

CREDIT CARD ACCOUNTABILITY RESPONSIBILITY AND DISCLOSURE ACT OF 2009: HELPFUL FOR 18- TO 21-YEAR-OLDS?

Giancarlo Berrocal, Binghamton University, State University of New York
Marilyn K. Spencer, Texas A&M University-Corpus Christi
Valrie Chambers, Texas A&M University-Corpus Christi

ABSTRACT

The Credit Card Accountability Responsibility and Disclosure Act of 2009 went into effect April 30, 2010, making it unlawful for a credit card company to sign up an individual under the age of 21 without an adult co-signer, unless that underage individual shows convincing documentation of a means to make adequate payments. The apparent concern is that financial institutions exercise a greater degree of influence over the spending and possible card debt of this younger cohort by providing lines of credit. The purpose of this paper is to test whether college students between the ages of 18 and 21, v. students age 21 and older, will accept or decline a free additional line of credit. Of those who would accept a credit line extension, the paper studies how students would use the additional credit line, if at all. These students already had experience with using credit cards; they were surveyed before the new law went into effect. This study supports the concept that students under the age of 21, through their choices, may be indirectly signaling that they would benefit from controls on credit lines, although not necessarily in the form of legislation, to limit the accumulation of additional debt. A significantly larger number of students under the age of 21 reject an offered line of credit, and the difference in the number rejecting the line increases when the amount increases from \$500 to \$1,000. Of those accepting the line of credit, a significantly larger number of students under the age of 21 plan to hold the card, not spend with it, in both the \$500 and the \$1,000 credit extension scenarios – but most do ultimately plan to spend some of the additional credit line. The conclusions are useful for bankers, legislators, academic professionals and students. It affirms (weakly) Congress' restriction of credit to students between the ages of 18 and 21 years. The findings may also impact the decisions made by government educational boards and academic administrators, whose goal should be to ensure that college students have enough cash flow, but not overextend their debt.

Key Words: Credit, Behavioral Economics, Emerging Adolescents

INTRODUCTION

The Credit Card Accountability Responsibility and Disclosure Act of 2009 (CCARD Act) went into effect April 30, 2010 (Library of Congress, 2009). This law, among other provisions, makes it unlawful for financial companies to sign up individuals under age 21 without an adult co-signer, unless the underage individual provides documentation of a means to make sufficient payments. This provision is meant to protect young adults from assuming more debt than they can pay. This study explores whether decisions of college students under age 21 behave differently from older students when offered higher lines of credit. Past research has documented young adults' credit habits and their income growth potential but has shed little light on responses to additional credit access or credit use. This paper examines whether students, under and over the age of 21, would accept additional credit lines and, if so, how these two groups would use it. The survey was conducted shortly before the 2010 law change, shedding light on whether students under age 21 engage in different credit card behavior. This study provides evidence on the usefulness of the CCARD Act. Banks can use this information in marketing to students; and legislators can use this information to better understand younger, less experienced consumers.

LITERATURE REVIEW

Many of the approximately 5.8 million college students throughout the country are repeatedly offered credit cards (Warwick and Mansfield, 2000). They typically are low income producers, but they have discretionary income and expect to earn high incomes in the future. Card issuers anticipate that students will frequently use their cards and carry high outstanding balances (Ericson, 2002).

Psychology literature supports differences between younger and older adults. Arnett (2000) asserts that societal changes at the turn of the 21st century facilitated a psychological stage of development for those age 18 to the late 20s labeled "emerging adulthood." This stage is marked by identity exploration, instability, self-focus and "a sense of possibilities." At the end of this stage, new, often long-lasting relationships are formed. (Arnett, 2000) A borrower obtaining a credit card is about to start a potentially long-lasting relationship that can be beneficial for the borrower and the lender (Fliegel, 2005). Ludvigson (1999) finds that students tend to increase their credit limits throughout the lifecycle. Borrowers without credit cards are not equally able to control their consumption patterns as those with credit. But debt rises significantly and quickly with credit limit increases (Gross and Souleles, 2002; Shubbasis, 2004). Young borrowers face the temptation to spend more than income would justify, incurring high outstanding balances (Silver-Greenberg, 2007). White (2007) suggests that financial pressures dampen rational decision making; borrowers tend to behave as hyperbolic discounters, spending more money

with credit cards than their income warrants, and some of their financial decisions are detrimental (Brown and Plache, 2006).

Early in the lifecycle, consumers have lower credit limits but optimistic expectations for income and credit limit growth (Ludvigson, 1999). College students' behavioral patterns change with earning power and potential wealth accumulation over their expected lifecycle, making them attractive customers for credit card companies (Warwick and Mansfield, 2000). Banks increase college students' credit lines gradually when they consistently show financial stability. Maki (2000) finds that increased consumer credit results in higher consumption. But the debt-consumption relationship is difficult to ascertain because credit lines are non-secured, with flexible repayment, not requiring a student to set aside funds or pledge an asset (Ekici and Dunn, 2006).

Ericson (2002) suggests that students' knowledge of credit card features plays a role in their credit card-related decisions. For debtors borrowing below their limits, buffer-stock models of precautionary saving state that unused credit acts as protection against unexpected financial adversities. Even at low utilization rates, borrowers use more credit when their lines are increased, regardless of outstanding balances, at a fixed-utilization-to-credit-line rate. Even though higher interest rates cause cardholders to rely less on their credit cards when borrowing, borrowers significantly and immediately increase debt when their limits are increased. Therefore, students might exercise financial control by rejecting the additional line to avoid more debt. (Gross and Souleles, 2002) Holding a credit line unused requires self-control; self-control is costly. The greater the threat to willpower, the greater the psychic costs and the more likely that cardholders might turn down additional credit, rather than bear those psychic costs of self-control (Shefrin and Thaler 1992).

HYPOTHESES AND RESEARCH QUESTIONS

This paper questions whether college students in each of the two age cohorts will accept or decline the additional credit. Of those who would accept it, how would they use it, if at all? Neo-classical economic theory suggests the following: Accepting the hypothetical credit line does not cause any financial cost. It provides the student with additional resources for unexpected expenses. Thus it is rational to accept the credit line, whether or not intending to use it. But behaviorally, individuals may exercise self-control over their credit decisions differently. Some are more likely to reject a credit line extension altogether, provided that the opportunity cost of rejecting the line of credit is lower than their psychic costs (Shefrin and Thaler, 2000) and also depending on other factors, including current high outstanding balances, risk-aversion, a negative credit report, and/or low income.

Will College Students Reject the Hypothetical Line of Credit?

Hypotheses 1a through 1d test the acceptance rate of the two age cohorts when offered a credit extension of two different amounts, \$500 and/or \$1,000, chosen as round numbers that are material but not large enough to be a windfall (Chambers, Spencer and Mollick, 2009). The proportion of students rejecting the credit line is expected to be significantly higher than zero. Stated in alternate form:

H1a The proportions of students age of 18 to 21 and above 21 rejecting the additional credit line of \$500 is significantly higher than zero.

H1b The proportion of students 21 and older rejecting the additional \$500 credit line is significantly lower than for younger students.

H1c The proportions of students age 18 to 21 and above 21 rejecting the additional \$1,000 credit line is significantly higher than zero.

H1d The proportion of students 21 and older rejecting the additional \$1,000 credit line is significantly lower than for younger students.

Of Those Accepting the Line of Credit, How Many Will Use the Credit Line?

Some may accept the line of credit as a financial buffer, not intending to use it in the near future; others may spend immediately. It costs nothing to accept the line until it is used, with no cost if the bill is paid in full within the grace period. Some credit card companies offer reward programs for those making timely payments. Some credit holders may perceive this as an opportunity to increase their credit score over time, provided they make timely payments on outstanding balances. Hypotheses 2a through 2d assert that a significant number of college students in both age cohorts who accept a \$500 and/or \$1,000 line of credit actually intend to use a portion of it. To simplify the analysis, it is initially assumed that students who answer “leave the line unused” will *intend* to not borrow any of the additional credit in the short-run. Stated in alternate form:

H2a The proportions of students age 18 to 21 and above 21 accepting the hypothetical credit line of \$500 who plan to use it is significantly higher than zero.

- H2b The proportion of students 21 and older accepting the hypothetical \$500 credit line planning to use it is significantly higher than for students below the age of 21.*
- H2c The proportions of students age 18 to 21 and above 21 accepting the hypothetical \$1,000 credit line planning to use it is significantly higher than zero.*
- H2d The proportion of students 21 years of age and older who accepted the \$1,000 hypothetical credit line who plan to use it is significantly higher than for students below the age of 21.*

Of Those Accepting the Credit Line, How Will They Spend the Money?

This study explores research questions concerning whether students adhere to their intent to either spend or leave the credit line unused. If used, this study measures how they would spend additional credit across different spending categories.

- RQ1 For both age cohorts, of the credit line students expressly intend to spend, how much will be spent on 1) personal expenses, 2) school expenses, 3) infrequent expenses, 4) durable assets, 5) to pay down notes payable?*
- RQ2 For both age cohorts, of the students initially saying that they would not spend the additional line of credit, how many indicated later in the survey that they would spend some of the line on one of the 5 categories in Research Question 1 above (versus all on category 6, hold the credit line open for emergency use)?*

METHODOLOGY

Data Collection

A survey was the most practical method for gathering current, meaningful and complete data. This survey contains 18 questions, most developed for this paper, plus demographic questions. It was distributed to undergraduate and graduate students at an urban public university in the Southwest USA. Some students were given a minimal amount of extra credit in their classes for filling out the instrument, and others were approached individually for voluntary participation.

The instrument asked if, when offered a hypothetical credit line extension of \$500 and then \$1,000, whether the student would (a) reject the credit line, (b) accept the credit but not plan to use it, or (c) accept and use the credit line. Those respondents who would accept the line of credit were asked how they would divide the credit line among the following items, adapted from Chambers and Spencer's (2008) scale: (1) personal - entertainment, clothes, rent, car expenses, groceries, shopping, etc.; (2) monthly school expenses; (3) hold for infrequent expenses; (d) buy a durable asset; (e) pay off debt; and/or (f) hold for emergencies.

Acceptance or rejection of an additional credit line is based on several potential determinants, including current credit balances, timing of the credit supply, account credit score, line size, knowledge of credit cards, credit card features, perception of credit line, financial stability, and credit line spending behavior.

Concerned that some respondents may have interpreted certain survey questions differently, the survey format and wording were revised; a second, smaller administration of this revised survey was run on an additional 37 respondents. (Students in the second group of respondents were approximately one grade level higher than the first group, but this did not seem to affect the results.) No significant differences were found between the first and second survey administration, except as noted in the results and discussion sections.

Data Analysis

Accepting the hypothetical line of credit was coded as "1," and rejecting it as "0." Accepting the credit line was further divided into two groups: intending to leave the line unused given a value of "0," and intending to use it, "1." The data were analyzed using descriptive statistics. In the case of hypotheses 1 and 2, rejecting either credit line was given the value of "0." All other answers to those questions were given the value of "1." H_{1a} through d examined whether a significant number in the two cohorts rejected the lines of credit; H_{2a} through d examined whether a significant number would accept but intend to hold (not use) the lines of credit. Because some mistakes may be made, a rejection by all respondents is not expected; *a priori* predictive value of 10% acceptance rate and use rate are used to account for human error. The actual error rate for a $p \leq 0.05$ significance is then measured to test sensitivity. Three additional questions identify how students would spend the credit lines and whether they adhere to their initial assertion concerning use of the credit line. Responses were evaluated using frequencies in order to answer Research Questions 1 and 2.

In running the data, the control variables were regressed against the outcomes for both rejecting the credit and holding (but not using) the credit. Once we established the control data did not matter (except where noted in the results and discussion sections), we re-ran data without the variables that did not add significantly to our model.

Of the 191 surveys, only 177 were complete and usable. Of these, 139 (79%) answered that they currently hold at least one credit card in their own names. According to Nellie Mae

(2004), the national average for undergraduates that began the school year with credit cards was about 76%, similar to this sample. The remaining 38 surveys were not analyzed because students without credit cards under their own names could show different behavior (Ericson's dissertation, 2000). Two were eliminated from age analysis because those respondents did not indicate age.

RESULTS

Will a Significant Number Accept a Credit Extension? If So, Will They Spend It?

As shown in the binomial test (Table 1), when students were asked if they would extend their credit line by \$500, 49 out of 139 (35.3%) *rejected* the credit line, a rate significantly higher than zero at $p = 0.01$, even allowing for a 10% error rate on the part of respondents. (At both the \$500 level and the \$1,000 level, students who accept the line, but hold, rather than use, the line and students who accept and immediately use the credit line were put together under the "accept the credit line" category. At the \$500 level, the probability of rejecting credit in aggregate $P(r) = (139!/49!90!)(.1^{49})(.90^{90})$, where 0.10 is the expected rejection rate.) The error rate yielding a $p \leq 0.05$ significance would have to be just over 38% for these results to be the product of human error rather than intent. As shown in Table 1, the calculated error rates for the groups range from 33% to 50%. Both age groups have a rejection rate significantly higher than zero at $p \leq 0.01$. Hypothesis 1_a is supported. The rejection rate for the younger age group was not significantly different than for the over 21 age group, which leads to rejecting Hypothesis 1_b. With a credit line extension of \$1,000, the proportion of students who rejected it increased from 35.3% to 46.0% (64 students). By age group, 37 of 64 (57.8%) of those under 21, and 27 of 73 (37.0%) of those over 21, rejected the credit line. Again allowing for a 10% error rate, the data were significantly higher than zero at $p = 0.01$, in aggregate and for both age groups; Hypothesis 1_c is supported. The difference in rejection rate between the 18-21 age group and the over 21 age group was marginally significant at $p \leq 0.07$; Hypothesis 1_d is marginally supported. (See Table 1.)

The higher credit line rejection at \$1,000 came primarily from one group: Those between 18 and 21 years of age increased their rejection rate for credit lines from 40.6% to 57.8%, while those accepting the line but leaving it unused decreased from 56.3% to 39.1%; those who answered they'd use the credit line is still 3.1%. The difference is marginally significant at $p \leq 0.08$ at the \$500 level, but not significant at the \$1,000 level. This may indicate that younger users view \$500 to be a material amount of credit, whereas older students viewed this amount as less material. When regressed, age was not a significant predictor of whether a student would accept the credit line at either \$500 or \$1,000, (marginally significant, $p \leq 0.07$ at \$1,000).

Table 1: Students' Responses When Offered a Line of Credit Extension of \$500 and \$1,000 Respectively (in Percent)				
Aggregate Response	\$500 Line of Credit Extension		\$1,000 Line of Credit Extension	
a. Use the Credit Line	N=12**	8.6%	11	7.9%
b. Leave line unused	78	56.1%	64**	46.0%
c. Reject Credit Line*	49	35.3%	64	46.0%
Total **	139	100.0%	139	100.0%
Error rate a $p \leq 0.05$	38%		42%	
Respondents Age 18 - 21				
a. Use the Credit Line	2	3.1%	2	3.1%
b. Leave line unused	36	56.3%	25	39.1%
c. Reject Credit Line*	26	40.6%	37	57.8%
Total	64	100.0%	64	100.0%
Error rate a $p \leq 0.05$	33%		50%	
Respondents Over 21				
a. Use the Credit Line	8	10.9%	9	12.3%
b. Leave line unused	42	57.6%	37	50.7%
c. Reject Credit Line*	23	31.5%	27	37.0%
Total	73	100.0%	73	100.0%
Error rate a $p \leq 0.05$	39%		44%	
*One-tailed significance for a binomial test assuming a 0.10 <i>a priori</i> rejection rate is $p \leq 0.001$ for both extended credit line amounts. A sensitivity test allows approximation of what the actual error rate would be if assuming completely rational respondents. Those amounts are listed below the Total lines.				
**Two respondents who would use the credit line did not list age and are omitted from analysis.				

Those above 21 years of age also increased their rejection rate, from 31.5% to 37.0%, with the difference coming primarily from those who said they would accept the line of credit but not spend it. Their increased rejection rate was much smaller than that of the younger cohort; more than half of those over 21 accepted both lines. Older students might have more reasons to accept and a greater ability to pay for credit extensions more than their younger counterparts: more expenses, less parental support and perhaps even supporting their own families. But those over 21 intending to use the \$500 (\$1,000) credit line are only 10.9% (12.3%). Those who said they intended to accept the line but leave it unused declined from 56% to 46% when the credit line increased from \$500 to \$1,000.

Measuring Intent to Use

Younger students accepting the credit line are more likely to intend to hold, rather than use it. Of the younger cohort, 25 (39.1%) intended to leave the \$1,000 line unused, and 2 (3.1%) intended to spend it. Of those older, 37 (50.7%) intended to leave the line unused, and 9 (12.3%) intended to spend it. As shown in the binomial test in the top two panels of Table 2, the data were significant at $p = 0.01$. The results in the third and fourth panels, by age for students

accepting or rejecting a \$500 credit line, were also significant at $p = 0.01$, indicating that the proportion of students spending the credit card extension of \$500 is significantly higher than zero.

Table 2: How Many Students Intend to Use the Credit Line?				
Students Accepting the \$500 Credit Line – in Aggregate				
Category	N	Observed Proportion	Test Proportion	Significance (1-tailed)
Leave Line Unused	78	.8533	.1000	.000 [*]
Use the Credit Line	12	.1467		
Total	90	1.0000		
Students Accepting the \$1,000 Credit Line – in Aggregate				
Category	N	Observed Proportion	Test Proportion	Significance (1-tailed)
Leave Line Unused	64	.8667	.1000	.000 [*]
Use the Credit Line	11	.1333		
Total	75	1.0000		
Students Accepting the \$500 Credit Line – Ages 18 - 21				
Category	N	Observed Proportion	Test Proportion	Significance (1-tailed)
Leave Line Unused	36	.9474	.1000	.000 [*]
Use the Credit Line	2	.0526		
Total	38	1.0000		
Students Accepting the \$500 Credit Line – Ages Over 21				
Category	N	Observed Proportion	Test Proportion	Significance (1-tailed)
Leave Line Unused	42	.8400	.1000	.000 [*]
Use the Credit Line	8	.1600		
Total	50	1.0000		
Students Accepting the \$1,000 Credit Line – Ages 18 - 21				
Category	N	Observed Proportion	Test Proportion	Significance (1-tailed)
Leave Line Unused	25	.9259	.1000	.000 [*]
Use the Credit Line	2	.0741		
Total	27	1.0000		
Students Accepting the \$1,000 Credit Line – Ages Over 21				
Category	N	Observed Proportion	Test Proportion	Significance (1-tailed)
Leave Line Unused	37	.8043	.1000	.000 [*]
Use the Credit Line	9	.1957		
Total	46	1.0000		

Similar results are obtained when the amount is \$1,000. Sixty-four (86.7%) of 75 students said they intended to leave the line unused. Hypothesis 2_a and 2_c are supported, but Hypotheses 2_b and 2_d are not. These results indicate that when offered a credit line extension, those of age 21 and older did not seem to materially differ in terms of credit usage from those of under the age of 21. See Table 2.

The number of students who said they would use the line of credit at both the \$500 and \$1,000 levels was low, with 12 (14.7%) of them accepting the \$500 line intending to spend the money and 11 (13.3%) of those accepting the \$1,000 line intending to spend it; proportions for both credit amounts are not statistically different. For the \$500 level, respondents over 21 who intended to use the line expected to spend almost 48.9% of it immediately or soon, leaving the rest unused. However, it appears that many students in both groups who say they do not intend to use the additional line of credit would actually start spending immediately, as shown in Table 3. With these small numbers at both levels of additional credit, caution must be exercised in interpreting the data.

Table 3: How Students, Those Who Plan to Use and Those Who Plan to Leave the Line Unused, Expect to Allocate Additional Credit								
Credit Amount	\$500				\$1000			
Age*	18 to 21		21 and older		18 to 21		21 and older	
First Response**	Use	Leave Unused	Use	Leave Unused	Use	Leave Unused	Use	Leave Unused
Sample Size	2	36	8	42	2	25	9	37
Actually Leave Unused***	0.0%	52.4%	51.1%	60.7%	50.0%	63.4%	55.5%	67.1%
Actually Use***	100.0%	47.6%	48.9%	39.3%	50.0%	36.6%	44.5%	32.9%
<i>Personal Expenses</i>	-	18.5%	22.5%	12.5%	-	15.0%	13.3%	3.9%
<i>School Expenses</i>	-	15.8%	5.0%	5.5%	-	9.4%	16.7%	8.7%
<i>Infrequent Expenses</i>	-	3.7%	6.3%	12.1%	-	2.8%	7.2%	10.8%
<i>Durable Assets</i>	-	1.7%	3.8%	0.7%	-	1.2%	2.2%	4.9%
<i>Pay off Notes</i>	-	7.9%	11.3%	8.5%	-	8.2%	5.1%	4.6%
*This sample size excludes two participants that did not provide age								
**Students' first response represents the immediate decision students make when offered a line of credit extension.								
***Students' second response is computed by the actual allocation of the additional credit among all the items.								

To Use or Not to Use the Line of Credit

As a validation check, those who said they did not intend to use the money were asked how they would spend it, with an option to leave the entire line unused. Those who intended to leave it unused apparently did not intend to leave it entirely unused. The 18- to 21-year-olds who said they would not use the \$500 line intended to use 47.6%. For those 21 and older, 39.3% would be used. When the 18-to-21-age respondents were offered the \$1,000 credit line, those who answered that they intended to leave it unused then indicated 36.6% allocated to spending.

Given this disconnect between intent to *not* use and then intent on *how* to use, further analyses were conducted on how those respondents would spend it. While the number who said they would *spend* the credit line is very low for data analysis purposes, especially for those 21 and older, the number who said they would *accept but not use* the line of credit is reasonably robust for data analysis for both age cohorts. See Table 3.

Of Those Using the Line of Credit, How Do They Spend It?

Looking across the rows of Table 3, one observes differences, in both age cohorts, between the group intending to spend and the group intending to leave the credit line unused. The amount respondents intended to spend on themselves varied between 3.9% (\$1,000 level) and 22.5% (\$500 level).

Respondents age 21 and older who intended to spend the credit line would increase the amount spent on school expenses from about 5.0% (\$500 level) to 16.7% (\$1,000 level); those who intended to leave the credit line unused expected to spend only about 8.7% for school expenses at the \$1000 level. Those who intended to leave the line unused lowered the percentage for school expenses from 15.8% (\$500 level) to 9.4% (\$1,000 level). For the \$1,000 credit extension, those who intended to leave the credit line unused increased the percentage and amount spent on durable assets, from 0.7% to 4.9%.

Other Findings

Concerning existing lines of credit, 44.3% responded that theirs range from \$0 to \$1,000, with 32.0% between \$1,001 and \$2,499 and 9.6% above \$2,500. On average, 66.9% chose “establish my credit history” as the main reason for having credit cards. Another 42.8% responded: “I meet emergency needs.” - Students were given the choice to mark multiple answers as appropriate. In the second administration of this survey, one year after the original, more students (68% v. 43%) chose “I meet emergency needs.” As the national economy worsened sharply between administration times, the latter group may have either experienced or been more acutely aware of economic emergencies. - By age, 65.6% of those under age 21 listed “establishing credit” as the reason for accepting credit cards; only 43.8% of those over 21 listed “establishing credit” as the reason for acceptance, likely because they had already established credit.

Most students (55.9%) carry outstanding credit card balances of less than \$500; 35.6% pay their balances in full each month; 28.7% pay more than the minimum but less than the total; for 22.6% it varies monthly; and 14.7% usually pay the minimum. (In the second administration of this survey, the number of people knowing their balance dropped from 2.28 to 1.59 on a scale of 1 to 5. Additionally, fewer were certain of the interest rate that their cards carried and the number of cards held dropped significantly from 1.84 to 1.24. This difference may be

attributable to having had banks reset rates frequently in response to a worsening national economy.)

Table 4: Why Students Obtained a Credit Card

Age	Establish Credit History	Meet Emergency	Become Financially Responsible	It is Convenient	Promotional Advantages	Other Reasons	Total
18 to 21	42 (65.6%)	10 (15.6%)	5 (7.8%)	2 (3.1%)	1 (1.6%)	4 (6.3%)	64 (100.0%)
21 and over	32 (43.8%)	13 (17.8%)	6 (8.2%)	5 (6.8%)	3 (4.1%)	14 (19.2%)	73 (99.9%)
Total	74 (54.0%)	23 (16.8%)	11 (8.0%)	7 (5.1%)	4 (2.9%)	18 (13.1%)	137 (99.9%)

Approximately 66.4% of those who pay in full do so without parents' help, though 34.6% sometimes expect parental help. The numbers were taken from the first administration of the instrument. In the second administration of this survey, the number expecting help from parents rose significantly, perhaps because the economy worsened during this time, or perhaps because college costs continued to rise.

The respondents are optimistic about their finances after college; roughly 94.1% expect to be financially stable or better off. However, acceptance of the \$500 credit line was not significantly related to expectations about their financial future.

Gender results were also analyzed; 58.4% ($n = 52$ of 89) of those accepting the line of credit of \$500 were female, and 41.6% ($n = 37$ of 89 accepting) male. At the \$1,000 level, the proportions changed: males accepting the line of credit accounted for 51.4% ($n = 38$ of 74 accepting the line); females accounted for 48.6% ($n = 36/74$). (One respondent did not declare gender, which is why the sample does not add to 139.)

The influence of a student's extant credit limits was analyzed at both the \$500 and \$1,000 levels. The decision to accept/reject a \$500 proposed credit line extension was not influenced by current limits for either age cohort. The effect of existing credit limits on a \$1,000 additional credit line approaches significance with $p \leq 0.10$. Therefore, existing credit line size may influence the decision to accept credit lines of more than \$1,000, especially to those under age 21.

To understand the reasons for acceptance/rejection of the credit line better, we also ran logit on the \$1,000 model. No variable was significant in rejecting that amount, but there were significant variables for acceptance. Those accepting the card were in the three income levels between \$20,000 and \$80,000. Income levels above and below this range were not significant predictors of acceptance. Acceptors were in their first two years of college and did not receive scholarships.

At the \$500 level, the two significant predictors of declining the additional credit were: 1) respondents expecting to be “financially stable” (v. better off, the same, or worse off) after college, and 2) those receiving scholarships. The sole significant predictor of accepting the additional limit was income in the \$60,000 - \$80,000 range.

DISCUSSION

Although results differ in magnitude between the two age cohorts, both make similar decisions. As expected, the proportion of students rejecting the credit extension is significant, with some students not increasing balances to finance short-term needs. At both \$500 and \$1,000, students significantly accepted the lines but stated they did not intend to use them. However, the results also indicate that both groups underestimate how much they will use the credit line *if* they accept; most will borrow at least some of the additional credit line. The number of students planning to leave the line mostly unused vastly exceeded the number that claimed they intended to *immediately* use it. Results suggest they allocate between use and leaving unused the additional credit line extension, confirming Gross and Souleles (2002).

No significant relationship was found between the existing credit limit and accepting a new credit line of \$500. However, the p-value dropped to 0.099 at the \$1,000 offer, perhaps indicating that an even higher credit line offer of perhaps \$1,500 or \$2,000, would produce significant results.

Age Matters

Relative to older students, the 18-21 respondents approach credit with more caution, being more likely to reject additional credit lines and significantly more likely to intend to merely hold the credit line if they do accept it. The intent to *not* spend it is consistent with recognizing the temptation that a credit card presents and the need for either internal or external controls (Shefrin and Thaler, 1992). As respondents mature, their behavior patterns change, consistent with moving from the stage of “emerging adolescence” (Arnett, 2000). Older students were more likely to accept the credit limit, and in particular older students in their first two years of college were more likely to accept the additional \$1,000 credit line. This may be because older students feel ready to handle the financial temptation, plan for the financial constriction of the remaining three- to four- years of additional tuition, or have more personal financial obligations like homes and families. The new law may provide external controls on credit cards issuers, designed to do what emerging adolescents themselves try to do on their own.

Size of the Credit Line Extension Matters

The \$500 additional credit line is less likely to be rejected, by either group. The \$500 amount possibly represents a materially smaller risk of financial irresponsibility than \$1,000. The small additional credit line yields higher usage rates: When the amount is doubled, marginal

spending rates decrease, consistent with buffer stock models. Both acceptance and rejection of the \$500 and \$1,000 credit lines are significantly greater than zero. How the line is spent changes with size. For respondents intending to spend a line of \$500, a portion of it would be used for notes payable, which essentially converts fixed debt into a more flexible, revolving debt, perhaps with a lower monthly payment.

When the credit line is \$1,000 and respondents intend to leave it unused, the percent spent on oneself is less than half, consistent with Shefrin and Thaler (1992). Similarly, these students would save nearly double for a durable asset, consistent with the prices of many durable assets. Finally, respondents who intend to spend the credit line expect to spend roughly twice as much on school expenses as those who intend to leave it unused. Perhaps this finding reflects the increased need for immediate cash, as the costs of tuition and books for students rise sharply.

Income Matters, but the Relationship Is Not Linear

At the \$500 level, those within the \$60,000 - \$80,000 income range were significantly more likely to accept the credit line; no other income levels were significant predictors of accepting an additional \$500 credit limit. At the \$1,000 level, the range of significant income expanded to \$20,000 - \$80,000. Perhaps the higher the credit limit, the harder it is for people of moderate income to resist. Respondents with higher income levels did not tend to accept the additional credit lines more often, perhaps because they had other, adequate sources of funds. Respondents with lower income levels did not tend to accept the additional credit lines more often, supporting the notion that they may be resisting temptation when their financial circumstances would appear to not provide much room for repayment of debt. This relationship deserves extended research. Another source of income, having received a scholarship, was also significant. At the \$500 limit, those receiving a scholarship were significantly more likely to reject the credit line; at the \$1,000 level, those not receiving a scholarship were significantly more likely to accept the credit line.

CONCLUSION

The amount of an additional credit line is a significant predictor of whether the card will be accepted by college students, both under-21 and 21-and-older cohorts; offering too much credit increases the credit line *rejection* rate. But the amount does not significantly influence the intention to use the credit line once accepted, at least for credit extensions of \$500 and \$1,000. College students, many being liquidity-constrained, seek optimal credit line sizes to handle short-term obligations. The new law is designed to help those between the ages of 18 and 21 avoid costly credit mistakes, by further regulating the companies that issue such credit. This study supports the concept that students under the age of 21, through their actions, may be indirectly signaling that they want controls on credit lines to limit their exposure to temptation. Deciding to spend a hefty portion after indicating they would not spend gives further indication that an external locus of control is beneficial. Requiring proper monitoring from a co-signer and/or

demonstration of financial responsibility may help emerging adolescents exercise responsible credit practices while they continue to mature.

Therefore, the conclusions derived from this research are useful for bankers, legislators, academic professionals and students, as well as government educational boards and academic administrators - whose goal should be to ensure that college students have enough cash flow, but not get into major credit card debt.

LIMITATIONS AND FUTURE RESEARCH

It is possible that the responses from this small sample taken from one university may not reflect choices that would be made by the entire population of college students. Therefore, replicating the survey with more students on other college campuses and in other regions of the country would be advisable before drawing broad conclusions. Unfortunately, future sampling will not include equivalent subjects under age 21, with the CCARD Act now in place.

A very interesting result was the change in rejection rate amongst younger students between the \$500 credit line and the \$1000 credit line. Results indicate that adding increased amounts of the hypothetical credit line extension to the survey, perhaps of \$1,500 and \$2,000, or perhaps even \$5,000 and \$10,000, would be useful for determining whether, and to what extent, the results might be sensitive to higher credit line offers. Additional lines of credit that are materially higher might yield significantly different results for both cohorts.

When students intended to spend some and save some, they seemed to answer the question according to whether they would save more than they spent or vice versa. This oversimplified response calls for further examination of respondents' interpretation of the question being asked, and perhaps a different way of stating that question. Future research should focus on the development of behavioral theories that could explain which factors make students leave their lines unused rather than spend the additional credit, and vice versa.

Students' acceptance rate of a \$1,000 credit extension was significant when regressed against students' future financial expectations. However, the explanatory power of the expectations variable was extremely small. Future research should consider including future financial expectations in predictive models, but perhaps at higher credit extension limits.

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APPENDIX

CREDIT CARD SURVEY (Revised)

1. Do you have a credit card? ☐ Yes ☐ No

2. Why do you have a credit card? (Check all that apply):

☐ a. To establish credit history	☐ b. To meet emergency needs
☐ c. To become financially responsible	☐ d. It is convenient
☐ e. For promotional advantages (bonus points, discounts, rebates, etc.)	☐ f. other reasons (list): _____

3. Approximately what is your current credit card balance?

- ☐ \$0-\$500 ☐ \$501- \$1,000 ☐ \$1,001-\$1,500 ☐ \$1,501-\$2,000
☐ \$2,001-\$2,500 ☐ \$2,500+

4. About what percent of your credit card bill do your parents pay?

- ☐ 0%-25% ☐ 25+%-50% ☐ 50+%-75% ☐ 75+%-100%

5. How much do you usually pay toward your credit card balance due?

- ☐ I usually pay the minimum required ☐ I usually pay full balance
☐ I usually pay more than the minimum but less than the total

6. If you could not make the minimum payment required, how sure would you be that your parents will help you out?

- ☐ Very sure they would help me ☐ Unsure whether they would help me
☐ Sure they will not help me

Please choose the best answer.

YES NO

7. Do you know what credit card interest rate you are being charged?		
8. Do you know what APR stand for?		
9. Do you know what your credit card grace period on purchases is?		
10. Do you pay annual fees in your credit card?		
11. Do you regularly check your monthly credit card statement?		

12. What is your line of credit (limit amount on your credit card)?

- ☐ \$0-\$500 ☐ \$501- \$1,000 ☐ \$1,001-\$1,500 ☐ \$1,501-\$2,000
☐ \$2,001-\$2,500 ☐ \$2,500+

13. If you were offered an additional line of credit of \$500, what would you do?

- ☐ Reject the credit extension ☐ Accept the credit but not use it ☐ Accept & use the credit

14. If you'd accept the \$500 line of credit, how would you spend your money (if at all)?

1. For personal expenses (e.g. entertainment, clothes, living expenses)	
2. For school expenses (e.g. school books, tuition, loans)	
3. For an infrequent expense (e.g. vacation, bigger holiday gifts)	
4. Use to buy a durable asset (e.g. car, washing machine, furniture)	
5. Use to pay off notes (e.g. mortgage, car note, pay other credit card)	
6. Hold it for emergencies	
Amount must total \$500	\$500.00

15. If you were offered an additional line of credit of \$1,000, what would you do?

- ☐ reject the credit extension ☐ accept the credit but not use it ☐ accept & use the credit

16. If you'd accept the \$1,000 line of credit, how would you spend your money (if at all)?

1. For personal expenses (e.g. entertainment, clothes, living expenses)	
2. For school expenses (e.g. school books, tuition, loans)	
3. For an infrequent expense (e.g. vacation, bigger holiday gifts)	
4. Use to buy a durable asset (e.g. car, washing machine, furniture)	
5. Use to pay off notes (e.g. mortgage, car note, pay other credit card)	
6. Hold it for emergencies	
Amount must total \$1,000	\$1,000.00

17. Paying off credit cards is (check one of four choices, or all that apply):

- ☐ Spending ☐ Savings ☐ Neither spending nor savings ☐ Both spending and savings

18. How financially well off do you expect to be after college?

- ☐ Much better than now ☐ Somewhat better than now ☐ No better or worse than now
☐ Somewhat worse than now ☐ Much worse than now

19. General Information

Age: _____ Gender: M F Major: _____

Ethnic classification (i.e. white, black, Hispanic, other) _____

Academic year qualification (i.e. freshman, junior ...,) _____

Do you work? ____ yes ____ no If so, how many hours/week on average? _____

Do you have a student loan? ____ yes ____ no Do you have scholarships? ____ yes ____ no

Do you hold at least one credit card under your OWN name? ____ yes ____ no

If yes, how many? _____

20. What is your family's current annual income? (Approximate range)

- ☐ <\$20,000 ☐ \$20,000-\$39,999 ☐ \$40,000-\$59,999 ☐ \$60,000-\$79,999
☐ \$80,000-\$99,999 ☐ \$100,000-\$119,999 ☐ \$120,000-\$139,999 ☐ \$140,000+

