeterminate	1,393	11
			Good	1,243	10
			Non-matches	491	4
<b>Totals</b>	12,140	100	Impaired	4,222	35
			Indeterminate	3,169	26
			Good	3,040	25
			Non-matches	1709	14

## Appendix B. Weighted Variable Frequencies

Table B1			
<i>Dependent Variables</i>	Category	Frequency (Weighted)	Percent (Weighted)
<i>Outcome</i>		4272.00	
	impaired	1828.00	0.43
	good	2444.00	0.57
<i>Self Assessed Knowledge</i>			
	very little	674.48	0.16
	some	2036.03	0.48
	a fair amount	1561.49	0.37
<i>Objective Knowledge</i>			
	very little	634.29	0.15
	some	2627.74	0.62
	a fair amount	1009.87	0.24
<i>Self Control</i>	11-55		
	poor	654.30	0.15
	okay	1421.86	0.33
	good	1626.12	0.38
	very good	569.73	0.13

Table B2			
<i>Explanatory Variables</i>	Category	Frequency	Percent
<i>Card Use</i>			
	under 18	454.15	0.11
	18 or older	3599.07	0.84
<i>Card Pay</i>	never had a card	218.78	0.05
	minimum due	463.61	0.11
	more than minimum	2355.88	0.55
	in full	848.41	0.20
	do not use cards	604.11	0.14
<i>Bad Credit Outcomes</i>			
	no problems	446.31	0.10
	problems	3825.69	0.90
<i>Student Loan</i>			
	no student loan	3028.98	0.71
	student loan	1243.02	0.29

<i>Learn from Bad Times</i>			
	a little	1299.67	0.30
	some	756.87	0.18
	a lot	2215.46	0.52
<i>Counseling</i>			
	no, never	3577.21	0.84
	yes, <2 years	375.66	0.09
	yes, 3-5 years	166.08	0.04
	yes, >5 years	153.05	0.04
<i>After School Job</i>			
	seldom	1382.83	0.32
	sometimes	1280.21	0.30
	often	1608.97	0.38
<i>Income</i>			
	under \$25,000	1198.59	0.28
	\$25,000 to \$44,999	1448.95	0.34
	\$45,000 or more	1624.47	0.38
<i>Net Worth</i>			
	under \$10,000	2318.37	0.54
	\$10,000 to \$49,999	1247.15	0.29
	\$50,000 or more	706.48	0.17
<i>Own or Rent</i>			
	Own	2111.63	0.49
	Rent	2160.37	0.51
<i>Y Compared to Parents</i>			
	worse off	996.15	0.23
	same	876.63	0.21
	better off	2110.65	0.49
	do not know	288.57	0.07
<i>Safety Net</i>			
	unlikely	1149.32	0.27
	neutral	1739.18	0.41
	likely	1383.50	0.32
<i>Employment Status</i>			
	self employed	258.59	0.06
	part-time	327.51	0.08
	not working	588.41	0.14
	student	145.81	0.03
	retired/disabled	75.29	0.02
	full-time	2876.39	0.67

<i>Income Variance</i>			
	seldom	505.00	0.12
	sometimes	914.58	0.21
	often	2852.43	0.67
<i>Net Y Chg in Past 2 Yrs</i>			
	decreased	533.20	0.12
	stayed the same	3264.70	0.76
	increased	474.10	0.11
<i>Expected Net Income Chg</i>			
	unlikely	108.93	0.03
	neutral	3656.19	0.86
	likely	506.88	0.12
<i>Spouse</i>			
	no spouse	1557.32	0.36
	fair	278.38	0.07
	okay	1015.90	0.24
	good	1420.41	0.33
<i>Ex-Spouse</i>			
	no ex-spouse	3725.24	0.87
	fair	326.14	0.08
	okay	147.74	0.03
	good	72.88	0.02
<i>Manage Finances</i>			
	no spouse	1557.32	0.36
	mostly spouse	880.98	0.21
	equally	623.59	0.15
	mostly self	1210.11	0.28
<i>Agree on Finances</i>			
	no spouse	1557.32	0.36
	seldom	276.87	0.06
	sometimes	659.52	0.15
	often	1778.29	0.42
<i>Ex-Spouse Bills</i>			
	no ex-spouse	3725.24	0.87
	left bills	376.99	0.09
	left no bills	169.77	0.04

<i>Education</i>			
	some school	129.85	0.03
	finished HS	883.72	0.21
	some college	1488.97	0.35
	associate degree	452.56	0.11
	finished college	1316.91	0.31
<i>Learn from School</i>			
	nothing	2567.08	0.60
	some	484.92	0.11
	a lot	331.89	0.08
<i>Learn from Seminars</i>			
	nothing	3455.18	0.81
	some	484.92	0.11
	a lot	331.89	0.08
<i>Gender</i>			
	Male	2193.38	0.51
	Female	2078.62	0.49
<i>Age</i>			
	< 30 years old	1694.01	0.40
	>= 30 years old	2577.99	0.60
<i>Kids</i>			
	no kids	1820.73	0.43
	kids	2451.27	0.57
<i>Race</i>			
	Hispanic	792	0.19
	African-American	1043	0.24
	Asian	614	0.14
	White	1823	0.43
<i>Bad Events</i>			
	no	2526.08	0.59
	one of them	1312.85	0.31
	two or three of them	433.07	0.10
<i>U or Y Fall</i>			
	no	2973.27	0.70
	one of them	748.40	0.18
	both of them	550.33	0.13
<i>Take Risks</i>			
	slightly (describes me)	2242.87	0.53
	somewhat	1453.72	0.34
	well	575.41	0.13

<i>Optimistic</i>			
	slightly (describes me)	594.91	0.14
	somewhat	1324.97	0.31
	well	2352.12	0.55
<i>Count on God</i>			
	slightly (describes me)	2219.19	0.52
	somewhat	786.08	0.18
	well	1266.73	0.30
<i>Worry in SR</i>			
	slightly (describes me)	2075.26	0.49
	somewhat	1078.89	0.25
	well	1117.85	0.26
<i>Go to Church</i>			
	seldom	2211.33	0.52
	sometimes	778.16	0.18
	often	1282.51	0.30
<i>Gamble</i>			
	seldom	2754.73	0.64
	sometimes	1064.56	0.25
	often	452.71	0.11
<i>Locus of Control</i>			
	internal	2305.69	0.54
	neutral	1441.54	0.34
	external	524.77	0.12
<i>Stress</i>			
	seldom	1733.44	0.41
	sometimes	1753.51	0.41
	often	785.05	0.18
<i>Smoke</i>			
	do not smoke	4131.39	0.97
	smoke	140.61	0.03
<i>Worry about Money</i>			
	very little	546.45	0.13
	some	2429.80	0.57
	a fair amount	1295.75	0.30
<i>Cope</i>			
	well	697.79	0.16
	okay	2886.75	0.68
	poor		
<i>Talk to Parents</i>			
	disagree	956.15	0.22
	neutral	2141.77	0.50
	agree	1174.08	0.27

<i>Parents-Good</i>			
<i>Mgmt</i>			
	disagree	875.18	0.20
	neutral	901.04	0.21
	agree	2495.78	0.58
<i>Save as Child</i>			
	disagree	1757.59	0.41
	neutral	719.43	0.17
	agree	1794.98	0.42