

Chapter 7

Credit Cards as a Market Instrument: Consumer Understanding and Use

Cliff A. Robb and Russell N. James III

Consumers in the United States, and the world as a whole, have become increasingly accustomed to credit cards as a primary medium of exchange. Initially designed as a method of convenience for the wealthiest or most valued customers, credit cards have become a staple financial instrument over the last few decades, with noticeable market expansions in the 1970s and 1980s. With the development of the credit card market in the latter half of the twentieth century, issuers began to recognize new opportunities for profit, resulting in the development of new marketing strategies (see Akers, Golter, Lemm, & Solt, 2005 for a comprehensive history of the credit card industry in the United States). The issuance of credit cards offers greater potential for profits due to the fact that rates on borrowed funds can be relatively high. Credit cards provide their holders with an open-ended loan up to some specified limit. However, the rates attached to these open-ended loans are often variable in nature, thus allowing for extraordinary interest rates under certain conditions, particularly in light of deregulatory legislation in the late 1970s (Garcia, 2007). Those consumers who fail to pay their balance in full at the end of each pay cycle offer the greatest potential for profit, as the average credit card interest rate is around 14.3% (Credit Card Monitor, 2009).

Deregulation of the banking industry in the United States and the need on the part of lenders for more profitable market instruments have resulted in increased availability of consumer credit in the form of credit cards (Garcia, 2007; Scott, 2007; Wheary & Draut, 2007). Once available only to those consumers defined as economically independent and financially secure, credit cards are now easily obtainable

C.A. Robb (✉)
Department of Consumer Sciences, University of Alabama,
Box 870158, Tuscaloosa, AL 35487, USA
e-mail: crobb@ches.ua.edu

R.N. James III
Division of Personal Financial Planning, Texas Tech University,
Box 41210, Lubbock, TX 79409, USA

by individuals regardless of income or other measures of financial well-being. In 1983, 65% of households in the United States held at least one credit card (Castronova & Hagstrom, 2004), whereas more recent estimates suggest that anywhere between 73 and 80% of households have at least one card (Bucks et al., 2009; Garcia, 2007; Min & Kim, 2003). The figure is even higher when excluding low-income households, as 92% of households with income in excess of \$30,000 report holding at least one card (Gould, 2004). Additionally, growth in credit card ownership has been noticeable among low-income consumers as well, with 35% of households with income below \$10,000 per year holding credit cards in 2004 and approximately 50% of households with earnings between \$10,000 and 24,999 holding cards (Garcia, 2007). While these estimates show that the presence of credit card ownership has increased substantially over the last 30 years or so, they do not tell the whole story, as evidence suggests that those households holding credit cards now hold many different cards, averaging 6.3 cards in 2005 (Day & Mayer, 2005).

Credit card usage appears to have changed as well, as data indicate that the size of the real balances on these cards more than tripled between 1983 and 1998 (Castronova & Hagstrom, 2004). Data from the Survey of Consumer Finances suggest that balances have continued to increase, as the median and mean balances rose to \$3,000 (a 25% increase) and \$7,300 (a 30.4% increase), respectively, between 2004 and 2007 (Bucks et al., 2009). Further analysis of balance behavior suggests a slight increase in the number of households that chose to carry a revolving balance on their cards. Whereas roughly 44.4% of families carried a balance in 2001, 46.1% reported carrying a balance in 2007 (Bucks et al., 2009). In terms of total consumer credit outstanding, revolving credit (about 95% of which is credit card debt) has steadily increased since 1970 (Federal Reserve, 2009).

During the same period, the United States savings rate showed considerable decline, reaching a negative value in the third quarter of 2005 according to the Bureau of Economic Analysis (2009). Many critics cite the widespread availability of credit cards brought on by deregulation as a key enabling agent in the current economic climate of “spend now, pay later” (Feinberg, 1986), or what some have referred to as a culture of materialism (Pinto, Parente, & Palmer, 2001). Whether or not this criticism is completely accurate, it remains clear that the financial landscape with respect to credit cards in the United States has undergone serious change. The changing availability and economic significance of credit cards raise new questions for researchers and policymakers alike.

Nature of Cards as a Financial Instrument

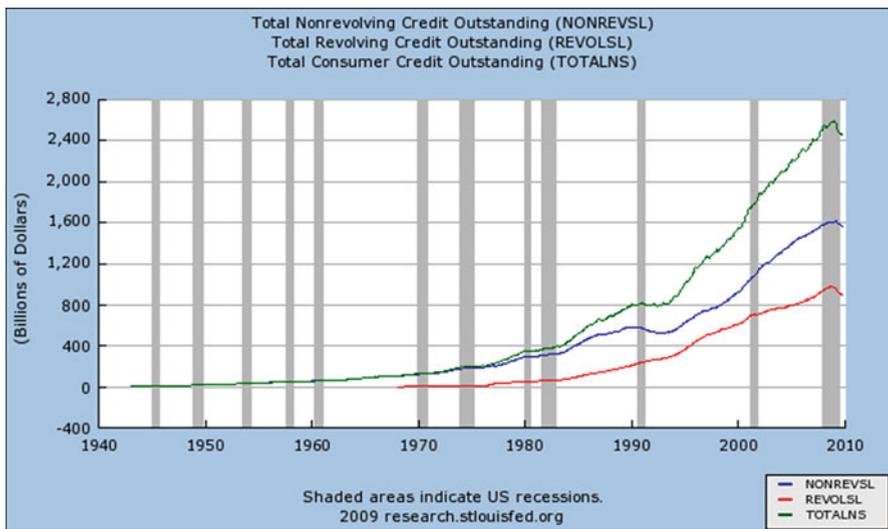
Credit cards are unique as financial instruments in that they serve primarily as a transactions medium (convenience), but may also serve as a form of short-term borrowing. Ownership implies the ability to borrow up to some specified limit on the part of the cardholder, which means that the card carries asset value (like an option). Further, cards may provide the benefit of convenience over other transaction mediums

that may be easily lost or stolen, and some cards offer rewards to frequent users (Chakravorti, 2003). However, cards have the potential to exist as a liability as well should consumers choose to revolve a balance. A formal credit card use model must acknowledge this by conceptualizing a two-stage process, where stage 1 is the obtainment of some credit limit and stage 2 is using or borrowing on some fraction of that limit (Castronova & Hagstrom, 2004). As a result, researchers must be clear as to which demand they are attempting to model. Credit card users may be defined as falling into one of two categories outlined as follows:

Convenience users are those individuals who usually pay off their balance in full during the interest free grace period, thereby avoiding finance charges; revolvers are those who usually do not pay their balances in full and thereby incur finance charges. (Canner & Lockett, 1992, p. 662)

The majority (64%) of bank-type cardholders are convenience users, and do not revolve a balance from month to month (Bucks et al., 2009). However, it is difficult to determine whether this trend has been impacted by the increasing array of credit cards available in the market, as differences in spending behavior based on how cards were obtained have been documented (Barron & Staten, 2004; Mattson, Sahlhoff, Blackstone, Peden, & Nahm, 2004; Norvilitis, Szablicki, & Wilson, 2003).

The increasing popularity of credit cards, both as a transaction medium and as a source of unsecured credit, has resulted in changes in how Americans view and utilize debt (Durkin, 2000). Historical data show that over the second half of the twentieth century, the revolving component of consumer credit has increased relative to income, whereas the nonrevolving component has decreased (see Fig. 7.1). Based on the incentives associated with using credit cards as a convenience tool,



Source: www.research.stlouisfed.org

Fig. 7.1 Consumer credit outstanding (1940–2010)

economically rational consumers should always choose to make purchases with credit cards and pay their balance in full by the due date (Chakravorti, 2003). This is primarily due to the fact that in an economic sense, convenience users actually pay less than the marginal cost to use credit cards, as a relatively small number of cardholders bear a large proportion of the revolving debt that serves to effectively finance those cards being used by convenience users (Chakravorti & Emmons, 2003; King, 2004).

The College Student Market

Much of the available research dealing with consumer credit card issues, such as understanding and attitudes, has focused on college student populations. There are several reasons for this emphasis, not the least of which is convenience for university-based researchers. However, there are several other features of this population that make college student samples ideal for analysis of credit card markets in the United States. As a result of deregulation and high competition between issuers, the standard market was largely saturated by the late 1980s, causing credit card companies to look elsewhere for new sources of profit (Braunsberger, Lucas, & Roach, 2004; Manning & Kirshak, 2005). During the 1980s, regulations still required unemployed students under the age of 21 to have a parental co-signer. However, the 1990s saw credit card marketers drop this requirement due to the high profitability of credit cards in general, and the expected profitability of this new group of consumers (Manning, 2000; Manning & Kirshak, 2005).

Several other factors make college students particularly attractive to credit card issuers. The college student market is quite large (estimated at roughly \$90 billion in the late 1990s), it is a uniquely renewable population (new freshmen arrive each year and are easily targeted), and many incoming students do not yet own a credit card (Braunsberger et al., 2004). Further, some research suggests that the majority of students will hold on to their first card for an average of 15 years, indicating fairly strong brand loyalty among this population (Braunsberger et al., 2004). Today's college student tends to be more comfortable with credit cards as compared with previous generations. For the most part, credit cards have been widely available to them and they appear to attach fewer stigmas to debt accumulation than previous generations have (Pinto et al., 2001; Ritzer, 1995). As a result of this market expansion by issuers, questions have been raised with regard to whether or not college students represent a vulnerable population.

Spending Behavior

A growing body of research provides evidence that consumers behave differently when credit cards are used as the medium for financial transactions, with the general result being that credit card use stimulates spending behavior (Feinberg, 1986;

Galbraith, 1958; Prelec & Simester, 2001). Seminal research by Galbraith expressed the strong interrelationships between advertising and credit in terms of want creation on the part of consumers (Galbraith, 1958). Later research by Feinberg (1986) provides evidence of a credit card premium, as consumers displayed enhanced spending responses when the credit card stimuli were present. These findings have been largely supported in recent years. Utilizing data from an actual auction among MBA students, Prelec and Simester (2001) cite evidence of increased willingness to pay in cases where students were able to use credit cards rather than cash. This line of research has been expanded in recent years to analyze the impact of available credit on spending behavior, rather than focusing on cards as spending stimuli (Gross & Souleles, 2002; Scott, 2007; Soman & Cheema, 2002). Much of this research relies on various income theories, such as the permanent income hypothesis or life-cycle income hypothesis as a method of modeling consumer spending over time. Soman and Cheema (2002) base their research on life-cycle theory, arguing that consumers demand a smooth pattern of consumption that may be facilitated through the use of credit cards. However, consumers often find it difficult to accurately project future income, a necessary component to lifetime consumption estimates, and may rely on information such as consumer credit limits as a signal of future earnings potential (Soman & Cheema, 2002). The authors find that among more naive consumers (i.e., those who are younger, less experienced, and less educated), the impact of credit limits on spending may be quite significant relative to more experienced consumers. Gross and Souleles (2002) present findings of consumers increasing debt as credit limits increase, which runs counter to the Permanent Income Hypothesis. Still, other research has suggested that demand responsiveness in the credit card market primarily occurs at the level of limits, rather than debt (Castronova & Hagstrom, 2004).

Credit Cards and Financial Knowledge/Literacy

Of interest here is an exploration of the relationship between financial knowledge and actual market behavior, specifically credit card behavior. Theoretically, consumer understanding of an issue should have a strong influence over subsequent behavior. Thus, it is reasonable to consider that greater knowledge of financial markets, and credit cards in particular, might have some influence over consumer behavior. Financial knowledge has been measured in a variety of ways, with the general consensus being that Americans, college students in particular, do not possess a high degree of knowledge related to financial markets, regardless of how it is measured (Avard, Manton, English, & Walker, 2005; Braunsberger et al., 2004; Chen & Volpe, 1998; Jones, 2005; Markovich & DeVaney, 1997; Warwick & Mansfield, 2000). Despite this recognized lack of knowledge, prior research suggests that college students generally use credit responsibly (Kidwell & Turrisi, 2000; Lyons, 2004; Newton, 1998; Norvilitis & Santa Maria, 2002).

Liebermann and Flint-Goor (1996) suggest that prior knowledge of an issue is one of the most important variables influencing information processing. These findings are supported by Chen and Volpe's (1998) research, which suggests that one's level of financial knowledge tends to influence opinions and decisions. Providing further evidence of a link between general behavior and knowledge, Hilgert, Hogarth, and Beverly (2003) note strong correlations between a composite score of financial knowledge and an index of credit management behaviors using a composite score of financial knowledge. There is also evidence that knowledge in general, often proxied by education level, may be a significant factor in the development of credit attitudes (Chien & DeVaney, 2001; Zhu & Meeks, 1994).

Analyses of personal financial knowledge tend to emphasize one of two areas of emphasis: general financial knowledge similar to that which would be covered in an introductory course in personal finance or specific financial knowledge (most often in the context of individual's own cards). In assessing specific financial knowledge, one of the most commonly utilized measures is the annual percentage rate (APR), which was first introduced in 1968 under the Truth in Lending Act (TILA) as a summary measure of a given loan's price with the intention that such a measure might allow consumers to compare different loan offers more easily (Lee & Hogarth, 1999). Since its introduction, awareness of APRs has grown considerably among consumers (Durkin, 2000; Durkin, 2002; Hogarth & Hilgert, 2002). Ironically, despite increased awareness of this measure, research indicates that few consumers seem to understand how to use the APR to make effective financial decisions, suggesting that higher awareness does not necessarily correspond with higher understanding (Lee & Hogarth, 1999). Similar results have been found for the college population, as Chen and Volpe (1998) discovered that 67% of the college students surveyed could not correctly answer a multiple-choice question regarding the APR.

Evidence regarding the relationship between financial knowledge and financial behavior has been mixed, however. Results vary depending on how financial knowledge has been measured, what behaviors have been studied, and what populations have been analyzed (Mandell, 2004; Peng, Bartholomae, Fox, & Cravener, 2007). Using a six-question scale to measure financial knowledge, Jones (2005) found no significant relationship between knowledge and college student credit card debt behavior. Similarly, in a research by Borden, Lee, Serido, and Collins (2008), no significant relationship was found between financial knowledge and effective or risky financial behaviors. The lack of clarity in this area has prompted further research with the express purpose of further exploring the question of whether or not increasing financial literacy (or knowledge) results in better credit card use behavior.

A series of recent studies were conducted utilizing the same six-question measure of personal financial knowledge (Table 7.1) with the purpose of exploring the relationship between personal financial knowledge and behavior, with a specific emphasis on credit card use behaviors (Robb, 2009; Robb & James, 2007; Robb & Sharpe, 2009). Each question utilized in the development of the knowledge variable was selected to reflect the type of materials that might be covered in an introductory course in personal financial planning.

Table 7.1 Personal financial knowledge questions

Question	Potential responses (correct response in bold)
Which of the following credit card users is likely to pay the GREATEST dollar amount in finance charges per year, if they all charge the same amount per year on their cards? ^a	Someone who always pays off their credit card bill in full shortly after it is received (%) Someone who only pays the minimum amount each month (%)^b Someone who pays at least the minimum amount each month, and more when they have more money (%) Someone who generally pays their card of in full, but occasionally will pay the minimum when they are short on cash (%) Don't know (%)
Which of the following types of investment would best protect the purchasing power of a family's savings in the event of a sudden increase in inflation? ^a	A 25-year corporate bond A house financed with a fixed-rate mortgage A 10-year bond issued by a corporation A certificate of deposit at a bank Don't know
Which of the following statements best describes your right to check your credit history for accuracy? ^a	All credit records are the property of the US Government and access is only available to the FBI and Lenders You can only check your credit report for free if you are turned down for credit based on a credit report Your credit report can be checked once a year for free You cannot see your credit report Don't know
Which of the following loans is likely to carry the highest interest rate?	A car loan A home equity loan A credit card loan A student loan Don't know
Which of the following is TRUE about the annual percentage rate (APR)? ^c	APR is expressed as a percentage on a semi-annual basis APR does not take into account all loan fees APR is not an accurate measure of the interest paid over the life of the loan APR should be used to compare loans Don't know
A high-risk and high-return investment strategy would be most suitable for ^c	An elderly retired couple living on a fixed income A middle-aged couple needing funds for their children's education in 2 years A young married couple without children All of the above because they all need high returns Don't know

^a Indicates a question used in the 2006 Jump\$tart questionnaire

^b Correct answers indicted in bold face type

^c Indicates a question modified from Chen and Volpe (1998)

Robb and James (2007) used a cumulative logit model to predict scores on the measure of financial knowledge. One of the key variables of interest selected for the analysis was credit card use, and this variable was based on research by Roberts and Jones (2001), who developed a credit card use scale that differentiates those consumers who use their cards more responsibly from those that use them less responsibly. Credit card use was found to be a significant predictor of personal financial knowledge, as those students who reported more responsible use behavior scored significantly higher on the financial knowledge measure. Analysis of credit card balance behavior provided further support for a relationship between behavior and knowledge (Robb & Sharpe, 2009). Utilizing a double-hurdle analysis, college students were differentiated in two separate stages of analysis (see Cragg, 1971 for a formal discussion of the double-hurdle analysis). In the first stage, students were differentiated based on whether or not they carried a balance. In the second stage, looking at only those students who reported revolving a balance in stage one, students were differentiated based on the extent to which they revolved a balance. Whereas more knowledgeable students were predicted to be less likely to revolve a balance, and lower balances were expected as knowledge increased, more knowledgeable students actually displayed higher balances among revolvers (Robb & Sharpe, 2009). While findings from this analysis did not support the hypothesis of more responsible behavior being directly linked to greater financial knowledge, it does suggest that the two variables are still related, and suggests the need for more detailed, longitudinal analyses in the future.

A separate analysis by Robb (2009) used the 12 components of the credit card use scale as separate independent variables in a series of logistic regressions, with the financial knowledge measure serving as one of the key predictor variables of interest. Of the 12 models analyzed, 11 proved to be significant, with the personal financial knowledge measure proving significant in seven out of the 11 models. Specifically, financial knowledge was strongly associated with whether students reported having credit cards at the maximum limit, using one credit card to pay off another, always paying off cards at the end of the month, making only the minimum payment, delinquency, rarely going over their credit card limit, and taking cash advances on their cards. In each case, personal financial knowledge was associated with more responsible credit card use behavior. Looking at those models where knowledge was not significant, the questions tended to focus more on emotional aspects of the purchase decision, or impulse purchase behavior, suggesting that knowledge may be less relevant to certain behaviors as compared to others.

Based on the complicated nature of human decision-making, combined with research regarding heuristics, biases, and emotional coping mechanisms, some researchers suggest that education will be largely ineffective at improving personal financial behavior (Willis, 2008). Evidence to this date does suggest that there is a relationship between knowledge and financial behavior (at least in terms of credit card behavior), although the relationship does appear to be more complicated than initially hypothesized, and may be conditional on the specific behavior being analyzed.

Current Legislation and Changing Market Structure

The recent financial crisis in the United States has resulted in increased scrutiny of the credit card market. For years, market expansion by companies and an increasing emphasis on easy credit were largely ignored by federal regulators. For decades, information disclosures as outlined by the TILA represented the majority of consumer protection legislation (Durkin, 2002). The primary purpose was to avoid uninformed credit use, upheld by the general belief that more informed consumers would be able to make good decisions. As recently as 2001, survey research by the Federal Reserve suggested that the majority of consumers who held credit cards believed that obtaining useful information pertaining to their own cards was very easy or somewhat easy (Durkin, 2002).

With the passage of the Credit Card Accountability Responsibility and Disclosure Act of 2009 (H.R. 627), popularly referred to as the credit card holders' bill of rights, consumers and providers face a changing credit card market. One of the most significant changes in the context of the present research is the re-introduction of restrictions for college-age Americans. Individuals under the age of 21 must provide either proof of resources or have a parental co-signor. Further, the new legislation abolishes the concept of universal default and requires lenders to provide advance notice to consumers of any rate changes (though companies may still choose to change rates for a variety of reasons). At present, it is unclear what the broader implications of this legislation will be, although it is likely that the area of consumer understanding and use will be a key area of interest as these changes are implemented.

References

- Akers, D., Golter, J., Lemm, B., & Solt, M. (2005). Overview of recent developments in the credit card industry. *FDIC Banking Review*, 17(3), 23–35.
- Avard, S., Manton, E., English, D., & Walker, J. (2005). The financial knowledge of college freshmen. *College Student Journal*, 39(2), 321–338.
- Barron, J. M., & Staten, M. E. (2004). Usage of credit cards received through college student-marketing programs. *Journal of Student Financial Aid*, 34(3), 7–26.
- Borden, L. M., Lee, S. A., Serido, J., & Collins, D. (2008). Changing college students' financial knowledge, attitudes, and behavior through seminar participation. *Journal of Family Economic Issues*, 29(1), 23–40.
- Braunsberger, K., Lucas, L. A., & Roach, D. (2004). The effectiveness of credit-card regulation for vulnerable consumers. *Journal of Services Marketing*, 18(5), 358–370.
- Bucks, B. K., Kennickell, A. B., Mach, T. L., & Moore, K. B. (2009). Changes in U.S. family finances from 2004 to 2007: evidence from the Survey of Consumer Finances. *Federal Reserve Bulletin*, 95, A1–A56.
- Bureau of Economic Analysis. (2009). Personal savings rate. Retrieved May 26, 2009 from <http://www.bea.gov/briefirm/saving.htm>.
- Canner, G. B., & Lueckert, C. A. (1992). Developments in the pricing of credit card services. *Federal Reserve Bulletin*, 78(9), 652–666.

- Castronova, E., & Hagstrom, P. (2004). The demand for credit cards: evidence from the survey of consumer finances. *Economic Inquiry*, 42(2), 304–318.
- Chakravorti, S. (2003). Theory of credit card networks: a survey of the literature. *Review of Network Economics*, 2(2), 50–68.
- Chakravorti, S., & Emmons, W. R. (2003). Who pays for credit cards? *Journal of Consumer Affairs*, 37(2), 208–230.
- Chen, H., & Volpe, R. P. (1998). An analysis of personal financial literacy among college students. *Financial Services Review*, 7(2), 107–128.
- Chien, Y., & DeVaney, S. A. (2001). The effects of credit attitude and socioeconomic factors on credit card and installment debt. *Journal of Consumer Affairs*, 35(1), 162–179.
- Cragg, J. G. (1971). Some statistical models for limited dependent variables with applications to the demand for durable goods. *Econometrica*, 39(5), 829–844.
- Credit Card Monitor. (2009). Weekly credit card monitor. Retrieved May 26, 2009 from <http://www.indexcreditcards.com/creditcardmonitor/>.
- Day, K., & Mayer, C. E. (2005). Credit card penalties, fees bury debtors. *Washington Post*, March 6, Section A, p. 1.
- Wheary, J., & Draut, T. (2007). *Who pays? The winners and losers of credit card deregulation*. New York: Dēmos.
- Durkin, T. A. (2000). Credit cards: use and consumer attitudes, 1970–2000. *Federal Reserve Bulletin*, 86, 623–634.
- Durkin, T. A. (2002). Consumers and credit disclosures: credit cards and credit insurance. *Federal Reserve Bulletin*, 88, 201–213.
- Federal Reserve. (2009). Consumer credit. federal reserve statistical release, G.19. Retrieved May 20, 2009 from <http://www.federalreserve.gov/releases/g19/>.
- Feinberg, R. A. (1986). Credit cards as spending facilitating stimuli: a conditioning interpretation. *The Journal of Consumer Research*, 13(3), 348–356.
- Galbraith, J. K. (1958). *The affluent society*. Boston, MA: Houghton Mifflin.
- Garcia, J. (2007). *Borrowing to make ends meet: the rapid growth of credit card debt in America*. New York: Dēmos.
- Gould, J. (2004). *Credit card customer acquisition strategy*. The Tower Group, Inc.
- Gross, D. B., & Souleles, N. S. (2002). Do liquidity constraints and interest rates matter for consumer behavior? Evidence from credit card data. *Quarterly Journal of Economics*, 117(1), 149–185.
- Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). Household financial management: the connection between knowledge and behavior. *Federal Reserve Bulletin*, 89, 309–322.
- Hogarth, J. M., & Hilgert, M. A. (2002). Financial knowledge, experience and learning preferences: preliminary results from a new survey on financial literacy. *Consumer Interests Annual*, 48, 1–7.
- Jones, J. E. (2005). College students' knowledge and use of credit. *Financial Counseling and Planning*, 16(2), 9–16.
- Kidwell, B., & Turrisi, R. (2000). A cognitive analysis of credit card acquisition and college student financial development. *Journal of College Student Development*, 41(6), 589–598.
- Kim, H., & DeVaney, S. A. (2001). The determinants of outstanding balances among credit card revolvers. *Financial Counseling and Planning*, 12(1), 67–78.
- King, A. S. (2004). Untangling the effects of credit cards on money demand: convenience usage vs. borrowing. *Quarterly Journal of Business and Economics*, 43(1/2), 57–80.
- Lee, J., & Hogarth, J. M. (1999). The price of money: consumer's understanding of APRs and contract interest rates. *Journal of Public Policy and Marketing*, 18(1), 66–76.
- Liebermann, Y., & Flint-Goor, A. (1996). Message strategy by product-class type: a matching model. *International Journal of Research in Marketing*, 13, 237–249.
- Lyons, A. C. (2004). A profile of financially at-risk college students. *Journal of Consumer Affairs*, 38(1), 56–80.
- Mandell, L. (2004). *Financial literacy: are we improving?* Washington, D.C.: JumpStart Coalition for Personal Financial Literacy.

- Manning, R. D. (2000). *Credit card nation: the consequences of America's addiction to credit*. New York: Basic Books.
- Manning, R. D., & Kirshak, R. (2005). Credit cards on campus: academic inquiry, objective empiricism, or advocacy research? *NASFAA Journal of Student Financial Aid*, 35(1), 39–48.
- Markovich, C. A., & Devaney, S. A. (1997). College seniors' personal finance knowledge and practices. *Journal of Family and Consumer Sciences*, 89(3), 61–65.
- Mattson, L., Sahlhoff, K., Blackstone, J., Peden, B., & Nahm, A. Y. (2004). Variables influencing credit card balances of students at a Midwestern university. *Journal of Student Financial Aid*, 34(2), 7–18.
- Min, I., & Kim, J. (2003). Modeling credit card borrowing: a comparison of type I and type II tobit approaches. *Southern Economic Journal*, 70(1), 128–142.
- Newton, C. (1998). Today's college students: responsible, self-reliant, realistic. *Credit World*, 86(4), 16–17.
- Norvilitis, J. M., & Santa Maria, P. (2002). Credit card debt on college campuses: causes, consequences, and solutions. *College Student Journal*, 36, 357–364.
- Norvilitis, J. M., Szablicki, P. B., & Wilson, S. D. (2003). Factors influencing levels of credit-card debt in college students. *Journal of Applied Social Psychology*, 33(5), 935–947.
- Peng, T. M., Bartholomae, S., Fox, J. J., & Cravener, G. (2007). The impact of personal finance education delivered in high school and college courses. *Journal of Family and Economic Issues*, 28, 265–284.
- Pinto, M. B., Parente, D. H., & Palmer, T. S. (2001). College student performance and credit card usage. *Journal of College Student Development*, 42(1), 49–58.
- Prelec, D., & Simester, D. (2001). Always leave home without it: a further investigation of the credit-card effect on willingness to pay. *Marketing Letters*, 12(1), 5–12.
- Ritzer, G. (1995). *Expressing America: a critique of the global credit card society*. Thousand Oaks, CA: Pine Forge Press.
- Robb, C. A. (2009). An exploration of the relationship between college student personal financial knowledge and credit card use behaviors. Working paper.
- Robb, C. A., & James, R. N. (2007). Personal financial knowledge among college students: associations between individual characteristics and scores on an experimental measure of financial knowledge. *Consumer Interests Annual*, 54.
- Robb, C. A., & Sharpe, D. L. (2009). Effect of personal financial knowledge on college students' credit card behavior. *Financial Counseling and Planning*, 20(1), 25–43.
- Scott, R. H., III. (2007). Credit card use and abuse: a Veblenian analysis. *Journal of Economic Issues*, 41(2), 567–574.
- Soman, D., & Cheema, A. (2002). The effect of credit on spending decisions: the role of the credit limit and credibility. *Marketing Science*, 21(1), 32–53.
- St. Louis Federal Reserve. (2009). Economic research. Retrieved November 16, 2009 from <http://research.stlouisfed.org/fred2/search/>
- Warwick, J., & Mansfield, P. (2000). Credit card consumers: college students' knowledge and attitude. *Journal of Consumer Marketing*, 17(7), 617–626.
- Zhu, L. Y., & Meeks, C. B. (1994). Effects of low income families' ability and willingness to use consumer credit on subsequent outstanding credit balances. *Journal of Consumer Affairs*, 28(2), 403–421.