

GENDER DIFFERENCES IN ATTITUDES TOWARDS CREDIT, TERMS OF
TRADE, AND THE HOUSEHOLD BALANCE SHEET

By

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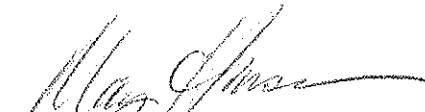
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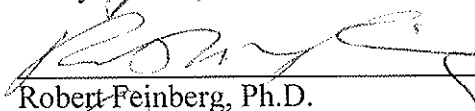
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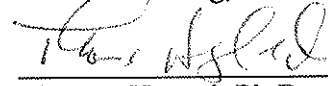
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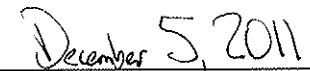
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DEDICATION

To my dad, who taught me how to live and how to die.

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ABSTRACT

Changes in lending and financial innovations in the last 20 years increased access to debt. Consumers embraced the conveniences of debt, and social changes encouraged debt use. As a result, household debt grew considerably. Little is known about how these changes in the availability of debt affected women's finances. It does seem that bankruptcy rates grew, particularly for women, with women accounting for 30% of all bankruptcy filings in 1997 (Sullivan and Warren 1999). No previous research focuses on understanding differences in household debt by gender. We do not know if women prefer different relative amounts of debt, if they use different types of lending arrangements, and if they choose different balance sheet ratios relative to men. The objective of this dissertation is to determine the extent to which gender differences in attitudes towards credit, and gender differences in the terms of borrowing can explain gender differences in household balance sheets. To accomplish the objectives, I use the 2007 Survey of Consumer Finances (SCF).

When I compare never married women to all respondents, never married women are more accepting of most kinds of debt. This is consistent with conceptions of women

as spendthrifts but not consistent with the conservative attitudes towards investment by women. However, when I look more specifically at gender by limiting the analysis to just never married women and never married men, there are no detectible gender differences in attitudes towards the use of credit.

When I compare never married women to all respondents, never married women pay higher interest rates on credit card debt. However, when I look specifically at gender by limiting the sample to never married women and never married men, there are no detectable gender differences in interest rate loan costs.

Finally, I show that despite their greater acceptance to borrow, never married females tend to have stronger balance sheet ratios than married/cohabitating households. Despite no differences in attitudes towards credit, never married women have weaker household balance sheets than never married men, indicating that never married women are borrowing more, relative to their available resources.

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CHAPTER 1

INTRODUCTION

Changes in lending and financial innovations in the last 20 years increased access to debt through the use of credit cards, payday loans, mortgages, and home equity lines of credit. Consumers embraced the conveniences of debt, and social changes encouraged debt use. As a result, household debt grew considerably. Over a 25 year period, the required payments on debt to income ratio rose from 5% in 1983 to 10% in 1995, and to 13% in 2007 (Dynan 2009). Little is known about how these changes in the availability of debt affected women's finances. It does seem that bankruptcy rates grew, particularly for women, with women accounting for 30% of all bankruptcy filings in 1997 (Sullivan and Warren 1999). No previous research focuses on understanding differences in household debt by gender. We do not know, for example, if women prefer different relative amounts of debt, if they use different types of lending arrangements, and if they choose different balance sheet ratios relative to men. In this dissertation, I fill this gap in the literature. The objective of this dissertation is to determine the extent to which gender differences in attitudes towards credit, and gender differences in the terms of borrowing can explain gender differences in household balance sheets.

The increased availability of credit changed the average household balance sheet over the last 20 years. As a whole, it is much more common in the US to use debt to finance all types of expenditures, not just homes, vehicles, and other large purchases, as in the past (Olney 1991). It is typical today for households to use credit cards and home

equity lines of credit to finance current expenditures. With easy access to credit, debt has grown at a faster pace in recent years. Specifically, the increase in the use of debt by households resulted in the median debt to income ratio tripling from 1982 to 2004 (Dynan and Kohn 2007). Household debt grew every year for 65 straight years, until 2009 when households started deleveraging (Whitehouse 2010). However, it is unknown if the changes in the availability of credit affected household balance sheets of women to a greater or lesser degree than it did household balance sheets of men.

Existing Evidence of Gender Differences

The purpose of this section is to explain how the existing literature hints that men's and women's preferences about debt might be different. Women are faced with a variety of obstacles that prevent them from being as financially successful as men. For example, women earn less than men, giving them less to invest. The result is lower saving for retirement than men, despite women's higher savings rates (Seguino and Floro 2003). In general, women tend to hold less assets than men, resulting in a gender asset gap (Deere and Doss 2006). Assets are important to households because they can appreciate in value, generate income, and serve as a source of collateral. Additionally, assets provide a level of security in that they buffer against emergencies. They can also serve as a way to increase productivity and improve the ability to earn a living of the owner (Deere and Doss 2006). Overall, wealth provides both economic and political power. With less income and fewer assets, women are more financially vulnerable than men.

The asset gap is partly explained by gender differences in preferences: Women exhibit more risk-averse behavior than men in the choice of their assets portfolio, which results in lower returns than men (Jianakoplos and Bernasek 2007). It also appears that women experience statistical discrimination (Phelps 1972) when they receive financial and legal advice for investments, insurance, loans, and bankruptcy, since they are viewed as the “safer sex” (Lefgren and McIntyre 2009). MacGregor and Slovic (1999) found that women are more likely to use financial planners than men. This could be because of their lack of education or because of higher concerns over their future than men. Men feel more competent in financial matters than women, and consequently are willing to take risks to amass wealth (Prince 1993).

Researchers believe that women save at higher rates than men because of their conservative preferences (Byrnes, Miller et al. 1999) to compensate for larger fluctuations in income, because they are more likely to work part-time or be under-employed, and because they have less access to employment benefits, like health insurance, pensions, profit-sharing, and 401k programs (Blau, Ferber et al. 2002). Bernasek and Shwiff (2001) contend that women’s conservative preferences could be a rational response to their greater vulnerability. These conservative preferences might be indicative of gender differences in attitudes towards credit.

An additional hardship for women is that they tend to take on more caring responsibilities (Blau 1998; MacDonald, Phipps et al. 2005), especially for children and aging parents, which contribute to their “second shift” (Bittman and Wajcman 2000; Floro and Miles 2003). The “second shift” would tend to increase their costs when searching for and reviewing loans. Bajtelsmit and Bernasek (1996) argue it is above all

important to women to care for their children, but in many cases, also other family members. Only once subsistence needs are met, can the women consider saving. She may feel it is more important to invest in her children through better nutrition and education than to save.

Women, on average, experience greater financial vulnerability and less control over their lives than men. All of these obstacles create issues for women's well-being throughout the life cycle. However, little is known about differences in debt preferences between men and women. In order for policies to improve the status of women in society, more research is needed.

My dissertation shows whether there are differences between attitudes towards credit, terms of credit, and balance sheets of never married women and never married men. I use the Survey of Consumer Finances (SCF) 2007 data which includes information on all types of household debt including: mortgages, vehicles, credit cards, and education. Understanding the differences that exist between the balance sheets, debt, credit constraints, and attitudes towards credit of never married women and never married men informs policy makers, particularly for the newly created Bureau of Consumer Financial Protection's Women's Office and their initiatives.

Research Questions

Financial decisions are complex. They depend upon current and expected future income, assets, rate of time preference, credit constraints, and credit attitudes. The extent to which men and women have different income and assets is well-studied, but gender differences in the other aspects which together comprise the demand for debt and the

household balance sheet have not been studied. This dissertation addresses these unknown aspects of the demand for debt. The specific research questions are to determine the extent to which:

1. Attitudes towards credit differ between never married women and never married men.
2. Terms of credit on similar types of debt differ between never married women and never married men.
3. Differences in household balance sheets are the result of differences in attitudes versus differences in constraints.

Completion of these objectives using the SCF contributes to the field of gender economics. Gender economics is growing as researchers determine that a gender-sensitive approach to studying economics better explains many behaviors. For example, we have learned that women are more risk averse than men in their asset holdings and women save at higher rates than men. Asset holdings are an important part of a gender-sensitive analysis of the household balance sheet, but analysis of debt is also critical to understanding overall household financial well-being. My gender-sensitive analysis of debt holdings expands the picture of the household balance sheet by considering credit attitudes and differences in terms of credit.

For this first attempt at a gender-sensitive analysis of credit and borrowing, I focus on never married women. By never married, I am limiting the analysis to head of households that have never been married, are not cohabitating, widowed or divorced. Married or cohabitating couples may be influenced by other members of the household through intra-household bargaining. Gender sensitive research considers that both

cooperative and non-cooperative bargaining can take place inside the household. However, no survey questions solicit information on any form of financial bargaining that takes place in the household. Therefore, it is not possible to understand any of the dynamics of the decision making process that takes place in a cohabitating or married couple household. In addition, the financial position of divorced or widowed households may be influenced by the family member no longer in the household.

The focus on never married individuals removes the complexity of the ‘blackbox’ of household decision-making processes and establishes a baseline of behavior among never married individuals to which future research can be compared. Ideally, gender-sensitive research on household decisions would survey both members of the household (Doss, Grown et al. 2008). However, limited data is available because of the expense of such research. For each objective, I compare the results for never married women to results for all heads of households with current marital status as an explanatory variable. This methodology is employed in the following chapters.

Data

The purpose of this section is to explain the dataset used and the challenges involved. To accomplish the objectives, I use the 2007 Survey of Consumer Finances (SCF), which is one of the most comprehensive financial surveys available. The public use version of the 2007 SCF provides data for 4,418 households (Kennickell 2009). The SCF is conducted by the Federal Reserve Board and the National Organization for Research at the University of Chicago. They survey households from all levels of economic status, with oversampling of the wealthy. Wealthy households are identified

through the Internal Revenue Service Statistics of Income Division. The SCF contains detailed information about all forms of household assets and liabilities, terms of borrowing on each loan, and on attitudes towards credit of the respondent (Kennickell 2009). A detailed list of variables used in this dissertation is provided in each chapter. Summary statistics are provided in each chapter where the variables are used and discussed.

To study gender differences in attitudes toward credit, I use answers of respondents to questions about how they feel about borrowing to finance a vacation, borrowing to purchase jewelry or furs, borrowing to purchase a car, borrowing to finance education, and borrowing to meet consumption needs when income falls. I control for expectations about the future using self reported beliefs about how long respondents expect to live and current health status, whether their economic expectations are better or worse than current conditions and in what directions they expect interest rates to go. Financial information is also utilized, such as access to retirement and health care, whether the respondent has been turned down for credit in the last five years, and if the respondent has been unemployed in the last 12 months.

The survey also acquires information on all forms of loans, including the terms of the loan. Interest rates on loans and transaction costs serve as dependent variables. The amount of time spent in searching for a loan serves as a proxy for individual transaction costs of obtaining a loan. Credit attitudes, loan information, and credit worthiness variables function as the independent variables. Specific loan information includes the length of the loan and the loan to value ratio for mortgages and vehicle loans. Credit

worthiness variables include wage income, past bankruptcy, making late payments, and being turned down for credit in the last five years.

Finally, specific loan balances and monthly loan payments by category are analyzed as ratios to total assets, monthly income, and total income. These ratios form the dependent variables in Chapter 4. Demographic variables, loan costs, loan information, credit attitudes, and credit worthiness variables serve as dependent variables.

In order for my work to be comparable to the greater literature that uses the SCF, I use the definitions of household financial position that are used in the Bulletin (Kennickell 2009). The definitions that the SCF uses to create these variables are available in SAS code on their webpage (Kennickell 2009).

The SCF solicits responses from the one member of the household that the interviewer establishes as the most financially knowledgeable (Lindamood, Hanna et al. 2007; Kennickell 2009). This person is not necessarily the head of the household by SCF definition. In married households, the male is designated as head. In same sex households, the oldest partner is designated as the head (Lindamood, Hanna et al. 2007).

Challenges of Using the SCF

The purpose of this section is to explain the difficulties of using the SCF. Because the SCF questions involve sensitive financial data that households are often reluctant to provide, many variables have missing information. Interviewers are trained to get the best approximation using ranges if the household does not give an exact amount. Despite the best efforts of the interviewer, some respondents still do not provide answers to some questions. To correct for missing information and to ensure the privacy

of respondents, each record is imputed 5 times, resulting in 22,090 replicates (Kennickell 2009). To create the replicates, the SCF uses a model called FRITZ – Federal Reserve Imputation Technique Zeta that was developed specifically for the SCF. The model creates replicates through a complex system of predetermined paths using a highly structured set of constraints (Kennickell 1998). It imputes missing data one variable at a time for each dataset and then uses the complete dataset for imputing the next impute until all datasets have been imputed five times, following the methodology developed by Rubin (1987).

Not using all the replicates could result in biased results (Carlin, Li et al. 2003; Lindamood, Hanna et al. 2007; Kennickell 2009). I follow the procedures provided in the SCF web page and code book, which provides specific instructions for properly using the replicates (Kennickell 2009). Additionally, since the survey oversamples the wealthy, all regression results are weighted using the population weight assigned to each observation by the SCF. Use of the weights is important for the comparison of never married individuals to the total population.

Use of multiple imputations is gaining popularity as researchers need a reliable way to deal with missing data and ensure privacy. However, limitations exist in the analysis of multiply imputed data sets and controversy exists in the literature as to the best way to deal with the limitations. Specifically, some concepts that are well defined in normal regression analysis do not have a comparable in multiple imputation analysis (StataCorp 2009). Goodness-of-fit is one such example. The literature suggests using the average of the goodness-of-fit indicator over all five imputations (Li, Meng et al.

1991; Carlin, Li et al. 2003; Carlin, Galati et al. 2008; Lee and Carlin 2010). This methodology has been applied throughout the chapters.

Conclusion

This dissertation is organized as follows: Chapter 2 discusses the current state of the literature on credit attitudes, the methodology, and the results of gender differences in attitudes toward credit. Chapter 3 discusses the literature on loan costs, the methodology, and results of gender differences in interest rates and time spent shopping for a loan. Finally, Chapter 4 considers gender differences in the ratios of household balance sheets. It includes a review of the current research on household financial stability, the methodology, and discussion of gender sensitive results. Each chapter concludes with suggestions for future research.

CHAPTER 2

GENDER DIFFERENCES IN ATTITUDES TOWARDS CREDIT

The first objective of this dissertation is to determine what explains attitudes towards credit and the extent to which these attitudes towards credit differ between men and women. The literature review that follows suggests that increased access to credit changed attitudes of consumers towards the use of credit during the 20th century. Consumers are more willing to borrow on credit to finance current consumption with increased access to credit. Households that prefer to consume in the current period, rather than at later time periods, should have more accepting attitudes towards credit since they should be willing to borrow to finance current consumption. In addition, the literature review that follows shows that women have more conservative attitudes than men, given the many economic disadvantages they face. However, it is unknown if women exhibit the same conservative preferences when it comes to household debt. For example, it may be that women have higher demands for consumption today in order to meet the needs of individuals for whom they provide care, despite their conservative nature. Therefore, the net effect of these factors on attitudes towards debt is unclear before this research.

The main findings are that when I compare never married women to all respondents, never married women are more accepting of most kinds of debt. This is consistent with conceptions of women as spendthrifts but not consistent with the concept

of women as spendthrifts but not consistent with the conservative attitudes towards investment by women. However, when I look more specifically at gender by limiting the analysis to just never married women and never married men, there are no detectible gender differences in attitudes towards the use of credit.

This chapter is organized as follows: A review of the current literature on credit attitudes follows, the research methodology is then proposed, followed by descriptive statistics, and the tests of mean differences. The chapter concludes with regression analysis and suggestions for further research.

Literature Review

Modern credit markets provide a variety of loan types and payment options to consumers that were not always available. With additional credit options and changes in society, the buying habits of consumers changed along with their willingness to finance purchases through debt. This literature review highlights the changes in attitudes towards credit during the 20th century as modern credit markets developed into their current state.

Evolution of Attitudes towards Credit during the 20th Century

Consumers have two options. They can wait till they have accumulated enough funds to consume or they can borrow money in order to consume today. So there is a trade-off between consuming today and the cost of paying back the principal plus interest over time. Today households have the option of borrowing through installment type loans to finance the purchase of a home, a vehicle, and an education. These installment loans are characterized by fixed periods and fixed payments. In addition, households also

utilize revolving credit through home equity lines of credit and credit cards. Revolving credit is different from installment debt in that there are no fixed monthly payments, only minimum monthly payments that must be made. Therefore, the consumer has leverage in the amount of payments and the duration of the debt. Consumers may have different preferences as to the type of loan they have due to differing circumstances.

The 20th century has seen a great deal of innovation in consumer credit markets. Installment debt became available to households in the 1920s as households started to purchase consumer durables, such as washing machines, refrigerators, and vehicles. Initially, installment debt was short term and required large down payments. Defaulting on the loan meant repossession, the loss of the large down payment, and the loss of any equity that had been accumulated through payments (Olney 1999). Therefore, consumers drastically cut their consumption during the first years of the Great Depression so that they could make their monthly payments on the installment loans and preserve wealth. The law was changed late in the 1930s giving consumers their equity in the event of default. Consequently default rates grew because it was no longer as costly to consumers.

Information technology increased both the speed of approval and the availability of loans, including mortgages. Information about prospective borrowers is now readily available, so that good risks can be financed at lower interest rates, requiring no prior relationship between the borrower and the lender. This increases the overall accessibility of loans. Information technology also changed consumer behavior. For example, consumers are now much more knowledgeable about opportunities to refinance and took

advantage of “cash out” refinancing when the equity in their homes grew. In addition, households are able to smooth consumption by using new sources of credit rather than relying on precautionary savings (Bostic, Gabriel et al. 2009).

Early access to credit cards was limited to wealthy households, but over time credit card companies extended credit to more households. From 1980 to 2004, revolving debt increased from 3.2% of median family income to 12.5% (White 2007). In the 1980s, it was not possible to pay for a Big Mac, fries, and Coke with a credit card. However, today credit cards are accepted almost anywhere and consumers embrace their convenience. Research on credit cards focuses on two reasons for their use: convenience and deferred payment. Many consumers use credit cards as a convenience. They don’t have to carry cash, the transaction is often faster, and documentation is readily available. In addition, with the advent of e-commerce, credit card use makes purchasing anything on the internet much faster than sending a check. Many credit card holders use their cards for convenience and pay off the entire balance at the end of the month. In contrast, many credit card holders carry a balance from month to month and only pay the minimum monthly payment. Initially, credit card balances had to be paid in full. However, when credit card companies introduced minimum monthly payments, consumers now had the option to use credit cards as revolving credit. In 1970, just 20% of all households owed a balance on a credit card. By 1998, over 40% did (Durkin 2000). Credit card use is shown to increase with income, education, and social class (Garcia 1980). When studying credit supply, Gross and Souleles (2001) find that when credit

limits are increased on credit cards, there is an immediate and significant rise in debt by all users, not just those at or close to their limit.

Home equity lines of credit became widely available in the 1980s. They were popular because they offered a type of revolving credit with flexible repayment of the outstanding balance. In addition, the interest on the home equity line of credit was tax-deductible at a time when the interest tax deduction was being phased out on consumer debt interest due to the Tax Reform Act of 1986. Therefore, in order to keep the tax deduction, many consumers transferred consumer debt to their home equity line of credit.

With the growth of available credit came changes in attitudes towards credit. As a society, the US consumer became more willing to borrow on credit as it became accepted in society (Merskin 1998; Watkins 2000). In addition, consumers not only feel it is acceptable to buy on credit for necessary long-lived assets like homes and vehicles, but they are now accepting of borrowing to purchase luxuries (Livingstone and Lunt 1992; Norton 1993). People also engage in debt to maintain or improve their lifestyle (Norton 1993). Calder (2001) argues that the advent of what he calls the credit revolution changed society from production based to consumer based. This change caused consumers to be disciplined in money management and budgeting to make their monthly payments. The Great Depression left households with no savings, but along with government support for consumption, fully validated consumer borrowing. The validation of borrowing to consume now, instead of savings to consumer later, affectively changed the attitudes of consumers.

Cynamon and Fazzari (2008) argue that social cues now encourage more spending and the use of debt to finance consumption. Individuals often identify with a reference group that they receive social cues from. If the reference group places importance on the status of consumption, then the consumer who identifies with this group places more importance on these types of consumption. Research shows that individuals that borrow to finance consumption feel stronger about belonging to a reference group than those that don't borrow (Gärling, Kirchler et al. 2009). In addition, Dynan (2009) notes how the importance of home ownership in society increased due to the changing financial opportunities involved with unconventional types of loans for home purchases. More households qualified to purchase a home, so their reference group changed. Garling, Kerchler et al. (2009) report that adjusting living standards is the last thing that households alter when experiencing financial hardship because it is painful and socially unattractive. Ideologies of entitlement have also been associated with uncontrolled use of credit cards (Bernthal, Crockett et al. 2005). This research further supports that individuals want to remain associated with their established reference group. No research has determined if reference groups are gendered determined. It may be that never married females identify or create a reference group with other never married females.

Another important component of attitudes towards credit is the relative amount of economic prosperity a consumer has enjoyed. The baby-boom generation became the dominant force in American consumption when they came of age because they were such a large share of the population and because they were willing to borrow. The dramatic

rise in the consumption-income ratio corresponds to the period in which the baby-boom generation started consuming (Cynamon and Fazzari 2008). Norton (1993) provides a decade by decade review of the 20th century. He notes that extended periods of prosperity and increasing use of credit are highly correlated. Additionally, Malmendier and Nagel (2009) confirm that individuals who have not experienced severe economic hardship, such as the Great Depression, are more accepting of borrowing on credit. Specifically their research on stock market participation and risk taking shows that older individuals can be influenced by economic episodes that they experienced decades before. Therefore, this casts doubt on the standard economic assumption that individuals have stable risk preferences that are not affected by economic experiences. It may also be possible that women experience economic events differently than men because of their disadvantaged position in society.

Chien and Devaney (2001) find that the more favorable the individual's attitude toward credit, the higher his credit card balance and installment debt. They created a specific index of attitudes towards credit from the 1998 Survey of Consumer Finance, and also considered a general attitude towards credit.

Consumer confidences affect attitudes toward credit as it indicates the individual's feelings of future income and economic circumstances, which is an important consideration when deciding to borrow (Park 1993; Gärling, Kirchler et al. 2009). Despite the anxiety and worry associated with debt, individuals who used installment debt are highly likely to engage in future installment debt when they have confidence in their own financial situation through income and job opportunities.

Demographic variables also affect debt and attitudes toward credit. Marital status and profession also contribute to debt (Chien and Devaney 2001). Age is also a dynamic force in borrowing. As the US age demographic changed, so did consumer debt. As the 20-34 age range group increased in population size, so did consumer borrowing (Park 1993). This age group is most likely to be engaging in debt for the first time with the need for several large purchases including education, a vehicle, and possibly a home. Park's research also indicates a link between income and credit usage. Middle-income households are more likely than high-income or low-income households to borrow to finance current consumption. High-income households most likely do not have a need to borrow to finance current consumptions. Low-income households may not qualify for loans because of their low or unstable incomes.

None of the aforementioned research differentiates between attitudes towards credit by sex. There appears to be a lack of research in this area. However, in contrast to the lack of research on gender differences in attitudes towards credit, there is extensive literature about risk aversion. Predominantly, studies of gender-based risk preferences focus on asset allocation decisions. These studies have not considered the effect of debt on the overall strength of the household balance sheet.

This literature shows that women are more risk averse than men in their asset portfolio holdings (Bajtelsmit and Bernasek 1996; Bernasek and Shwiff 2001; Jianakoplos and Bernasek 2007) when controlling for a variety of socioeconomic and demographic variables. Consequently, women tend to invest in less risky assets than men. These lower risk assets tend to provide a lower return than higher risk assets.

Consequently, women tend to have portfolios that perform with lower returns than men's portfolios.

Risk-aversion research is conducted both empirically and experimentally. Empirical studies of risk aversion use the Arrow-Pratt (Arrow and Pratt 1964) measure of relative risk aversion to measure differences in investment holdings of stocks, bonds, and other investments. Pratt (1964) developed a measure of relative risk aversion that takes into account the change in absolute risk aversion as wealth increases. If an individual is risk averse, she/he has a diminishing marginal utility of wealth. A risk loving individual prefers a gamble rather than a guaranteed amount and a risk neutral individual has no preference. Risk aversion is often used to explain consumption smoothing. Jianakoplos and Bernasek (2007) following the work of Friend and Blume (1975) measure relative risk aversion as follows: $\alpha_K = [E(r_m - r_f) / \sigma_m^2] 1 / C_K$, where α_K is the proportion of net worth in risky assets, $E(r_m - r_f)$ is the expected difference in market and risk free assets, σ_m^2 is the variance on the return of the market portfolio, and C_K is the Arrow-Pratt measure of relative risk aversion, where $C_K = [(-U''(W_K)) / (U(W_K))] W_K$ where W_K is the investor's wealth. A risk adverse household has a concave utility to wealth function.

A number of factors affect women's relative risk aversion. For example, the number of children in the household and all levels of education significantly decreases the proportion of risky assets held, while race and age increase risky assets ownership (Jianakoplos and Bernasek 2007). Contradictory research by Hallahan, Faff et al. shows that age has a negative relationship on risk aversion (2004). A spouse or partner who is

willing to take on more risk, also makes a woman more risk averse (Bernasek and Shwiff 2001). Therefore, control variables have an effect on risk aversion.

A review of the risk-and-gender literature by Eckel and Grossman (Eckel and Grossman 1999; 2008) highlights studies in sociology and psychology that support differing risk perceptions between women and men in the use of drugs and alcohol, smoking, criminal activity, and perceptions of catastrophic potential. Studies of financially risky alternatives or valuation of risky payoffs between women and men is not as conclusive in the sociology and psychology literature as it is in the economics literature.

Using an experimental approach, Schubert, Brown et al (1999) argue that attitudes may not differ by gender. In a controlled experiment they find no differences in risk propensity when subjects face contextual decisions. They conclude that the observed gender differences in portfolios are likely to be caused by differences in opportunities or constraints. For example, women may experience statistical discrimination based on the perceived notion that they are the safer sex. This stereotyping of risk aversion would result in women receiving more conservative advice from financial planners than men, resulting in a more conservative portfolio allocation. Similarly, Benjamin, Choi, et al. (2007) considered both a time and risk preference in fundamental economic decisions. Their results show that social identity affects preferences and that making gender salient has no statistically significant effect on women's and men's risk aversion. However, other experimentalists find that gender matters. A literature review by Eckel and Grossman (2008) indicates that most results indicate that women are more risk averse

than men in abstract experiments. Powell and Ansic (1997) argue methodological differences might cause results to differ in some experiments and that there is no consensus on methodological considerations or the validity of measuring gender differences.

Risky behavior is domain specific. Taking a risk in one domain is not correlated with taking risks in other areas of one's life (Gärling, Kirchler et al. 2009) provide psychological evidence that over half of the variance in economic risk preference is explained by genetic factors and that risk preferences are inheritable.

To summarize, we know that financial innovations and social changes increased the availability of debt over the last 20 years, which affected attitudes towards debt of consumers. We suspect from observational studies that men and women have different preferences with regard to risk in their asset decisions and quite possibly in their household balance sheet decisions. We might therefore suspect that financial and social changes have affected men and women differently, but as yet we do not know. This research fills this gap with a gender-sensitive analysis of attitudes towards credit by determining if gender differences exist in credit attitudes, all else equal. The next section outlines my research plan.

Testing for Gender Differences in Attitudes towards Credit

To determine if men and women differ in their attitudes towards credit, I evaluate credit attitudes using the answers of respondents to the following set of SCF questions:
Tell me whether you feel it is all right for someone like yourself to borrow money:

- a. To cover the expenses of a vacation
- b. To cover living expenses when income is cut
- c. To finance the purchase of a fur coat or jewelry
- d. To finance the purchase of a car
- e. To finance educational expenses

Respondents answered “yes” or “no” to each part. While this series of questions is the best available example of credit attitudes, the specific wording of part c is gender-biased. A male respondent may not think it is okay to borrow for a fur coat or jewelry, which tend to be associated with a woman’s preferences. Previous research, using this question, interprets the question as attitudes about borrowing to finance the purchase of a luxury. However, it is easily arguable that female and male luxuries are not the same. For example, male respondents might feel differently about borrowing to finance jewelry than they would feel about borrowing to finance a boat or motorcycle.

To more clearly determine if men and women view credit differently controlling for demographics, expectations, and financial circumstances, a probit regression to estimate the following regression for never married heads of household is used:

$$\text{Prob}(Y_i = 1) = \beta_0 + \beta_1 \text{Sex}_i + \beta_2 \text{Demographics}_i + \beta_3 \text{Expectations}_i + \beta_4 \text{Financial}_i + \varepsilon_i$$

Where $Y_i=0$ if the response is a “no” and $Y_i=1$ if the response is a “yes.”

Table 1 summarizes all independent and dependent variables used in the probit regression.

Table 1 also lists the expected sign of each variable. The variables controls for standard demographics including: age, education, race, and number of children. Expectations about the future include: future interest rate expectations, future economic expectations, how long respondent expects to live, and the health of respondent. As indicated in the literature review, expectations about the future are important indicators of a person's attitudes. A person who does not expect the economy to be strong may be more apprehensive about their income stream and consequently their ability to pay back loans. Also many people have expectations about their future based on their health.

Table 1. List of Variables Used

Variable	Definition	Coding	Category	Expected sign
cacar	Ok to borrow money for car	0-no, 1-yes	Dependent	-
caedu	Ok to borrow money for education	0-no, 1-yes	Dependent	-
caexp	Ok to borrow money for living expenses if income cut	0-no, 1-yes	Dependent	-
calux	Ok to borrow money for luxury	0-no, 1-yes	Dependent	-
cavac	Ok to borrow money for vacation	0-no, 1-yes	Dependent	-
sex	Sex of respondent	0-male, 1-female	Sex	Negative
singlefemale	Marital status - single female	Dummy	Demographics	Negative
Singlemale	Marital status - single male	Dummy	Demographics	Positive
mrtstatus12	Marital satus -married or living w/ partner	Excluded	Demographics	-
mrtstatus3	Marital status - separated	Dummy	Demographics	Negative
mrtstatus4	Marital status - divorced	Dummy	Demographics	Negative
mrtstatus5	Marital status - widowed	Dummy	Demographics	Negative
age	Age of head of household	Continuous	Demographics	Negative

Table 1 continued.

Variable	Definition	Coding	Category	Expected sign
age2	Age squared	Continuous	Demographics	Negative
educ	Total number of years of education	Continuous	Demographics	Negative
kids	Total number of children in household	Continuous	Demographics	Positive
race 1	White non-Hispanic	Excluded	Demographics	-
race 2	Black / African American	Dummy	Demographics	Positive
race 3	Hispanic	Dummy	Demographics	Positive
race 4	Asian/Other	Dummy	Demographics	Negative
agelive	How long respondent expects to live	Continuous	Expectations	Positive
expeconb	Economic expectations better than current state	Dummy	Expectations	Positive
expinrh	Interest rate expectations higher than current rates	Dummy	Expectations	Negative
health4	Current health status of respondent - best	Dummy	Expectations	Positive
acrtmt	Access to retirement	0-no, 1-yes	Financial	Positive
caappl	Applied for credit in last 5 years	0-no, 1-yes	Financial	Positive
catrndw	Been turned down for credit in last 5 yrs	Dummy	Financial	Negative
lnwageinc	Natural log of wage income	Continuous	Financial	Positive
unemployed	Any time during last 12 months, were you unemployed and looking for work?	0-no, 1-yes	Financial	Negative

Financial variables include: income, whether the respondent was turned down for credit, whether the respondent has access to a pension, and any recent unemployment by the respondent. It is possible that attitudes towards credit could affect one's savings and investments and consequently total income. Therefore, only wage income is used in the regression equation to limit issues of endogeneity.

We are interested in the marginal effects of being female (β_1). A negative, statistically significant coefficient indicates that never married women have more

conservative attitudes towards credit than never married men, controlling for demographics, expectations, and finances. It is important from a gender perspective to evaluate never married individuals. The attitudes of married, cohabitating, divorced or widowed individuals may be influenced by individuals they live or lived with at some point in time. While we cannot guarantee that the never married subsample never cohabitated, it is the closed sample we can get where the respondent may not have been previously influenced. For comparison, a second regression utilizes information on all households including the type of households as a dummy variable to include never married women, never married men, cohabitating couples/married couples, divorced, and widowed households.

A final step for each of the above regressions would be to include interaction terms for select variables and being female to better understand the effects of gender on the variables: $\text{Prob}(Y_i = 1) = \beta_0 + \beta_1 \text{SEX}_i + \beta_2 \text{Demographics}_i + \beta_3 \text{Expectations}_i + \beta_4 \text{Financial}_i + \beta_5 \text{Demographics}_{it} * \text{Female} + \beta_6 \text{Expectations}_{it} * \text{Female} + \beta_7 \text{Financial}_{it} * \text{Female} + \varepsilon_i$ where X_{it} is centered on the mean of each variable (Jaccard and Turrissi 2003).

Tests of Mean Differences

Results for mean differences in the proportion of respondents being accepting of the particular attitude toward credit for each of the above questions are reported in Table 2. Never married men and women only have statistically significant differences in attitudes about borrowing for jewelry and furs, which is the gender-biased question.

However, attitudes of never married women towards credit vary greatly from attitudes of married couples. For example, never married households headed by females are more accepting of borrowing to meet expenses when income is cut than married couples. In contrast, never married men only differ from married couples on attitudes towards vehicle loans.

Table 2. Test of Mean Differences

Credit attitudes & payment history	Married couples vs. single men	Married couples vs. single women	Single men vs. single women
Respondent believes good idea to buy on installment plan	0.0278	-0.0411	-0.0689
Ok to borrow money for vacation	-0.0053	-0.0008	0.0045
Ok to borrow money for living expenses if income cut	-0.0365	-0.0546 ***	-0.0181
Ok to borrow money for luxury jewelry or fur	-0.0129	0.0084	0.0213 *
Ok to borrow money for car	0.0375 **	0.0426 ***	0.0051
Ok to borrow money for education	-0.0053	-0.0008	0.0045

* $p < .10$ ** $p < .05$ *** $p < .001$

Descriptive Statistics

Tables 3-6 provide descriptive statistics for the variables used in the credit attitude regression analysis. These descriptive statistics are important for establishing relationships between variables. Table 3 reports the percentage of positive responses to the attitudes towards credit questions. The majority of all respondents believe it is acceptable to borrow money for a vehicle (78.1% positive response rate) and education

(81.8% positive response rate). For this research it is important to consider the views of never married men and never married women separately. These populations are the least likely to be influenced by cohabitation. Never married men and never married women show even more favorable credit attitudes for borrowing for a vehicle and education. Never married women felt very strongly about borrowing to finance an education with 88.5% responding positively. This response corresponds to women's lower educational attainment and need to obtain a higher education in order to compete for higher salaries usually earned by men. Never married men and never married women responded with higher acceptance of borrowing to pay bills when income is cut, as compared to all respondents. Never married women and never married men do not have the safety net of another spouse's income to rely upon in the event of income reduction. Never married women again reported the highest positive response rate of 66.4% for this category. This is again in response to women's disadvantaged position in the economy. Few respondents overall in the never married male, never married female or the total population categories favored borrowing money to finance a vacation or jewelry or a fur. However, never married men reported more positive responses as a percentage than did never married women. Respondents were twice as accepting of borrowing to finance a vacation as they were borrowing to finance jewelry or fur.

Table 4 lists the positive responses to attitudes towards credit by age category. In general, as the age of a never married respondent increases, they become less accepting of borrowing to finance vehicles, education, economic hardships, jewelry/furs, or a vacation. This analysis is consistent with life models of consumption. Generally,

Table 3. Respondent's Response to Credit Attitude Questions

% of positive responses	<u>Never married respondents</u>		Total population
	Female	Male	
Ok to borrow money for car	74.2%	77.7%	78.1%
Ok to borrow money for education	88.5%	84.8%	81.8%
Ok to borrow money for living expenses if income cut	66.4%	59.4%	49.7%
Ok to borrow money for luxury	6.5%	8.1%	5.0%
Ok to borrow money for vacation	17.8%	15.7%	13.1%

younger consumers have to borrow early in their life cycle, particularly for large purchases such as a home, vehicle, or education. As they become more settled and enjoy growing income they have less need to borrow. As individuals approach retirement, they generally have less need to borrow, as often their house and vehicles loans are paid in full.

Young never married women are more than twice as accepting of borrowing to finance expenditures when income is cut than never married women over 51. Younger women are also much more willing to borrow for jewelry, furs, and vacations as opposed to older women. The never married male age categories do not show much variation for jewelry, furs, and vacations. With regard to the literature on consumer's behavior who experienced economic hardship, it may be that never married women are more sensitive to these past experiences, as compared to never married men.

Table 4. Respondent's Response to Credit Attitude Questions by Age Category

% of positive responses	<u>Never married females</u>			<u>Never married males</u>		
	20-35	36-50	51+	20-35	36-50	51+
Ok to borrow money for car	78.3%	69.1%	69.0%	84.0%	80.5%	60.0%
Ok to borrow money for education	95.7%	82.9%	73.8%	91.5%	82.9%	73.6%
Ok to borrow money for living expenses if income cut	75.8%	64.7%	38.1%	67.0%	56.6%	48.0%
Ok to borrow money for luxury	8.0%	4.4%	4.8%	8.5%	7.6%	8.0%
Ok to borrow money for vacation	19.0%	19.1%	11.9%	16.0%	15.1%	16.0%

Table 5 provides more information about the expectations and experiences of the respondents. Never married women believe that the economy is going to be worse in the future at a rate of 30.6% of the population. In all categories, almost a third of respondents believe the economy is going to be in worse shape. Over half of all respondents have applied for credit in the last five years. Never married women have the highest rate of being turned down for credit, providing support that they are credit constrained. Never married men and women are far more likely to be unemployed and looking for work, as compared to 8.4% of the total respondents.

Table 5. Economic Expectations

	<u>Never married respondents</u>		Total population
	Female	Male	
Economic expectations about future are worse	30.6%	26.5%	30.5%
Been turned down for credit in last 5 yrs	75.4%	83.4%	84.2%
Applied for credit in last 5 years	56.5%	55.0%	66.5%
Unemployed and looking for work in last 12 months	21.0%	20.1%	8.4%

Table 6 provides means and standard deviations for variables used in the regression analysis for never married females, never married males and the total population. Never married women have considerably more children living with them than never married men, which is a significant financial burden for never married women. Never married women have more children living with them than never married men, at a statistically significant rate. Never married men report better overall health than both never married women and the total respondents, while never married women have less access to health insurance than both never married men and the total respondents in general. Finally, but not surprisingly, never married women report less wage income than never married men.

Table 6. Mean & Standard Deviation for Explanatory Variables by Category

	<u>Never married respondents</u>					
	<u>Female</u>		<u>Male</u>		<u>All respondents</u>	
	Mean	Std. Dev.	Mean	Std Dev.	Mean	Std Dev.
<u>Demographics</u>						
Age of head of household	37.44	14.83	39.26	14.55	51.81	16.07
Total number of years of education that have been completed by head of household	13.62	2.52	13.96	2.60	14.00	2.78
Total number of children in household	0.75	1.06	0.11	0.52	0.86	1.19
Race of respondent - White	0.52	0.50	0.68	0.46	0.80	0.40
Race of respondent - Black/African American	0.36	0.48	0.16	0.37	0.09	0.29
Race of respondent - Hispanic	0.08	0.28	0.08	0.28	0.07	0.26
Race of respondent - Asian/Other	0.04	0.19	0.07	0.25	0.04	0.20

Table 6 continued.

	<u>Never married respondents</u>				<u>All respondents</u>	
	<u>Female</u>		<u>Male</u>			
	Mean	Std. Dev.	Mean	Std Dev.	Mean	Std Dev.
<u>Expectations about the future</u>						
How long respondent expects to live	84.47	11.62	80.50	14.09	83.49	11.50
Mother still living	0.73	0.44	0.78	0.42	0.54	0.50
Father still living	0.65	0.48	0.63	0.48	0.40	0.49
Economic expectations - Worse	0.31	0.46	0.26	0.44	0.31	0.46
Economic expectations - Better	0.36	0.48	0.32	0.46	0.29	0.45
Interest rate expectations - Higher	0.74	0.44	0.68	0.47	0.63	0.48
Current health status of respondent - Good	0.49	0.50	0.48	0.50	0.47	0.50
Current health status of respondent - Best	0.26	0.44	0.34	0.47	0.33	0.47
<u>Financial</u>						
Access to retirement	0.32	0.47	0.34	0.47	0.35	0.48
Applied for credit in last 5 years	0.56	0.50	0.55	0.50	0.66	0.47
Been turned down for credit in last 5 yrs	0.25	0.43	0.17	0.37	0.16	0.36
Access to health insurance	0.32	0.47	0.41	0.49	0.45	0.50
Natural Log of Wage income	9.96	1.04	10.32	1.14	11.08	1.40
Unemployed and looking for work in last 12 months	0.21	0.41	0.20	0.40	0.08	0.28
N	1240		1190		22090	

Note: All estimates are unweighted.

Regression Results

The marginal effects of the probit analysis are reported in Table 7 for the never married respondents and in Table 8 for the total of all respondents.

Table 7. Marginal Effects Regression Results of Probit Analysis of Credit Attitudes - Never Married Respondents

Independent Variable	Ok to borrow money for car	Ok to borrow money for education	Ok to borrow money for living expenses if income cut	Ok to borrow money for jewelry/fur	Ok to borrow money for vacation
<u>Sex</u>					
Respondent is female	0.0003	0.0108	0.0052	-0.0357 *	0.0258
	0.0186	0.0144	0.0237	0.0135	0.0194
<u>Demographics</u>					
Age of head of household	-0.0057	-0.0237 *	-0.0239 *	-0.0077 **	0.0141 *
	0.0055	0.0042	0.0065	0.0037	0.0051
Age squared	0.0001	0.0003 *	0.0002 **	0.0001 ***	-0.0002 **
	0.0007	0.0001	0.0001	0.0000	0.0001
Total number of years of education	0.0167 *	0.0086 *	-0.0019	0.0053	-0.0128 *
	0.0042	0.0028	0.0054	0.0034	0.0043
Total number of children in household	-0.0076	0.0338 *	0.0380 **	0.0059	-0.0390 *
	0.0105	0.0109	0.0153	0.0101	0.0140
Race/ethnicity of respondent - Black/African American	-0.0865 *	0.1361 *	0.0908 *	0.0590 *	0.1030 *
	0.0212	0.0208	0.0281	0.0152	0.0225
Race - Hispanic	0.0011	-0.0016	0.0925 **	-0.0251	-0.1065 *
	0.0323	0.0221	0.0432	0.0292	0.0379
Race - Asian/Other	-0.1075 *	-0.0805 *	-0.2056 *	-0.0390	-0.1117 **
	0.0376	0.0270	0.0509	0.0301	0.0046
<u>Expectations about the future</u>					
How long respondent expects to live	0.0019 *	-0.0002	-0.0003	-0.0011 **	0.0064
	0.0007	0.0006	0.0009	0.0005	0.0007

Table 7 continued.

Independent Variable	Ok to borrow money for car		Ok to borrow money for education		Ok to borrow money for living ex- penses if income cut		Ok to borrow money for jewelry/ fur		Ok to borrow money for vacation
Economic expectations - better	-0.0316 ***		-0.0471 *		-0.0931 *		0.0099		0.0369 ***
	0.0186		0.0147		0.0228		0.0120		0.0191
Interest rate expectations - higher	0.0056		0.0171		-0.0087		-0.0026		-0.0382 ***
	0.0197		0.0155		0.0241		0.0138		0.0206
Current health status of respondent - best	-0.0551 *		-0.0174		-0.0665 *		0.0104		0.0462 **
	0.0190		0.0148		0.0237		0.0127		0.0184
<u>Financial</u>									
Access to retirement	0.0035 ***		0.0539 *		-0.0482 **		0.0022		0.0020
	0.0194		0.0155		0.0246		0.0148		0.0200
Applied for credit in last 5 years	0.0779 *		0.0496 *		0.0540 **		0.0302 ***		0.0796 *
	0.0229		0.0160		0.0267		0.0163		0.0219
Been turned down for credit in last 5 yrs	0.0102		0.0343 ***		0.0103		0.0135		-0.1225 *
	0.0240		0.0188		0.0277		0.0150		0.0230
Natural log of wage income	-0.0128		-0.0066		0.0379 *		0.0369 *		0.0050
	0.0107		0.0081		0.0142		0.0094		0.0118
Unemployed & looking for work in last 12 months	-0.0021		-0.0791 *		0.0630 **		0.0552 *		0.1049 *
	0.0227		0.0190		0.0287		0.0176		0.0238
Pseudo R ²	0.07032		0.17396		0.09282		0.06130		0.06840

Note: Reported std. errors are linearized. Pseudo R² is averaged over five imputations .

$p < .10$ *** $p < .05$ ** $p < .01$ *

Table 8. Marginal Effects Regression Results of Probit Analysis of Credit Attitudes - All Respondents

Independent Variable	Ok to borrow money for car	Ok to borrow money for education	Ok to borrow money for living expenses if income cut	Ok to borrow money for jewelry/fur	Ok to borrow money for vacation
Marital Status - Single female	0.0135	0.0345 **	0.0727 *	0.0136 ***	0.0193
	0.0135	0.0145	0.0189	0.0080	0.0132
Marital Status - Single male	0.0158	-0.0126	0.0503 *	0.0390 *	0.0167
	0.0149	0.0129	0.0195	0.0079	0.0140
Marital Status -Widowed	-0.0337	0.0743 *	-0.0106	-0.0127	-0.0888 *
	0.0213	0.0204	0.0318	0.0154	0.0269
Marital Status - Divorced	-0.0297 *	0.0050	0.0578 *	0.0032	-0.0037
	0.0098	0.0088	0.0136	0.0064	0.0101
Marital Status - Separated	-0.0157	0.0659 *	0.0445	-0.0031	-0.0259
	0.0221	0.0218	0.0306	0.0156	0.0225
Age of head of household	0.0025	-0.0078 *	-0.0171 *	0.0025 **	0.0018
	0.0016	0.0015	0.0023	0.0012	0.0016
Age squared	0.0000 ***	0.0001 *	0.0001 *	0.0000 **	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000
Total number of years of education that have been completed by head of household	0.0036 **	0.0043 *	-0.0059 *	0.0006	0.0012
	0.0014	0.0012	0.0019	0.0010	0.0015
Total number of children in household	-0.0035	0.0113 *	0.0136 *	-0.0067 *	0.0005
	0.0029	0.0029	0.0041	0.0019	0.0030
Race/ethnicity of respondent - Black/African American	-0.0465 *	0.0383 *	0.0406 *	0.0257 *	0.0499 *
	0.0099	0.0104	0.0148	0.0062	0.0101
Race - Hispanic	-0.1149 *	0.0001	0.0378 **	0.0030	0.0165
	0.0106	0.0105	0.0155	0.0075	0.0118
Race - Asian/Other	-0.0309 ***	-0.0485 *	-0.0586 *	0.0054	-0.0181
	0.0164	0.0135	0.0213	0.0095	0.0169
How long respondent expects to live	0.0001	0.0000	0.0002	0.0000	0.0006 **
	0.0027	0.0003	0.0004	0.0002	0.0003
Economic expectations - Better	-0.0023	-0.0022	0.0015	0.0207 *	0.0227 *
	0.0071	0.0065	0.0097	0.0041	0.0070
Interest rate expectations - Higher	-0.0151 **	-0.0043	0.0135	-0.0242 *	-0.0098

Table 8 continued.

Independent variable	Ok to borrow money for car	Ok to borrow money for education	Ok to borrow money for living expenses if income cut	Ok to borrow money for jewelry/fur	Ok to borrow money for vacation
Current health status of respondent - Best	0.0070 -0.0445 * 0.0073	0.0063 0.0073 0.0069	0.0094 -0.0377 * 0.0101	0.0042 0.0041 0.0046	0.0071 - 0.0032 0.0073
Access to retirement	0.0266 * 0.0074	0.0324 * 0.0068	0.0058 0.0100 *	-0.0059 0.0045 *	0.0240 * 0.0073
Applied for credit in last 5 years	0.1354 * 0.0078	0.0714 * 0.0073	0.0203 * 0.0115 *	0.0248 * 0.0060 *	0.0442 * 0.0086
Been turned down for credit in last 5 yrs	0.0034 0.0091	0.0302 * 0.0084	0.0706 * 0.0116	0.0203 * 0.0051	- 0.0088 0.0085 *
Natural log of wage income	0.0004 0.0038	0.0099 * 0.0034	0.0040 0.0053	0.0138 * 0.0027	0.0086 * 0.0041
Any time during last 12 months, were you unemployed and looking for work?	-0.0259 *** 0.0102	-0.0091 0.0095	0.0192 0.0162	0.0127 * 0.0067	0.0473 * 0.0101
Pseudo R2	0.07040	0.06436	0.04780	0.03636	0.01574

Note: Reported std. errors are linearized. Pseudo R2 is averaged over five imputations.

p <.10 ***, p<.05 **, p <.01 *

Section 1- Discussion of Variables Not Related to Gender

As expected, age has a negative effect on attitudes towards credit in most categories for respondents who have never been married, meaning that as the respondents

get older they are less accepting of borrowing on credit. Each additional birthday reduces the probability of being accepting of borrowing by 2%. However, the results are mixed for the total population of respondents. Age has a negative effect on attitudes towards credit for borrowing for education and when income is cut. But contradicting the literature, age has a positive, though small, effect on borrowing to finance a vehicle and for jewelry/fur. Higher levels of education are associated with increasingly accepting attitudes of borrowing except for borrowing for living expenses when income is cut by the respondents who were never married and for borrowing for a vacation by all respondents. However, these effects are quite small. Overall, this result is expected as higher education is associated with higher income and an increased ability to pay back the borrowing.

As expected, children in the household affect attitudes towards credit of the respondents. On one hand, having kids makes all respondents more accepting of borrowing for education and borrowing when income is cut. Each child increases the chance for a positive response for borrowing to finance education by 3% and by almost 4% when income is cut. On the other hand, having children makes all respondents more conservative when it comes to borrowing for vacations. When never married women are broken into categories of those with children and those without children, women with children are less accepting of borrowing for vacations and for jewelry or furs.

An individual may relate to a reference group based on their ethnic background. Race, the final demographic category, indicates that African American respondents have positive, statistically significant attitudes of borrowing for credit for all categories except

for a vehicle. Asians/others have very conservative attitudes toward borrowing for most categories.

Expectations about the future play an important part in one's attitudes towards credit. The age to which the respondent expects to live has small effects on attitudes towards credit. Financial expectations have stronger effects. For example, positive future economic expectations, as compared to the current economic climate at the time of the survey, increase the possibility of a positive response to borrowing for luxuries, such as jewelry or furs and vacation by 2% each, for all respondents. However, positive economic expectations reduce never married households willingness to accept borrowing. Expectations of higher future interest rates reduce willingness to borrow for vehicles and jewelry/furs of all respondents.

Applying for credit in the last five years is a positive indication of the willingness of a respondent to borrow for all categories. A period of unemployment in the last 12 months affects willingness to borrow by the respondents in surprising ways. For both never married and all respondents, being unemployed negatively affects the willingness of the respondents to borrow for education or a vehicle and positively affects acceptance of borrowing if income is cut, for jewelry/furs and for vacations. This could be the result of an entitlement mentality or an unwillingness to lower one's standard of living, as discussed in the literature review.

Section 2- Discussion of Gender and Gender Interaction Terms

Of particular interest are the marginal effects of being female. Never married women's and never married men's attitudes on borrowing for a vehicle, a vacation, education or when income is cut do not vary, all else equal. These results are important because, all else equal, they show no differences in attitudes which in part affect the shape of the indifference curve. Therefore, female and male never married respondents vary only with respect to borrowing for jewelry or furs, with women exhibiting more conservative attitudes towards debt for this purchase only.

Among all respondents, never married women are more likely to say it is okay to borrow than those respondents in the omitted group (married and/or living with a partner). Never married women have positive statistically significant coefficients for three of the five dependent variables. Specifically, being a never married female increased the likelihood of a positive response by 3.5% for borrowing for education, over 7% for borrowing when income is cut, and by 1.4% for borrowing for jewelry or fur. This indicates that never married women do not have more conservative credit attitudes than comparable respondents who are married or cohabitating. In comparison, being a never married man increases the likelihood of a positive response by over 5% for borrowing when income is cut and by almost 4% for jewelry or fur. Therefore, the attitudes towards borrowing of never married women and never married men vary as compared to married respondents, but not to each other, all else equal.

These results are important because they indicate that never married women are not more conservative than married or cohabitating households. Married or cohabitating household are less vulnerable to economic shocks due to the possibility of two incomes and possibly access to better employment benefits, such as health insurance and retirement plans. With two incomes, there is the possibility of more discretionary income which would reduce the need to borrow for some purchases. Therefore, it may not be necessary for married/cohabitating households to borrow to purchase some assets that never married households would have to borrow for in order to acquire. In addition, the reference group of married households may be quite different than for never married households, which could affect the attitudes toward borrowing of those groups.

However, despite the vulnerability of never married women, they are just as accepting of borrowing as never married men. There are several plausible explanations for this. First, similar attitudes towards credit could be the result of a reference group of never married individuals. If never married women see other never married women and men borrowing to make purchases, then they, being associated with that reference group, could assimilate their credit philosophies. Finally, the view of society on borrowing has changed over time, as described earlier. The same credit attitudes between never married women and never married men may be a sign that credit attitudes have converged, despite past research that indicates women's conservative preferences. The convergence could be the result of women becoming more financially independent over the last 20 years, as their relative status in society has improved. Women are increasingly getting higher levels of education and seeking careers, not just jobs, participating in the

labor market more frequently, and experiencing less labor market discrimination. With the asset and wage gaps narrowing, women are less dependent on marriage, as the average age to marry has increased. Additionally, the traditional family structure is changing. The divorce rate has risen, fertility has declined, and single parent households are the norm.

Finally, the variable for being female was interacted with select variables. Specifically, sex was interacted with age, education, number of children, life expectancy, wage income, and unemployment. These variables were selected for interaction because of their known gender dimensions. For example, women have a longer life expectancy, and historically, women have received fewer years of education (Blau, Ferber et al. 2002), which often serves as a proxy for financial education. The number of children is selected due to the fact that women tend to take on more caring responsibilities than men. Wage income is included due to the fact that historically there has been a wage gap between women and men. Finally, unemployment is selected to determine if an adverse life event affects attitudes toward credit differently for women.

The results of an F-test of joint significance of the interacted variables are, at a 5% level of significance, are collectively different from zero. However, the results of an F-test are reported of the comparison of the regression with interaction terms and without interactions. This F-test indicates that the interaction terms do not provide a statistically significant improvement in explanatory power between the two equations.

Conclusion

This research is a first step in understanding difference in attitudes towards credit by gender. Given that women are more risk averse and more sensitive to economic shocks, but take on more caring responsibilities, the attitudes toward credit of never married women were not easily predicted. The main findings are that when I compare never married women to all respondents, never married women are more accepting of most kinds of debt. This is consistent with conceptions of women as spendthrifts but not consistent with the conservative attitudes towards investment by women. However, when I look more specifically at gender by limiting the analysis to just never married women and never married men, there are no detectible gender differences in attitudes towards the use of credit.

My research is an important first step in the study of gender differences in attitudes towards credit, but much research remains to add to this research in order to establish effective educational programs and credit initiatives. More research is necessary to understand specifically what factors, including economic, institutional, social, and psychological, affect attitudes of consumers towards credit of all consumers. Research identified in the literature review concludes that society definitely influences credit attitudes of consumers.

However, this research has not identified if society affects women and men differently or if or how changes in attitudes towards credit have changed over time for women and men. It appears the married or cohabitating individuals feel differently about credit than never married individuals. Therefore, research needs to identify if and how

the reference group or other institutional or social factors affect individuals and married/cohabitating households differently. For example, we do not know how the social cues from the reference group are assimilated by the individuals. Research needs to identify if men and women experience the same level of connectedness to the reference group and any gender differences in how social cues are accepted from the reference group. Given that society has changed how they use credit over the past 20 years, it is also be important to study how specific societal changes and events affected women and men attitudes towards credit over this time.

CHAPTER 3

GENDER DIFFERENCES IN TERMS OF TRADE

The second objective of this dissertation is to determine the extent to which terms of credit on similar types of debt differ between men and women, all else equal. Terms of credit include the interest rate and transaction costs involved in securing the loan.

A rational consumer makes a direct trade off between consuming today and consuming in the future. If the consumer chooses to consume today but doesn't have enough money, the consumer borrows the principal and must pay it back along with interest. Therefore, interest is the cost of borrowing to consume today. The higher the interest rate, the more the borrower has to forgo consumption in the future in order to be able to pay off his debt. This larger sacrifice of future income must be compared by the consumer to the utility of current consumption.

The interest rate charged on a loan varies depending on a variety of factors. These factors include: the type of loan (installment or revolving), the length of loan, the amount of the loan, if collateral is securing the loan, and the credit worthiness of the borrower. Loan types vary by the purpose of the loan. For example, for mortgages, there are both fixed rate and variable rate loans. The interest rate on fixed rate loans generally carry a higher interest rate due to the long term guarantee of the fixed payment. The interest rate on variable rate loans varies depending on some economic index. Variable rates are generally lower at the time of loan origination, but contain no long term guarantees,

therefore increasing the risk to the household if interest rates would increase. Loans that have no tangible asset as collateral generally carry higher interest rates. The longer the length of the loan, the higher the interest rate is. The best interest rates generally go to the most credit worthy of customers. Sophisticated credit scoring systems determine how credit worthy a customer is. This credit score affects the amount of funds available to the borrower and the interest rate at which the funds are offered.

Getting a loan is not a simple process. Transaction costs include time taken in searching for the best terms for the loan and the time it takes to fill out paperwork during the application process. There are many different types of places to get loans. For example, when applying for a vehicle loan, the borrower can apply for the loan at the place of purchase, at a bank, or at a credit union. Mortgages can be secured at banks, credit unions, or mortgages companies. Credit cards are available from over 6,000 different companies (Gross and Souleles 2001). Therefore, a consumer must narrow down where to apply for the loan and then might apply to several different places.

Legislation, including the Equal Credit Opportunity Act and Fair Housing Act, prohibits discriminatory lending practices. Lenders are not allowed to charge different interest rates simply based on the sex of the applicant. Therefore, never married women and never married men should not be paying different interest rates based on their sex, all else equal. However, one determinant of the interest rate is the amount of time an individual spends shopping for the loan. All else equal never married women and never married men may not have the same amount of time available to shop for a loan due to higher opportunity cost of time, as discussed in Chapter 1.

Additionally, the interest rate may differ by sex because the process of getting a loan might vary by gender. Women and men may be getting loan information from different sources and evaluating the loan specifications from different points of view. For example, it may be that women and men place different priority on the importance of some loan features. Some loan feature result in minimal short term costs, but overall greater costs over the term of the loan. Some loan features create higher upfront costs, but lower overall total costs. Therefore, the evaluation process might differ by gender, which could results in women and men paying different rates of interest.

The main findings are that when I compare never married women to all respondents, never married women pay higher interest rates on credit card debt only. This could be due to the fact that never married women have less credit history, therefore requiring a higher rate or they have less financial savvy in shopping for the best rate. However, when I look specifically at gender by limiting the sample to never married women and never married men, there are no detectable gender differences in interest rates. When evaluating the time spent shopping for a loan, never married females spend more time than the population as a whole, but less time than never married men.

This chapter is organized as follows: A review of the current literature on borrowing practices and current transaction cost practices follows, the research methodology is then proposed, followed by descriptive statistics, and test of mean differences. The chapter concludes with analysis of regression results.

Literature Review

This literature review is divided into two parts. The first part discusses the recent history of lending practices by loan type. The second part discusses the relevant literature of transaction costs and search behavior.

Innovation and technology have changed the speed of loan approval and access to loans, making the loan market more competitive, which resulted in the lowering of loan origination fees (Bucks and Pence 2008). The Truth-in-Lending Act of 1968 requires all credit organizations to disclose interest rates, annual fees, grace periods, etc. These disclosures ensure that borrowers have all information available to them. Prior to this legislation, it was more difficult for borrowers to compare loan offers.

Mortgage Lending Practices

A home purchase is generally one of the largest purchases a consumer ever makes and most of the time requires borrowing for some portion of the purchase. The interest rate that the borrower secures on the loan determines how much the borrower has to pay back. Small changes in interest rates can result in thousands of dollars in additional interest payments or savings.

Prior to the Great Depression, mortgages were renegotiated every year. These mortgages were characterized by high interest rates, high down payments, and short maturities (Green and Wachter 2007). The typical loan-to-value ratio was generally 50% or more. In addition, these mortgages were not amortized. A balloon payment was required at the end of the mortgage, which was generally less than five years (Green and Wachter 2007). As a result of the Great Depression, the federal government created the

Home Owner's Loan Corporation, the Federal Housing Administration, and the Federal National Mortgage Association. The Home Owner's Loan Corporation introduced fixed rate mortgages with amortization, so that more people could afford to purchase a home and pay for it over a longer period of time. These products remained popular until the 1980s, despite their interest rate risk, due to favorable economic circumstances. When home prices fell in the 1980s default rates grew. Even in the 1980s interest rates were quite high by today's standards. Congress attempted to fix the problem by allowing Savings and Loans to originate adjustable rate mortgages.

Traditional mortgages were for a fixed period of time, generally 15, 20, or 30 years, and had a fixed interest rate. Adjustable rate mortgages (ARM) gained popularity during the recent housing boom as potential buyers who did not qualify for a traditional mortgage qualified for an ARM due to recent financial innovations, such as initial fixed rate periods, interest only periods, and negative amortization. Lending practices changed when sophisticated modeling of credit risk was performed by Fannie Mae, Freddie Mac, Wells Fargo, and Citibank, among others (Green and Wachter 2007). These models were very good at predicting good credit risks. Potential borrowers who were good credit risks originated loans in the prime markets. Potential borrowers who were poor credit risks now had an avenue available to them in the sub-prime market. The sub-prime market used risk-based pricing to get less qualified borrowers into homes. The sub-prime market also created new features which were very attractive to sub-prime borrowers in a rising housing market. For example, introductory teaser rates were offered for the first several years of the mortgage, before the loan reset to a higher fixed rate. Even if the borrower couldn't afford the higher fixed rate payment, they could easily refinance once their

teaser rate expired since housing prices were rising so fast. Pennington-Cross and Ho (2010) find that a one standard deviation in the size of an economic shock results in a 50% increase in the probability of prepayment and a 25% increase in the probability of default. Therefore, rising interest rates can have huge effects on the hybrid mortgages. These risky mortgage products are now blamed for much of the mortgage crisis starting in 2007. Unfortunately, many sub-prime borrowers do not fully understand the terms of their loans. Therefore, they do not understand the extent to which their payments can change when interest rates reset (Bucks and Pence 2008). Beshears and Bergstresser (2009) argue that these hybrid mortgages caused confusion among borrowers who did not truly understand the terms of the loans they were taking out.

Interest rates for mortgages reached historical lows in recent years. This cheap money boosted housing prices and encouraged the refinancing of existing mortgages. Low interest rates and easy access to funds increased the competition in the home buying market and played a significant role in the house price appreciation in the United States (and around the world) during 2002-2006 (Barnes and Young 2003; Mayer and Hubbard 2008). Despite the low rates, Mayer and Hubbard (2008) argue that mortgage interest rates are higher than they should be due to credit markets not functioning properly. The spread between the 30-year fixed mortgage and the 10-year Treasury bond has increased, making mortgages more costly than they necessarily should be today.

Home ownership rose to all time highs in the 2000s as many renters could not pass up the low interest rates offered on mortgages. Home ownership was also viewed as a great investment, as home prices were rising quickly. As discussed in Chapter 3, home ownership was associated with a reference group and societal attitudes toward home

ownership changed, increasing the share of Americans who owned the home in which they lived. Using Survey of Consumer Finance data, Beshears and Bergstresser (2009) estimate that home ownership increased from 63.9% in 1992 to 69.0% in 2004.

Home equity lines of credit offer a form of revolving debt with favorable tax advantages. The interest on these lines of credit is tax deductible. Traditionally, the interest rate on these loans has been about 1.5% above the prime rate (Park 1993). However, during the housing boom, some rates were secured at prime.

The mortgage market has changed dramatically since the Great Depression. Prior to the recent recession, mortgages were available to more members of society than ever before. The terms of these mortgages vary widely based on whether the loan originated in the prime or sub-prime markets.

Vehicle Lending Practices

Installment debt became available to households in the 1920s as households started to purchase consumer durables and vehicles. Initially, installment debt was short term and required large down payments (Olney 1999). Early installment debt was characterized by high interest rates, up to 3% a month (Nugent 1934).

Vehicle after-tax interest rates were relatively high during the 1990s, despite the phase out of the consumer loan tax deduction and low inflation (Park 1993). Vehicle loans have also been fiercely competitive in recent years, with 0% interest rates often offered to the most qualified customers by the dealerships. New vehicle ownership increased due to the low rates on new vehicle purchases. Used vehicles are typically financed at higher rates than new purchases.

Despite anti-discrimination legislation, in recent years there have been claims of racial discrimination in vehicle lending. Using Survey of Consumer Finance data, Charles, Hurst et al. (2006) find no evidence of discrimination from banks and credit unions, but did find evidence of differential treatment for loans originating at vehicle financing companies. The discrimination of the vehicle finance companies results in Blacks paying \$5 to \$7 more per month than their White counterparts on the same type of loan.

Besides the borrower's credit score, the length of the loan for a vehicle seems to be the most important factor.

Credit Card Lending Practices

Generally, credit card issuers and users fall into two categories. Credit card issuers are either transaction based or fee based. Credit card users are either convenience users or revolving users.

The first type of issuers is transaction based, such as American Express and Diners Club. They want to maximize the number of cardholders who use their cards for large purchases. They earn a fee for each transaction and that is how they make their money. This business model is in contrast to debt-based issuers who make most of their money on customers who carry a balance from month to month. Debt-based issuers try to maximize the number of customers who pay late which generates late payment fees and those who pay interest on their outstanding balance.

Credit card companies make money several different ways. First, the business which accepts credit cards as payment pays a fee to the credit card company. Second, the

credit card company makes money through late payment fees, overcharge fees, and interest on the outstanding balance.

Marketing of credit cards became very aggressive over time with direct mailing campaigns, telemarketing, television, and internet advertising. Credit card companies also aggressively offered 0% financing on transferred balances for a certain number of months before higher interest rates set in, as a way to attract new customers. Financial and technological innovations have increased credit score availability and the ease of prescreening of applicants (Calem, Gordy et al. 2006).

Credit card users fall into two categories. Convenience users use credit cards instead of cash and pay their bill in full at the end of the month. Revolving users pay only a portion of their bill or their minimum monthly payment at the end of the month. Their account accrues interest on the unpaid balance. The probability of late payment and overdraft increases once a consumer starts to carry a balance on their card (Mann 2007). Card issuers often raise fees and interest rates once they have identified a troubled borrower (Mann 2007). Households with high balances are more likely to be rejected or have offers at even higher fees when they try to transfer balances (Calem, Gordy et al. 2006).

Historically, credit cards have charged high interest rates despite the open market and large entry of firms during the 1980s (Kerr and Dunn 2008; Zywicki 2010). Credit card rates stayed stable through the 1990s even as other market interest rates declined. It could be that some consumers do not care about the interest rate on their credit card because they have no intention of paying interest on their purchases and pay off the whole balance at the end of the month. Brito and Hartley (1995) argue that credit card

rates remain high because credit cards attract customers who have a higher risk of default and is a much easier way for consumers to arrange short term loans than going to a bank.

Gross and Souleles (2001) find that credit card debt responds immediately to changes in the interest rate. They find that a 1% increase in interest rates corresponds to a \$70 decline in debt in one month. They also find evidence that the sensitivity of consumers to interest rates outweighs transaction costs. Therefore, consumers with high rates seek lower interest rates despite the search costs.

Credit card availability changes the behavior of consumers as more and more individuals use credit cards as revolving credit instead of for convenience. Consumers use credit cards for convenience, as well as necessity for phone and internet ordering, as well as to reap the rewards of frequent flyer miles and cash back programs. Despite the large competition, credit card interest rates appear to be quite sticky, as credit card interest rates remain high in comparison to other types of loans.

Transaction Costs & Search Behavior

Transaction costs include the amount of time a borrower spends searching for the best loan terms available to them. The larger the spread of available interest rates on the market, the longer one would expect the borrower to search to get the best deal.

The decision to borrow money is complex and depends upon a variety of economic circumstances. Economic theory would predict that the amount of search conducted depends positively on the amount needed to borrow. Typically one thinks of a consumer making a rational decision to borrow money in order to be able to consume now. However, credit cards are often used for impulse purchases (Gärling, Kirchler et al.

2009). Consumers may at times have to make a quick decision and these impulse purchases may or may not be rational decision.

In the late 1980s, many credit cards started offering rewards to users due to increasing competition. This trend continued and intensified competition in the credit card market. For example, consumers can enjoy cash back rewards and discounts on merchandise offered by store cards. These reward plans encouraged credit card use. The reward plans might provide an incentive to increase search costs to be sure the consumer is getting the best deal.

Today many who use credit cards as revolving credit transfer their balance to another credit card if it offers a lower balance. Many credit card companies offer teaser introductory rates of 0% for transfer balances and/or purchases for a certain period of time. If a card holder has a high credit card balance, this increases their search time despite, the higher probability of rejection (Kerr and Dunn 2008). Therefore, the Truth-in-Lending Act has decreased search time and the cost of the search.

Little research considers mortgage search behavior. Searching for a mortgage is not something households do frequently, so there are few opportunities to learn from experience. However, Hilgert and Hogarth (2003) find that there is a correlation between knowledge and experience that leads to improvements in financial practices. This lack of expertise can lead to paying a higher rate than what is currently available in the market (Campbell 2006). Lee and Hogarth (1999) find that those that searched more reduced their interest rate and saved more in the interest payment during the first year. These authors also find that education increases loan search.

With the internet, it has become much easier to get loan information from a variety of institutions in a short amount of time. This availability of information has made shopping for the best terms for a loan much simpler. In conclusion, the time spent shopping for a loan can directly affect the terms of the loan, including the interest rate. However, no research has identified if women and men pay different interest rates on the same loan, all else equal.

Testing for Gender Differences in Interest Rates and Search Behavior

To test for interest rate differences, the following regression is utilized.

$$Y_i = \beta_0 + \beta_1 \text{SEX}_i + \beta_2 \text{LoanInfo}_i + \beta_3 \text{Demographics}_i + \beta_4 \text{CreditAttitudes}_i + \beta_5 \text{Credit Worthiness}_i + \varepsilon_i$$

where Y_i is the dependent variable, the interest rate. Interest rates are evaluated separately for mortgages, vehicles, educational loans, and credit card debt. Some households have multiple credit cards with balances. I use what the Survey of Consumer Finance's has deemed the household's primary credit card account. This credit card account carries the largest balance of all household credit card accounts. Since some households do not have any outstanding loans, the data are censored. Households that do not borrow either do not have a need or perceive the cost to be too high (that is, the interest rate is not low enough for their demand to be positive). To account for this, a Heckman 2-Step estimation procedure is used. The first step is to estimate the determinants of having a loan, and the second step is to estimate the determinants of the interest rate.

Specific loan information includes: whether the loan is secured by an asset, the loan to value ratio, the length of the loan, and in the case of mortgage loans, if the interest

rate is adjustable and if the loan has private mortgage insurance. In addition, loan information includes the amount of time shopping for a loan. Demographic variables are: age, education, race, and number of children. Credit attitudes are measured using the beliefs of the respondents about borrowing for education, a vehicle, to cover expenses if income is cut, for a vacation and for jewelry or furs. Credit attitudes are an important explanatory variable because they reflect one's willingness to borrow in spite of the increased cost due to interest payments. Credit worthiness is determined in practice through sophisticated econometric modeling which produces a credit score. Credit agencies sell individuals credit scores to loan agencies when they are evaluating potential customers. The Survey of Consumer Finances does not question respondents about their credit score, but does provide some useful proxies. In addition to income, the following variables access credit worthiness: whether the respondent has been over 60 days late paying bills, whether the respondent has ever filed for bankruptcy, and whether the respondent has been turned down for credit in the last five years.

Women have less free time than men, because they tend to take on more caring responsibilities (Blau 1998; MacDonald, Phipps et al. 2005), especially for children and aging parents, which contribute to their "second shift" (Bittman and Wajcman 2000; Floro and Miles 2003). The "second shift" would tend to increase their costs when searching for and reviewing loans. To test for differences in search behavior, an ordered probit model can be used considering the relative amount of time the household shops for financial services. The Survey of Consumer Finances specifically asks the following question: When making major decisions about borrowing money or obtaining credit, some people shop for the best terms and some don't. Where would you be on this scale:

0-almost no shopping, 1- between no shopping and moderate, 2 -moderate shopping, 3-between moderate and a great amount, 4 - a great deal of shopping. The equation takes the following form: $\text{Prob}(Y_i = 4) = \beta_0 + \beta_1 \text{SEX}_i + \beta_2 \text{LoanInfo}_i + \beta_3 \text{Demographics}_i + \beta_4 \text{CreditAttitudes}_i + \varepsilon_i$ where Y_i corresponds to the amount of shopping for the loan. The same dependent variables are used as before. A negative statistically significant marginal effect for women would indicate that they have higher search costs than men.

For comparison, a second regression is run for interest rates and search costs utilizing information on all households including the type of households as a dummy variable to include never married women, never married men, married/cohabitating couples, divorced, and widowed.

Finally, I include interaction terms of select variables with being female to capture the total effect of gender on the independent variable. This would produce the following reduced form equation for the Heckman equation: $Y_i = \beta_0 + \beta_1 \text{SEX}_i + \beta_2 \text{LoanInfo}_i + \beta_3 \text{Demographics}_i + \beta_4 \text{CreditAttitudes}_i + \beta_5 \text{Credit Worthiness}_i + \beta_6 \text{LoanInfo}_{it} * \text{Female} + \beta_7 \text{Demographics}_{it} * \text{Female} + \beta_8 \text{CreditAttitudes}_{it} * \text{Female} + \beta_9 \text{Credit Worthiness}_{it} * \text{Female} + \varepsilon_i$ where X_{it} is centered on the mean of each variable.

The probit equation is also enhanced using interaction terms. This produces the following reduced form equation for the probit equation: $\text{Prob}(Y_i = 4) = \beta_0 + \beta_1 \text{SEX}_i + \beta_2 \text{LoanInfo}_i + \beta_3 \text{Demographics}_i + \beta_4 \text{CreditAttitudes}_i + \beta_5 \text{LoanInfo}_{it} * \text{Female} + \beta_6 \text{Demographics}_{it} * \text{Female} + \beta_7 \text{CreditAttitudes}_{it} * \text{Female} + \varepsilon_i$ A list of variables used for these regressions is shown in Table 9.

Table 9. List of Variables Used

Name	Definition	Coding	Category	Expected sign
shoploan	When making major decisions about borrowing money or obtaining credit, some people shop for the best terms and some don't. Where would you be on scale 0-almost no shopping, 2 - moderate shopping, 4 - a great deal of shopping	Category	Dependent	N/A
IRCAR	Interest Rate on car loan	Continuous	Dependent	N/A
ircclb	Interest Rate on credit card with largest balance	Continuous	Dependent	N/A
IREDCLN	Interest Rate on education loan	Continuous	Dependent	N/A
IRMORT	Interest Rate on mortgage	Continuous	Dependent	N/A
SEX	Sex	0-male, 1-female	sex	Negative
singlefemale	Marital Status - Single female	Dummy	Demographics	Negative
Singlemale	Marital Status - Single male	Dummy	Demographics	Positive
mrtstatus12	Marital Status -Married or Living w/ partner	Excluded	Demographics	-
mrtstatus3	Marital Status - Separated	Dummy	Demographics	Negative
mrtstatus4	Marital Status - Divorced	Dummy	Demographics	Negative
mrtstatus5	Marital Status - Widowed	Dummy	Demographics	Negative
AGE	Age of head of household	Continuous	Demographics	Negative
AGE2	Age squared	Continuous	Demographics	Negative
EDUC	Total number of years of education that have been completed by head of household	Continuous	Demographics	Negative
KIDS	Total number of children in household	Continuous	Demographics	Positive
race 1	White non-Hispanic	Excluded	Demographics	-
race 2	Black / African American	Dummy	Demographics	Positive
race 3	Hispanic	Dummy	Demographics	Positive
race 4	Asian/Other	Excluded	Demographics	Negative
caacar	Ok to borrow money for car	0-no, 1-yes	Credit attitudes	Positive
caedu	Ok to borrow money for education	0-no, 1-yes	Credit attitudes	Positive
caexp	Ok to borrow money for living expenses if income cut	0-no, 1-yes	Credit attitudes	Positive
calux	Ok to borrow money for luxury	0-no, 1-yes	Credit attitudes	Positive
cavac	Ok to borrow money for vacation	0-no, 1-yes	Credit attitudes	Positive
IRMORTADJ	Is interest rate on mortgage adjustable?	0-no, 1-yes	Loan information	Negative
lengmort	Length of Loan-mortgage	Continuous	Loan information	Positive

Table 9 continued.

Name	Definition	Coding	Category	Expected sign
lengcar	Length of Loan - vehicle	Continuous	Loan information	Positive
l2vmort	Loan to value - mortgage	Continuous	Loan information	Negative
l2vcar	Loan to value - vehicle	Continuous	Loan information	Negative
haspmi	Has Private Mortgage Insurance	0-no, 1-yes	Loan information	Negative
lnincome	Natural Log of total income	Continuous	Credit worthiness	Negative
LATE60	Household had any debt payments more than 60 days past due in last year	0-no, 1-yes	Credit worthiness	Positive
bankrptc	Ever bankrupt	0-no, 1-yes	Credit worthiness	Positive
CATRNDW	Been turned down for credit in last 5 yrs no = 0, yes, turned down = 1	Dummy	Credit worthiness	Positive

Tests of Mean Differences

Results in Table 10 show the mean differences for interest rate and search costs.

There is no indication that the interest rate on mortgages is different for never married women and men. In contrast, the interest rate of married couples is statistically significantly lower than for never married households. Women spend less time shopping for loans than men or married couples, indicating that the opportunity costs are higher for never married women despite the fact that women's wages are lower on average.

Table 10. Test of Mean Difference

Terms of credit	Married couples vs. single men		married couples vs. single women		Single men vs. single women
Interest rate on mortgage	1.3160	***	1.4754	***	0.1594
Shop around for financial information	0.1582	**	0.3258	***	0.1676 **

* $p < .10$ ** $p < .05$ *** $p < .001$

Descriptive Statistics

Tables 11 and 12 provide unweighted descriptive statistics for never married women, never married men, and all respondents. Table 11 summarizes proportion of respondents having outstanding loans by loan type. Never married females are more likely to have a vehicle loan, credit card debt, and educational loan than never married men. However, never married men have more mortgages outstanding than never married women. This result could be due to women being more credit constrained than men when it comes to making large purchases. Almost 42% of all never married women have outstanding credit card debt as compared to 32% of never married men.

Table 11. Proportion of Respondent's Responses

	<u>Never married respondents</u>		Total population
	Female	Male	
Vehicle loan	23.5%	19.6%	30.3%
Credit card	41.4%	31.8%	38.4%
Education loan	25.0%	16.4%	12.1%
Mortgage	20.6%	27.3%	47.0%
Almost no shopping (0) for loan	23.4%	20.3%	21.2%
(1)	9.7%	10.3%	7.1%
Moderate shopping (2) for loan	36.3%	38.4%	34.0%
(3)	9.3%	14.7%	13.6%
Great deal of shopping (4) for loan	21.4%	16.4%	24.1%
Vehicle loan average interest rate	7.5%	7.0%	6.1%
Vehicle loan average standard deviation	5.3%	5.0%	4.8%
Credit card with largest balance— average interest rate	12.2%	11.0%	11.8%
Credit card with largest balance— standard deviation	8.5%	7.0%	7.3%
Education loan	5.1%	4.3%	5.2%
	4.3%	3.1%	3.4%
Mortgage	6.2%	5.9%	6.0%
	1.4%	1.3%	1.6%
Vehicle—average length of loan	4.23	4.27	3.98

Table 11 continued.

	<u>Never married respondents</u>		Total population
	Female	Male	
Mortgage—average length of loan	26.15	25.37	23.40
Proportion of population have adjustable rate mortgage	5.3%	4.6%	7.8%
Proportion of population made debt payments over 60 days late	6.9%	5.0%	4.2%
Proportion of population ever filing for bankruptcy	6.5%	8.0%	9.9%

Note: All estimates are unweighted.

When shopping for a loan, as reported in table 11, most respondents report that they spend a moderate amount of time shopping. Over 23% of never married female respondents report that they spend almost no time shopping for a loan, as compared to 20% of never married males. However, never married females have the highest response rate for the most time spent shopping for a loan as compared to never married men.

Never married women report having higher interest rates on all their loans as compared to never married men. In addition, never married women report having higher interest rates than all respondents on vehicle, credit card, and mortgage debt. The interest rate on educational loans for never married women is reported to be only one-tenth of a percent lower than all respondents. All respondent report having the shortest loan terms for both vehicles and mortgages.

Never married women are more likely to have adjustable rate mortgages than never married men, but are not more likely than all respondents. As compared to never married men, never married women may be more credit constrained and may have been forced into ARM's in the sub-prime mortgage market. Only 6% of never married women

report ever having filed for bankruptcy, making them the least likely group to report a bankruptcy filing. In contrast, almost 7% of never married women report that they have been over 60 days late paying a bill. Only 5% of never married men report that they were ever late and only 4.2% of all respondents. Paying bills late reflects negatively on credit scores, which increases the interest rate that a consumer must pay.

Table 12. Mean & Standard Deviation for Explanatory Variables

	<u>Respondents never married</u>				<u>All respondents</u>	
	<u>Female</u>		<u>Male</u>			
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
<u>Demographics</u>						
Age of head of household	37.44	14.83	39.26	14.54	51.81	16.07
Total number of years of education that have been completed by head of household	13.62	2.52	13.96	2.60	14.00	2.78
Total number of children in household	0.75	1.06	0.11	0.52	0.86	1.19
Race of respondent - White	0.52	0.50	0.68	0.46	0.80	0.40
Race of respondent - Black/African American	0.36	0.48	0.16	0.37	0.09	0.29
Race of respondent - Hispanic	0.08	0.28	0.08	0.28	0.07	0.26
Race of respondent - Asian/Other	0.04	0.19	0.07	0.25	0.04	0.20
<u>Credit attitudes</u>						
Ok to borrow money for car	0.74	0.44	0.78	0.42	0.78	0.41
Ok to borrow money for education	0.88	0.32	0.85	0.36	0.82	0.39
Ok to borrow money for living expenses if income cut	0.66	0.47	0.59	0.49	0.50	0.50
Ok to borrow money for luxury	0.06	0.25	0.08	0.27	0.05	0.22
Ok to borrow money for vacation	0.18	0.38	0.16	0.36	0.13	0.34
<u>Loan information</u>						
Is interest rate on mortgage adjustable?	0.05	0.22	0.05	0.21	0.08	0.27
Length of Loan-mortgage	5.38	11.26	6.93	11.98	11.00	13.19
Length of Loan - vehicle	0.96	1.98	0.84	1.88	1.21	2.14
Loan to value - mortgage	0.43	0.36	0.37	0.34	0.32	0.33
Loan to value - vehicle	0.20	0.36	0.15	0.31	0.18	0.31

Table 12 continued.

	<u>Respondents never married</u>				<u>All respondents</u>	
	<u>Female</u>		<u>Male</u>			
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Moderate shopping for loan	0.36	0.48	0.38	0.49	0.34	0.47
Between moderate & great deal of time	0.09	0.29	0.15	0.35	0.14	0.34
Great deal of time shopping for loan	0.21	0.41	0.16	0.37	0.24	0.43
<u>Credit worthiness</u>						
Natural log of total income	10.06	0.93	10.45	1.33	11.58	1.79
Household had any debt payments more than 60 days past due in last year	0.07	0.25	0.05	0.22	0.04	0.20
Ever bankrupt	0.06	0.25	0.08	0.27	0.10	0.30
Been turned down for credit in last 5 yrs	0.25	0.43	0.17	0.37	0.16	0.36
N	1,240		1,190		22,090	

Regression Results

The regression results for the amount of time shopping for a loan and for interest rates are reported in Tables 13-15. The discussion of results is divided into the results of variables not related to gender and gender and gender interaction variables for interest rates and search costs.

Section 1a- Discussion of Variables Not Related to Gender – Search Costs

Table 13 reports the regression results of the probit analysis of the time spent shopping for a loan in order to get the best terms. Time spent shopping is categorized as follows: almost no shopping, between no shopping and moderate, moderate shopping,

between moderate and a great amount, a great deal of shopping. Since there is no frame of reference about these definitions for the respondent, it is difficult to compare across individuals.

Table 13. Marginal Effects Regression Results of Probit Analysis of Shopping for a Loan

Definition	Never married respondents		All respondents	
<u>Sex</u>				
Respondent is never married female	-0.0334	**	0.0334	**
	0.0161		0.0147	
Respondent is never married male	-		0.0525	*
	-		0.0121	
<u>Demographics</u>				
Marital Status - widowed	-		-0.0450	*
	-		0.0129	
Marital Status - divorced	-		0.0175	**
	-		0.0087	
Marital Status - separated	-		-0.0471	***
	-		0.0272	
Age of head of household	-0.0085	*	-0.0041	*
	0.0031		0.0013	
Age squared	0.0001	*	0.0001	*
	0.0000		0.0001	
Total number of years of education completed by head of household	-0.0143	*	-0.0063	*
	0.0034		0.0012	
Total number of children in household	-0.0247	***	0.0080	*
	0.0149		0.0027	
Race/ethnicity of respondent - Black/African American	-0.0588	*	-0.0292	*
	0.0253		0.0097	
Race - Hispanic	-0.0293		-0.0077	
	0.0245		0.0114	
Race - Asian/Other	-0.0184		0.0206	***
	0.0298		0.0111	
<u>Credit attitudes</u>				
Ok to borrow money for car	0.0271		-0.0031	
	0.0243		0.0080	
Ok to borrow money for education	-0.0061		-0.0301	*
	0.0229		0.0082	

Table 13 continued.

Definition	Never married respondents		All respondents	
Ok to borrow money for living expenses if income cut	0.0218		0.0132	**
	0.0165		0.0055	
Ok to borrow money for jewelry/fur	-0.0661	*	0.0084	
	0.0230		0.0102	
Ok to borrow money for vacation	0.0417	***	0.0094	
	0.0213		0.0074	
<u>Loan information</u>				
Is interest rate on mortgage adjustable?	0.0248		0.0224	*
	0.0225		0.0083	
Length of Loan-mortgage	-0.0007		-0.0019	*
	0.0010		0.0003	
Length of Loan - vehicle	-0.0156	*	-0.0046	*
	0.0056		0.0017	
Length of Loan - education	0.0061	**	-0.0010	***
	0.0030		0.0006	
Loan to value - mortgage	0.0886	**	0.0316	*
	0.0411		0.0118	
Loan to value - vehicle	0.0832	**	0.0063	
	0.0344		0.0128	
Has Private Mortgage Insurance	0.0742	*	0.0427	*
	0.0187		0.0060	
<u>Credit worthiness</u>				
Natural log of total income	-0.0417	*	0.0060	***
	0.0106		0.0035	
Household had any debt payments more than 60 days past due in last year	0.0488		0.0982	*
	0.0423		0.0160	
Ever bankrupt	-0.0277		-0.0229	*
	0.0324		0.0090	
Been turned down for credit in last 5 yrs	-0.0086		0.0058	
	0.0232		0.0076	
Pseudo R ²	0.1849		0.1322	

Note: Reported std. errors are linearized. Pseudo R² is averaged over five imputations.

$p < .10$ *** $p < .05$ ** $p < .01$ *

Age has a negative, statistically significant impact on shopping for a loan.

Therefore older individuals spend less time shopping for a loan than young people or they have a different frame of reference. This result could support recent financial education initiatives for young members of the population. Education also has a negative effect on loan shopping. Educated individuals may have more financial knowledge and therefore require less time to find the best deal. Additionally, more educated people could have more demanding jobs, limiting the time available to shop for a loan. African Americans and Hispanics all spend less time shopping for a loan than their White counterparts. However, when comparing all respondents, Asians spend more time shopping for a loan.

Credit attitudes have varying degrees of effect on loan shopping. Never married respondents, who believe that it is okay to borrow to finance the purchase of jewelry or furs, reduce the time spent shopping for a loan. Having late payment history significantly increases time spent shopping for a loan, for all respondents. Higher levels of income increase time spent shopping for a loan, for all respondents but reduce it for never married households.

Section 1b- Discussion of Variables Not Related to Gender – Interest Rates

Table 14 & 15 reports the regression results for the Heckman 2nd stage regression. Education has a negative effect on vehicle, credit cards, and mortgage interest rates. The more education one has, the better interest rate one gets.

Table 14. Heckman Regression Results of Interest Rates of Population Having Particular Loan Type - Never Married Respondents

Definition	On vehicle debt	On credit card debt	On mortgage debt	On education debt
<u>Sex</u>				
Respondent is never married female	- 0.1621 1.1694	1.3624 2.7378	0.1082 0.3635	0.7074 1.8394
<u>Demographics</u>				
Age of head of household	0.5068 0.3769	-0.2230 0.3052	0.1146 0.0469	** 0.1926 0.5114
Age squared	- 0.0059 0.0044	0.0033 0.0035	-0.0009 0.0048	* -0.0011 0.0057
Total number of years of education that have been completed by head of household	- 0.3291 10.988 8	-0.1103 14.2681	-0.0535 3.4113	-0.4867 1.1870
Total number of children in household	- 0.6832 0.5714	0.2991 1.8208	-0.2955 0.3326	-0.4238 1.1841
Race/ethnicity of respondent - Black/African American	1.7209 0.9910	* -1.4331 0.9771	0.5144 0.2404	** -0.3071 2.0414
Race - Hispanic	1.6965 2.6836	-1.6651 1.7908	0.9049 0.4249	** 0.7608 3.6056
Race - Asian/Other	-0.9229 2.2391	1.5311 2.4857	0.2424 0.4650	0.9666 3.7570
<u>Credit attitudes</u>				
Ok to borrow money for car	1.6488 2.5673	-0.5806 2.5224	-0.2879 0.3955	-0.1339 3.0137
Ok to borrow money for education	-0.6538 2.1231	-1.8503 2.1662	0.2242 0.2863	-0.1124 3.0144
Ok to borrow money for living expenses if income cut	-0.2498 1.9663	0.2922 2.4583	0.1854 0.3070	-0.4789 1.7721
Ok to borrow money for jewelry/fur	-1.2621 0.4816	*** -0.7572 0.4462	0.5423 0.3165	* 2.3129 3.0733
Ok to borrow money for vacation	-0.6101 2.4107	1.9373 1.7937	-0.3062 0.3283	-1.2168 2.6421
<u>Loan information</u>				
Has private mortgage insurance	- -	- -	-0.1181 0.1041	- -

Table 14 continued.

Definition	On vehicle debt	On credit card debt	On mortgage debt	On education debt
Interest rate on mortgage is adjustable	-	-	0.5439 **	-
	-	-	0.2729	-
Loan to value	2.7499 ***	-	0.7741 ***	-
	1.0562	-	0.2336	-
Length of loan	0.4934	-	0.0574	0.1882
	1.7958	-	0.5043	0.1646
Moderate shopping for loan	1.1308	0.3946	0.0012	-1.1228
	1.7390	1.3637	0.2377	2.0126
Between moderate & great deal of time	0.4760	2.3970	-0.1115	0.4445
	1.1072	1.8906	0.2974	2.7877
Great deal of time shopping for loan	0.8742	-1.8034	0.1365	-1.1359
	1.7560	2.0677	0.3790	2.4514
<u>Credit worthiness</u>				
Natural log of total income	-1.5493 ***	0.2077	-0.0152	-2.0632
	0.4196	2.7172	0.1265	2.6807
Household had any debt payments more than 60 days past due in last year	-0.0948	4.2058 *	1.2417 *	-0.3713
	2.2084	2.2592	0.6348	2.9440
Ever filed for bankruptcy	-0.8400	-0.1277	-0.0529	-0.7510
	0.8796	0.8519	0.1256	2.4743
Been turned down for credit in last 5 yrs	1.2296	0.1911	0.5383	-5.9532
	1.9397	2.2445	0.4726	14.7330
Constant	13.7655 ***	15.1378 ***	0.4420	46.3969
	3.8457	4.4928	2.6020	75.2963
Wald Chi ²	28.63000	19.11250	79.01750	61.25000

Note: Reported std. errors are linearized. Wald Chi² is averaged over five imputations.

$p < .10$ *** $p < .05$ ** $p < .01$ *

Table 15. Heckman Regression Results of Interest Rates of Population Having Particular Loan Type—All Respondents

Definition	On vehicle debt	On credit card debt	On mortgage debt	On education debt
<u>Sex</u>				
Respondent is never married female	0.1746	1.9650 ***	0.0127	0.1959
	0.0467	0.5685	0.1085	0.5923

Table 15 continued.

Definition	On vehicle debt	On credit card debt	On mortgage debt	On education debt
Respondent is never married male	0.0864	0.3385	-0.1389	-0.7465
	0.6572	0.8881	0.2165	0.6556
<u>Demographics</u>				
Marital status - separated	0.9207 **	-2.3049 ***	0.4273 ***	-0.4762
	0.4564	0.3674	0.0558	0.4805
Marital status - divorced	1.1448	0.9056	0.2586	0.9172
	0.8331	1.2052	0.2865	1.0470
Marital status - widowed	0.2427	-0.1065	-0.0587	-0.5417
	0.5004	0.6293	0.1448	1.4818
Age of head of household	-0.1606 **	0.1133	-0.0062	0.0540
	0.0671	0.0987	0.0184	0.1085
Age squared	0.0014 **	-0.0004	0.0000	0.0000
	0.0007	0.0010	0.0002	0.0013
Total number of years of education that have been completed by head of household	-0.1934	-0.1684	-0.0164	-0.1268
	1.7920	2.6256	0.6289	2.6407
Total number of children in household	-0.0115	0.1908 **	0.0229	-0.1816
	0.0576	0.0957	0.0882	0.1340
Race/ethnicity of respondent - Black/African American	0.7241	-0.9298	0.1889	0.5963
	0.7231	0.9834	0.1939	1.4166
Race - Hispanic	0.5705	0.9935	0.2015	-0.0101
	0.5190	0.6742	0.1426	0.5297
Race - Asian/Other	-1.0468 **	1.2959 *	-0.0456	-0.4101
	0.4510	0.6953	0.1420	0.5836
<u>Credit attitudes</u>				
Ok to borrow money for car	0.4125	-0.4846	0.1091	0.7642 *
	0.3841	0.5559	0.1134	0.4463
Ok to borrow money for education	-0.6084	-0.5385	-0.0958	-1.6078 ***
	0.4566	0.6562	0.0950	0.5995
Ok to borrow money for living expenses if income cut	0.1230	-0.1226	0.0780	0.0559
	0.3674	0.5626	0.0956	0.7662
Ok to borrow money for jewelry/fur	-0.1382	-1.4715 ***	0.2320 ***	0.6645 ***
	0.1699	0.1784	0.0304	0.1695
Ok to borrow money for vacation	0.0483	-0.1926	-0.1700	0.1197
	0.4177	0.5962	0.1075	0.4972

Table 15 continued.

Definition	On vehicle debt	On credit card debt	On mortgage debt	On education debt
<u>Loan information</u>				
Has private mortgage insurance	-	-	-0.3482 ***	-
	-	-	0.0309	-
Interest rate on mortgage is adjustable	-	-	0.0256	-
	-	-	0.0724	-
Loan to value	0.5439 **	-	0.3808 ***	-
	0.2576	-	0.0423	-
Length of loan	0.8810 *	-	0.0506	0.0356
	0.4703	-	0.1808	0.4454
Moderate shopping for loan	-0.0120	0.2496	-0.0334	-0.6920
	0.6154	0.9129	0.1548	0.7458
Between moderate & great deal of time	-0.1985	0.2001	-0.1579	-0.1426
	0.3782	0.5072	0.0957	0.4847
Great deal of time shopping for loan	-0.3791	-0.4507	-0.2086 *	-0.7314
	0.3989	0.6165	0.1076	0.4933
<u>Credit worthiness</u>				
Natural log of total income	-0.2734	0.7031	-0.0037	0.1191
	0.0718	0.8500	0.0078	0.1629
Household had any debt payments more than 60 days past due in last year	0.6801	1.8723 ***	0.2811 *	1.2948 ***
	0.6006	0.5602	0.1653	0.4895
Ever filed for bankruptcy	0.9048 ***	1.6008 ***	0.2057 ***	0.4444 ***
	0.1350	0.1173	0.0343	0.0942
Been turned down for credit in last 5 yrs	0.9281 *	0.6815	0.3922 ***	0.0642
	0.4981	0.7357	0.1444	0.5846
Constant	12.6894 ***	5.7258 ***	4.1977 ***	5.4510 ***
	0.9662	1.1029	0.2248	1.2802
Wald Chi ²	423.37600	69.85200	323.16000	21.31400

Note: Reported std. errors are linearized. Wald Chi² is averaged over five imputations.

$p < .10$ *** $p < .05$ ** $p < .01$ *

An adjustable rate mortgage results in a higher interest rate for never married household respondents. Both the loan to value ratio and the length of the loan has positive, statistically significant results for vehicles and mortgages. The loan to value ratio is particularly high for never married respondents.

Income negatively affects the interest rate on vehicle, mortgage and educational loans. The higher the borrower's income, the lower the interest rate charged. Credit history plays a significant part on the interest rate one gets when applying for a loan. The results confirm this. Having a history of late payments increases the interest rate at a statistically significant level for all loan types for both never married respondents and all respondents, except for vehicle and education loans for never married respondents. A past bankruptcy increases the interest rate for all loan types for all respondents.

Section 2a- Discussion of Gender and Gender Interaction Terms – Search Costs

Table 13 reports the regression results of the probit analysis of time spent shopping for a loan in order to get the best terms. Time spent shopping is categorized as follows: almost no shopping, between no shopping and moderate, moderate shopping, between moderate and a great amount, a great deal of shopping. Because there is no frame of reference, it is possible that women and men interpret the categories differently. Of particular interest is the coefficient of never married women. Never married females spent less time shopping for a loan than never married males, indicating that they have higher search costs. In contrast, never married females spend more time shopping for a loan than married respondents. Both results are statistically significant at the 5% level. These results could possibly indicate that never married women are more time

constrained than never married males, but are not as time constrained as their married counterparts. Married couples may also have more financial education between the two of them, thereby believing that they don't need to spend as much time shopping for a loan because they might be more savvy shoppers due to the combined financial education. Married/cohabitating households also may have more combined experience shopping for a loan. Never married women may spend more time shopping for a loan than married/cohabitating couples because they do not feel as confident making financial decisions. Never married women may also feel like they need to spend more time shopping for a loan because they are more financially vulnerable than married/cohabitating couples. Finally, since a gender asset gap exists, never married women may not have as much experience shopping for a loan. Widowed and separated respondents spend less time shopping for a loan as compared to married respondents. However, divorced respondents spend more time shopping for a loan than married respondents.

When evaluating the time spent shopping for a loan, never married females spend less time than never married men, indicating that their search costs are higher. Given that never married women and never married men are paying the same interest rates on the same types of loans, it appears that never married women are doing just as good of a job as never married men in shopping for a loan, despite the fact that they are spending less time.

Marginal effects of the probit analysis with interaction terms for being female were also regressed. The variable for being female was interacted with select variables. Specifically, sex was interacted with age, education, number of children, life expectancy,

wage income, and unemployment. These variables were selected for interaction because of their known gender dimensions. For example, women have a longer life expectancy, and historically, women have received fewer years of education (Blau, Ferber et al. 2002), which often serves as a proxy for financial education. The number of children is selected due to the fact that women tend to take on more caring responsibilities than men. Wage income is included due to the fact that historically there has been a wage gap between women and men. Finally, unemployment is selected to determine if an adverse life event affects attitudes toward credit differently for women.

The results of an F-test of joint significance of the interacted variables are reported for each regression. The results indicate that at a 1% level of significance, the interacted variables are collectively different from zero. Also, the results of an F-test are reported of the comparison of the regression with interaction terms and without interactions. This F-test indicates that the interaction terms do not provide a statistically significant improvement in explanatory power between the two equations.

Section 2b- Discussion of Gender and Gender Interaction Terms – Interest Rates

Tables 14 and 15 report the regression results for the Heckman 2nd stage regression. Never married women do not pay statistically higher interest rates for vehicles, credit cards, mortgages, and educational loans than never married men. However, when I compare never married women to all respondents, never married women pay higher interest rates on credit card debt, by 1.9%.

This research is important because it indicates that, all else equal, never married women and never married men pay the same interest costs for the same loan. Therefore,

never married women are not being financially disadvantaged by paying higher interest rates on loans. Given the level of financial difficulties that women encounter, interest rates are one area where never married women are equals to never married men.

Interaction terms were added to the regression to test the significance of gender interaction against select variables. The results indicate that the interacted variables are collectively not different from zero. Therefore, adding the interaction terms added no explanatory power for interest rates charged on loans.

Conclusion

The results of this chapter indicate that when I compare never married women to all respondents, never married women pay higher interest rates on credit card debt only. However, when I look specifically at gender by limiting the sample to never married women and never married men, there are no detectable gender differences in interest rate loan costs. When evaluating the time spent shopping for a loan, never married females spend more time than the population as a whole, but less time than never married men.

This first attempt at looking at gender differences in terms of credit specifically focused on search time and interest rates. However, this provides only part of the loan search story. Some consumers may shop for a loan based on certain loan features, such as closing costs. Some consumers may be trying to minimize short-term costs rather than long term costs, which are most affected by the interest rate. Therefore, further research is needed to identify what specific loan features households consider and how these households compare available options and if these vary by gender. Finally, it will be important to know if and how the decision-making process varies by gender.

Specifically, do men and women evaluate features of loans differently when they compare loan options?

With regard to search time, it would be beneficial for future research to identify exactly how much time is spent shopping for a loan, so a specific frame of reference is established during the data collection process. This eliminates the ambiguity of individuals interpreting some shopping for a loan versus a moderate amount or a lot of shopping for a loan. Additionally, research has not yet identified how people shop for loans and if there are gender differences in the process. Identifying the actual amount of time and the process of shopping for a loan provides important information for policy makers and educational initiatives.

The final chapter of this dissertation considers the effect of the interest rate along with the effects of credit attitudes to determine if never married women and never married men make different decisions with regards to their household balance sheets.

CHAPTER 4

GENDER DIFFERENCES IN THE HOUSEHOLD BALANCE SHEET

The final objective of this dissertation is to determine the extent to which any differences in household balance sheets by gender are the result of differences in gender-based attitudes about credit versus gender-based differences in borrowing constraints. The household balance sheet is described by a number of ratios: Debt/Assets, Debt/Income, Monthly Payments/Monthly Income and various sub-categories of each. The lower each specific ratio, the stronger the household balance sheet and the more financially sound the household is.

Balance sheet ratios are the outcome of utility maximization by the household. Utility is derived from consumption today and consumption in the future. Utility is maximized subject to the household's budget constraints, which depend on the costs of credit. As discussed in Ch. 3, the interest rate determines the slope of the budget constraint. Preferences determine the shape of the indifference curve. As discussed in Ch. 2, attitudes towards credit, among other things, are reflected in the preferences of the household for debt. The tangency of the budget constraint and the indifference curve determines the household's financial position. This research determines if the tangency differs by gender and if the reason for the differences is related to attitudes towards credit and budget constraints. As documented in Chapter 1, gender differences exist in wage income, investment strategy, risk propensity, asset ownership, availability of health

insurance and retirement benefits, just to name a few. Men and women also differ in their responsibilities to care for children and older family members. Ultimately these differences result in a disparity of available resources between never married women and never married men. Some minimum level of consumption is needed for all households. If never married women earn lower wages, then even if they are consuming at some minimum level, their demand for debt would be greater than the demand for debt of a never married male. This demand could force never married women to take on a higher debt burden than never married men or force them to pay higher interest costs because they may be credit constrained. The results from Chapter 3 indicate that never married women and men are not paying different interest rates. Therefore, it is possible that never married women would have a worse balance sheet position, despite their higher savings rates and conservative nature.

Household debt grew considerably from 1982 to 2004 when the median debt/income ratio more than tripled (Dynan 2009). Bankruptcy rates grew, particularly for women, with women now accounting for 30% of all bankruptcy filing (Sullivan and Warren 1999). However, the literature is unclear as to why women's bankruptcy filing rates are so high. Individuals and households file for bankruptcy when they determine they do not have adequate inflows of cash or assets to cover the debts they have accumulated. Recent reports of bankruptcy filings highlight the growing number of female filers. This growth is alarming considering that women already have a significant number of disadvantages in society. However, since women have higher savings rates and are more risk averse, we would expect that they take less risk on their household balance sheet. However, this hypothesis is contradicted by the current bankruptcy filing

rates. This research determines if never married women and never married men have statistically different household balance sheets.

The findings of this chapter show that despite their greater acceptance to borrow, never married females have stronger balance sheet ratios than married/cohabitating households. Despite no differences in attitudes towards credit, never married women have weaker household balance sheets than never married men, indicating that never married women are borrowing more, relative to their available resources, assets and income.

This chapter is organized as follows: A review of the current literature on bankruptcy and household balance sheets follows, the research methodology is then proposed, followed by descriptive statistics, and test of mean differences. The chapter concludes with regression analysis and suggestions for further research.

Literature Review

The purpose of this review of the bankruptcy literature is to determine if an answer exists as to why the number of female filers is growing so quickly and if the filing is specifically related to the household balance sheet.

Bankruptcy

Bankruptcy filing rates increased five-fold from 1980 to 2004, when 1.5 million households filed for bankruptcy, prior to the new bankruptcy reform passed in 2006. Adverse events, such as divorce, job loss, rising health care costs, and increased debt holdings, including both mortgage and credit card debt, have all been blamed for the rise in bankruptcy filing rates. Discharge of debt is often the dominant consideration in the

household's decision to file for bankruptcy. Credit card debt and misuse are primary reasons for bankruptcy filing (White 2007). In 2004, the average bankruptcy filer had credit card debt of \$25,000. Figure 1 shows the growth in overall household bankruptcy filing rates and the growth of women's filing rates.

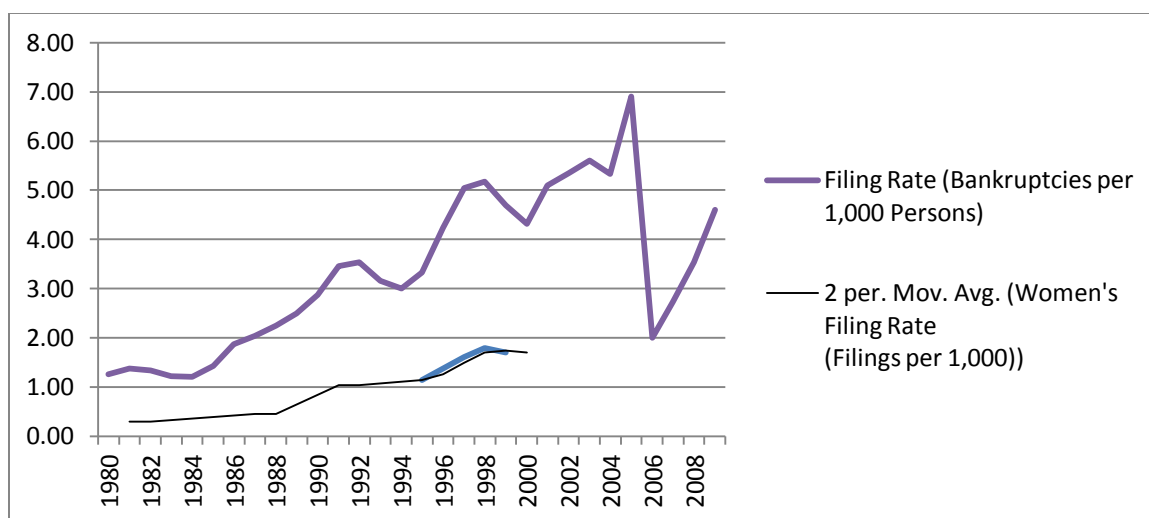


Figure 1. Bankruptcy Filing Rates 1980-2009

Bankruptcy law is federal law; the first permanent law was passed in 1898, and there were significant reforms in 1978 and 2005. Under the federal law, states set their own homestead and personal property exemption rates. States also have other laws governing credit, including garnishment and usury laws. Therefore, understanding the bankruptcy and other credit laws in one's state of residence is critical to maximizing the returns to filing for bankruptcy, but exactly which laws are most important is not clear.

Fay, Hurst et al. (2002) find that households are more likely to file for bankruptcy when the benefits to file increase and when they live in a district with high filing rates.

They find little support for bankruptcy filing being the result of an adverse event. In contrast, Lefgren and McIntyre (2009) claim that exemption rates, the size of the public safety nets, and payday loan regulations provide no explanatory power in state filing rates. Using historical data, Hansen and Hansen (2006) find a strong relationship between bankruptcy rates and laws regarding garnishment and usury laws. Wage garnishment and bankruptcy have traditionally been the two choices households have when they are unable to repay debt on time. However, some households benefit from defaulting on loans without creditors taking legal action (Miller 2008). This informal type of bankruptcy is a substitution for actual bankruptcy filing. Dawsey and Ausubel (2004) found a positive relationship between state garnishment laws and formal bankruptcy filings. Many households use informal bankruptcy in states with relatively low garnishment laws. Estimates show that an additional 15% of households would benefit financially from filing for bankruptcy and that number could be even higher if households acted strategically in planning for bankruptcy (White 1998).

Looking beyond the law, some researchers argue that people don't file for bankruptcy because of the stigma associated with filing and others argue that the stigma has declined over time. Westbrook and Warren et al. (2006) test for change over time. If bankruptcy today carries less stigma, then the average household filing for bankruptcy now would be in better financial shape than previous filers, when stigma has higher. They find that debtors have more debt relative to assets in 2001 than they had in 1981, which is inconsistent with the hypothesis of declining stigma. An alternative hypothesis is that the availability of information changed the stigma associated with bankruptcy by making information readily available. While it often wasn't reported in the newspaper in

1981, today bankruptcy filing information is available on the internet, making it much easier for family, friends, and neighbors to discover the bankruptcy. Therefore, this increased availability of information increases the stigma associated with filing for bankruptcy. However, Athreya (2004) finds no support for this hypothesis.

Fay, Hurst, et al. (2002) note that the household bankruptcy decision has been difficult to study because the Panel Study of Income Dynamics did not include information on filing for bankruptcy until recently. These household-level data includes information on the sex of the head of the household, although little research has focused on gender differences. None of the aforementioned studies included sex as an explanatory variable, despite the fact that since the 1980s the number of women filers grew much faster than male filers or joint filers, and that women now account for 30% of all bankruptcy filers (Sullivan and Warren 1999).

Additionally, data collection issues make explaining this change in gender composition in bankruptcy difficult. For example, household survey questions specifically ask about the respondent's sex. The Survey of Consumer Finance and the Panel Study of Income Dynamics (PSID) specifically ask respondents if they have ever filed for bankruptcy. However, the number of positive responses in the PSID is 50% less than the national filing rate, indicating that filers are not always willing even in an anonymous survey to admit to a previous bankruptcy (Warren, Westbrook et al. 2006). In court records, bankruptcy petitioners do not report their sex, making comparisons between the records of actual bankruptcy filing and household survey data difficult.

In summary, current bankruptcy research cannot satisfactorily explain the gender differences in bankruptcy filing rates.

Household Default & Balance Sheets

Household debt grew considerably over the last 20 years, with the median debt/income ratio more than tripling from 1982 to 2004. The number of households with debt increased from 70% in 1983 to 77% in 2004 (Dynan and Kohn 2007). Data from the Survey of Consumer Finance over a 25 year period show that the debt-service ratio (defined as the required payments on debt to income) rose from 5% in 1983 to 10% in 1995, and to 13% in 2007. The percentage of households with debt service obligations greater than 40% of income was 11% in 2007, up from 4% in 1983 (Dynan 2009). The rise in household indebtedness has not been limited to the United States. Canada has also seen significant rises in household debt. The Canadian financial services industry considers a household with a 40% debt service burden to be financially vulnerable (Dey, Djoudad et al. 2008). Households that are the most financially vulnerable are characterized by low income class, low educational attainment, and self-employed workers (Dey, Djoudad et al. 2008).

Since the beginning of the recent recession, households have been ridding themselves of debt. The majority of this “deleveraging” is taking place through bankruptcy and the short sale of homes. 2009 marked the first year that U.S. household debt has fallen since records were kept in 1945. At the end of 2009, household debt stood at 122.5% of disposable income, down from its peak of 130.6% (Whitehouse 2010). The graphs in Figure 2 show these changes.

The 20th century has seen a great deal of innovation in consumer credit markets. Installment debt became available to households in the 1920s as households started to purchase consumer durables and vehicles. Initially, installment debt was short term and

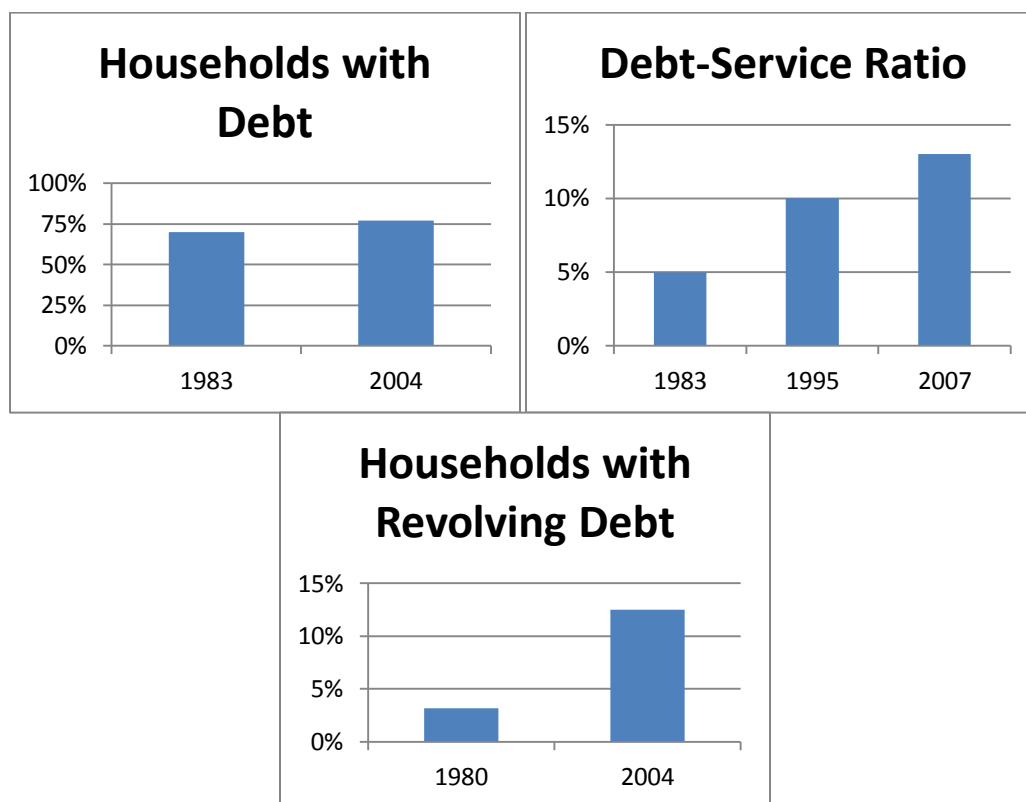


Figure 2. Changes in Household Debt

required large down payments. Defaulting on the loan meant repossession, the loss of the large down payment, and the loss of any equity that had been accumulated through payments (Olney 1999). Therefore, consumers drastically cut their consumption during the first years of the Great Depression so that they could make their monthly payments and preserve wealth. The law was changed late in the 1930s giving consumers their equity in the event of default. Consequently default rates grew because it was no longer as costly to consumers.

Information technology increased both the speed of approval and the availability of loans, including mortgages. Information about prospective borrowers is now readily

available, so that good risks can be financed at lower interest rates, requiring no prior relationship between the borrower and the lender. This increases the overall accessibility of loans. Information technology also changed consumer behavior. For example, consumers are now much more knowledgeable about opportunities to refinance and take advantage of “cash out” refinancing when the equity in their homes grows. In addition, households are able to smooth consumption by using new sources of credit rather than relying on precautionary savings (Bostic, Gabriel et al. 2009).

Credit cards were originally created as a convenient way to pay rather than as a source of credit, as monthly balances on credit cards had to be paid in full at the end of the month. As more and more businesses accepted credit cards, the convenience of using credit cards grew. Consumers favored the ease of using credit cards over using cash or checks. Early access to credit cards was limited to wealthy households, but over time credit card companies extended credit to more households. From 1980 to 2004, revolving debt increased from 3.2% of median family income to 12.5% (White 2007). Twenty years ago, many businesses accepted only cash. Today, consumers can use credit cards almost anywhere.

Initially, credit card balances had to be paid in full. However, when credit card companies introduced minimum monthly payments, consumers now had the option to use credit cards as revolving credit. In 1970, just 20% of all households owed a balance on a credit card. By 1998, over 40% did (Durkin 2000). Based on the 2007 Survey of Consumer Finances, 41.4% of never married women have a credit card balance outstanding, as do 31.8% of never married men and 38.4% of the all respondents. Credit card use is shown to increase with income, education, and social class (Garcia 1980).

Controversy exists as to whether households are using credit cards as a form of revolving credit or for convenience use. If households are using credit cards for convenience, then they should be paying off the balance due at the end of every month. Since 1992, a little over 50% of all household respondents for the SCF reported that they always or almost always paid off their balance at the end of the month (Johnson 2004). Consumers who make late payments are more likely to not pay off the balance in full and become revolving debt customers (Rutherford and DeVaney 2009).

Debt also can have psychological effects on the borrower or household. Not being able to meet monthly debt service burden over an extended time frame can result in repossession of any assets securing the loan, foreclosure of a home, and/or inability to secure future credit and bankruptcy. Consumers who view credit favorably are more likely to use it, which may result in higher interest rates, increased fees, and general overspending (Rutherford and DeVaney 2009). Using the British Household Panel Survey, Brown and Taylor et al (2005) report that debt is positively linked to psychological distress and in particular unsecured debt has a greater influence on psychological well-being than secured debt. Additionally, willingness to take on financial risk is positively correlated with increased debt (Rutherford and DeVaney 2009).

Despite all the media and economic research attention that has been given to the rise in household debt, not all believe that the rise in consumer debt is unwarranted or dangerous for the economy. Durkin, Ord, et al (2009) find that consumer and mortgage debt has not risen faster than real disposable income when economic factors are considered. They argue that as disposable income rises, expenditures on luxury goods

should also be expected to rise. Many luxury goods are financed through debt. In further support, McConnell, Peach et al. (2003) find that consumers who refinanced during the refinancing boom of the early 2000s did so wisely to restructure their balance sheets. Their findings suggest that homeowners wisely used tax deductible household debt to finance purchases that would have otherwise drawn down their savings. Additionally, they find a reduction in the debt service burden ratio of the household to disposable income, which improves the overall household financial situation. Research suggests that the financing patterns of consumer tends to be volatile in the short-run and is dependent on home equity line of credit availability, real after-tax interest rates, the interest rate spread, the consumer confidence index, and somewhat on debt burden (Park 1993). For example, existing homeowners borrowed 25 to 30 cents for every dollar of home appreciation from 2002-2006 (Mian and Sufi 2009) when interest rates were low and home values were rising. Household leverage did not grow to dangerous rates because net worth was growing faster due to the household and stock equity appreciation at this time. In fact, net worth to disposable income climbed from 2002 to 2007 (Eichner, Kohn et al. 2010).

Demographic characteristics show an effect on debt use. Blacks, Hispanics, and Asians/others are less likely to have household debt than whites, while blacks are significantly more likely to be late on payments than whites (Lee 2009). Women and individuals who have been denied credit are more likely to borrow from alternative financing sources, such as payday loans and loan financing companies (Chatterjee, Goetz et al. 2009).

Most research on debt and default is based on the household unit, with little consideration given to the sex of the household head. None of the aforementioned research considers the sex of the head of the household in the analysis, but some do consider the marital status and the education of the household head. The most relevant example is Fisher and Lyons (2006), who find that divorced men and women have significantly higher default rates on loans than married heads of household, and divorced women have a higher rate of repayment problems than men. Their work emphasizes the need for my research.

Testing for Gender Differences in Household Balance Sheet Ratios

To address this objective more completely, I use a simple, but gender-sensitive, model of demand for debt based upon the work of Rhee (2001) and Kowalewski (1982). The problem is framed with an intertemporal model in which utility from consumption now and consumption in the future is maximized subject to constraints, where both the utility function and the constraints are allowed to be gender-specific.

A household's demand for any type of loan depends on costs of the loan (the interest rate and the transaction costs, as described in Chapter 3) and attitudes towards credit (as described in Chapter 2). Demand is also contingent on household demographics, socio-economic variables and credit worthiness. The amount of debt and the specific balance sheet ratio is determined by the tangency of the household's gender-determined budget constraint and the gender-determined indifference curve. We want to know how much of any differences in debt are explained by differences in the budget constraint and how much are explained by differences in preferences.

The dependent variable is regressed against a vector of variables. It appears that many households have very little or no debt from a particular category. This is explored further in the descriptive statistics.

OLS regression analysis is conducted both for the dependent variable as a ratio and as the natural log of the ratio. The results for the coefficients were the same sign and at the same level of significance for both. Therefore, only the ratios as the dependent variable are reported on in the discussion. For all the regressions, the reduced form is:

$$Y_i = \beta_0 + \beta_1 \text{SEX}_i + \beta_2 \text{LoanCost}_i + \beta_3 \text{Attitudes}_i + \beta_4 \text{LoanInfo}_i + \beta_5 \text{Demographics}_i + \beta_6 \text{CreditWorthiness}_i + \varepsilon_i$$

Y_i is the dependent variable which is a measurement of a household financial ratio including: debt/assets, mortgage debt/assets, credit card debt/assets, vehicle debt/assets, education debt/assets, debt/income, mortgage debt/income, credit card debt/income, vehicle debt/income, education debt/income, monthly debt payments/monthly income, monthly mortgage payments/monthly income, monthly credit card debt payments/monthly income, monthly vehicle debt payments/monthly income, and monthly education debt/monthly income. All ratios are created by using values of assets, liabilities, net worth, monthly payments, and income using the Federal Reserve definitions on the SCF webpage. I follow the SCF definitions and inclusions in order to facilitate comparisons of my work to the large literature derived from the SCF. A complete summary of all variables is listed in Table 16.

Loan costs include the interest rate and the transaction costs, as determined in Chapter 3. Both of these are endogenous to the financial ratios. Attitudes toward credit are determined to be the dependent variables assessed in Chapter 2 and are also

endogenous to the financial ratios. Loan information variables include: the loan to value ratio, the length of the loan, if the interest rate is adjustable, and if there is primary mortgage insurance on the loan. Demographic variables include: age, education, race, and number of children. A credit score would be the perfect measure of credit worthiness. Since this is not available the following variables serve as proxies for credit worthiness: Natural log of income, whether the respondent has been over 60 days late paying bills, whether the respondent has ever filed for bankruptcy, and whether the respondent has been turned down for credit in the last five years.

As before, the parameter of interest is the coefficient on female. If this coefficient is negative and statistically significant then this would suggest that never married women have stronger balance sheets. A second step for this regression would be to include select interaction terms to better understand the effects of gender on the variables. This would produce the following reduced form equation: $Y_i = \beta_0 + \beta_1 \text{SEX}_i + \beta_2 \text{LoanCost}_i + \beta_3 \text{Attitudes}_i + \beta_4 \text{LoanInfo}_i + \beta_5 \text{Demographics}_i + \beta_6 \text{CreditWorthiness}_i + \beta_7 \text{LoanCost}_{it} * \text{Female} + \beta_8 \text{Attitudes}_{it} * \text{Female} + \beta_9 \text{LoanInfo}_{it} * \text{Female} + \beta_{10} \text{Demographics}_{it} * \text{Female} + \beta_{11} \text{CreditWorthiness}_{it} * \text{Female} + \varepsilon_i$ where X_{it} is centered on the mean of each variable.

Table 16. List of Variables

Name	Definition	Coding	Category	Expected Sign
ccbalasst	Credit card balance/assets	Continuous	Dependent	N/A
ccbalinc	Credit card balance/income	Continuous	Dependent	N/A
debtasst	Debt/assets	Continuous	Dependent	N/A
debtinc	Debt/income	Continuous	Dependent	N/A
mortassts	Mortgage & HELOC/assets	Continuous	Dependent	N/A
mortinc	Mortgage & HELOC/income	Continuous	Dependent	N/A

Table 16 continued.

Name	Definition	Coding	Category	Expected Sign
PIRMORT	Monthly mortgage payments to monthly income ratio	Continuous	Dependent	N/A
PIRTOTAL	Ratio of monthly debt payments to monthly income	Continuous	Dependent	N/A
pirvhc	Monthly vehicle payment/monthly income	Continuous	Dependent	N/A
pl3assts	Vehicle debt/assets	Continuous	Dependent	N/A
pl3inc	Vehicle debt/income	Continuous	Dependent	N/A
pl6assts	Education debt/assets	Continuous	Dependent	N/A
pl6inc	Education debt/income	Continuous	Dependent	N/A
singlefemale	Marital status - single female	Dummy	Demographics	Negative
Singlemale	Marital status - single male	Dummy	Demographics	Positive
mrtstatus12	Marital status -married or living w/ partner	Excluded	Demographics	-
mrtstatus3	Marital status - separated	Dummy	Demographics	Negative
mrtstatus4	Marital status - divorced	Dummy	Demographics	Negative
mrtstatus5	Marital status - widowed	Dummy	Demographics	Negative
AGE	Age of head of household	Continuous	Demographics	Negative
AGE2	Age squared	Continuous	Demographics	Negative
EDUC	Total number of years of education that have been completed by head of household	Continuous	Demographics	Negative
KIDS	Total number of children in household	Continuous	Demographics	Positive
race 1	White non-Hispanic	Excluded	Demographics	-
race 2	Black / African American	Dummy	Demographics	Positive
race 3	Hispanic	Dummy	Demographics	Positive
race 4	Asian/Other	Excluded	Demographics	-
cacar	Ok to borrow money for car	0-no, 1-yes	Credit attitudes	Positive
caedu	Ok to borrow money for education	0-no, 1-yes	Credit attitudes	Positive
caexp	Ok to borrow money for living expenses if income cut	0-no, 1-yes	Credit attitudes	Positive
calux	Ok to borrow money for luxury	0-no, 1-yes	Credit attitudes	Positive
cavac	Ok to borrow money for vacation	0-no, 1-yes	Credit attitudes	Positive
IRCAR	Interest rate on car loan	Continuous	Loan costs	Positive
ircclb	Interest rate on credit cards	Continuous	Loan costs	Positive
IREDCLN	Interest rate on education loan	Continuous	Loan costs	Positive

Table 16 continued.

Name	Definition	Coding	Category	Expected Sign
IRMORT	Interest rate on mortgage	Continuous	Loan costs	Positive
shoploan3	Moderate shopping for loan	Dummy	Loan costs	Positive
shoploan4	Between moderate & great deal of time	Dummy	Loan costs	Negative
shoploan5	Great deal of time shopping for loan	Dummy	Loan costs	Negative
lengmort	Length of loan-mortgage	Continuous	Loan information	Negative
lengcar	Length of loan - vehicle	Continuous	Loan information	Negative
lengedu	Length of loan - education	Continuous	Loan information	Negative
l2vmort	Loan to value - mortgage	Continuous	Loan information	Negative
l2vcar	Loan to value - vehicle	Continuous	Loan information	Negative
haspmi	Has private mortgage insurance	0-no, 1-yes	Loan information	Negative
risk 1	Not willing to take any financial risks	Excluded	Loan information	-
risk2	Take average financial risks	Dummy	Loan information	Negative
risk3	Take above average financial risks	Dummy	Loan information	Positive
risk4	Take substantial financial risks	Dummy	Loan information	Positive
irmortadj	Is interest rate on mortgage adjustable?	0-no, 1-yes	Loan information	Positive
lnincome	Natural log of total income	Continuous	Credit worthiness	Negative
LATE60	Household had any debt payments more than 60 days past due in last year	0-no, 1-yes	Credit worthiness	Positive
bankrptc	Ever bankrupt	0-no, 1-yes	Credit worthiness	Positive
CATRNDW	Been turned down for credit in last 5 yrs	Dummy	Credit worthiness	Positive

For comparison, a second regression is also run utilizing information on all households including the type of households as a dummy variable to include never married women, never married men, divorced, widowed, and married/cohabitating households. The interaction terms are also included for this regression of the total population.

Test of Mean Differences

Tests of mean differences are reported in Table 17 for mean differences in household balance sheet ratios. In general, there are no statistical differences in average overall balance sheet ratios (debt/assets and debt/net worth) between never married men and never married women. However, never married women have higher ratios of education debt to assets.

Differences do exist with respect to debt/income and monthly payment/monthly income. Never married women have more credit card/income, installment/income, goods and services/income, and educational debt to income than both never married men and married couples. This is indicated by their higher ratios and differences at statistically significant rates.

However, when considering the monthly payment/monthly income ratio, never married women only vary from never married men for credit card payments/monthly income and monthly revolving debt payment/monthly income. Women may be utilizing these forms of debt because they have control over how much they pay each month, thereby reducing their monthly debt payment burden. Another possibility is that never married women may be choosing loan terms that reduce the monthly payment, but take longer to pay off.

Table 17. Test of Mean Difference

Household Ratio	Married couples vs. never married men	Married couples vs. never married women	Never married men vs. never married women
Total debt/income	0.3225 **	0.1211	-0.2014
Total credit card debt/income	0.0079	-0.0204 **	-0.0283 **

Table 17 continued.

Household ratio	Married couples vs. never married men	Married couples vs. never married women	Never married men vs. never married women
Total installment debt/income	-0.0116	-0.1302 ***	-0.1187 *
Total primary mortgage & HELOC debt/income	0.3158 ***	0.1417	-0.1741
Total vehicle debt/income	0.0112	0.0008	-0.0104
Total goods & services debt/income	0.0060	-0.0469 ***	-0.0529 ***
Total educational debt/income	-0.0364	-0.1340 ***	-0.0976 *
Mortgage payments/income	0.1200	0.1783 ***	0.0584
Consumer debt payments/income	0.0107	0.0165	0.0058
Revolving debt payments/income	0.0297 **	0.0198	-0.0099 **
Credit card payments/income	0.0024	-0.0061 **	-0.0085 **
Vehicle payment/income	0.0015	-0.0053 *	-0.0068
Student loan payment/income	-0.0038	-0.0022	0.0016
Installment loan payment/income	-0.0033	-0.0060 ***	-0.0027
Total debt/net worth	0.1226	-0.3049	-0.4275
Total credit card debt/net worth	-0.0232	-0.0113	0.0120
Total installment debt/net worth	0.4314	0.2101	-0.2213
Total primary mortgage & HELOC debt/net worth	-0.3055	-0.5784	-0.2728
Total vehicle debt/net worth	0.4253	0.1744	-0.2510
Total goods & services debt/net worth	-0.0136	0.0490	0.0626
Total educational debt/net worth	-0.0023	0.0242	0.0265
Total credit card debt/assets	0.3928	0.3201	-0.0727
Total installment debt/assets	0.0000	0.0000	0.0000
Total primary mortgage & HELOC debt/assets	0.0441 ***	0.0346 ***	-0.0095
Total vehicle debt/assets	0.0837	0.0716	-0.0120
Total goods & services debt/assets	-0.9892	-7.3555	-6.3663
Total educational debt/assets	0.7700	-0.2748	-1.0447 *

* $p < .10$ ** $p < .05$ *** $p < .01$

Descriptive Statistics

Many households have no debt at all. Specifically, more never married females report having credit card, education, vehicle debt and total debt than never married men.

25% of never married females have education debt, but only 16.4% of men do. Never married females appear to utilize credit card debt at higher rates than never married males, 41.4% as compared to 31.8%. Never married females have credit card debt service burdens that are twice as high as never married males, as evidenced by the monthly credit card payment to monthly income of those having credit card debt. For never married women with credit card debt, total credit card debt to income is more than twice that of never married men and on par with all respondents. In cases where debt is present, in all but the case of mortgages, never married women have a higher debt service burden than never married men. Never married males are more likely to have mortgage debt and a higher monthly mortgage payment to income as compared to never married females. This may be problematic in that men have debt that supports a specific asset that generally grows in value where women are more likely to have debt for no specific asset or an asset that depreciates, such as a vehicle. In all cases, the debt to asset ratios and debt to income ratios are higher for never married females than they are for never married males. However, the mean of monthly debt payments to monthly income is lower for never married females as compared to never married males for those households having debt. This means that never married females with debt would have more disposable monthly income than never married males with debt.

Households with debt service burdens greater than 40% are considered financially vulnerable (Dey, Djoudad et al. 2008). 8.4% of never married females, 6.5% of never married males, and 11% of all households have monthly debt payments to monthly income of greater than 40%. When reviewing age categories, it appears that most households follow a life cycle model in which they take on debt early in life, pay it off

during their high earning years and have the majority of debt paid off by the time they approach retirement. Table 18 summarizes means and standard deviations for the independent variables.

Table 18. Mean & Standard Deviation for All Variables by Category

<u>Dependent Variables</u>	<u>Never married respondents</u>				<u>All respondents</u>	
	<u>Female</u>		<u>Male</u>			
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Credit card						
Balance/Assets	0.47	3.27	0.07	0.33	0.41	19.67
Debt/Assets	195.71	3913.52	4.01	47.29	14.45	912.37
Mortgage						
Debt/Assets	0.10	0.22	0.09	0.19	0.13	0.20
Vehicle Debt/Assets	0.10	0.39	0.05	0.17	0.11	4.60
Educational						
Debt/Assets	4.13	28.69	0.50	3.00	0.96	32.73
Credit card						
Balance/Income	0.08	0.43	0.03	0.08	0.05	0.19
Debt/Income	1.52	5.19	0.97	2.14	1.30	2.80
Mortgage						
Debt/Income	0.78	4.14	0.61	1.78	0.85	2.05
Vehicle						
Debt/Income	0.08	0.22	0.06	0.17	0.08	0.19
Educational						
Debt/Income	0.50	2.47	0.17	0.74	0.09	0.76
Monthly Credit card payment/monthly income	0.02	0.13	0.01	0.02	0.01	0.06
Monthly Student loan payment/Monthly income	0.01	0.04	0.01	0.10	0.00	0.03
Monthly mortgage payments to monthly income ratio	0.08	0.37	0.20	1.99	0.22	2.98
Ratio of monthly debt payments to monthly income	0.17	0.48	0.27	2.46	0.32	3.80

Table 18 continued.

	<u>Never married respondents</u>				<u>All respondents</u>	
	<u>Female</u>		<u>Male</u>			
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Monthly Vehicle payment/Monthly income	0.04	0.09	0.02	0.06	0.03	0.07
<u>Demographics</u>						
Age of head of household	37.44	14.83	39.26	14.55	51.81	16.07
Total number of years of education that have been completed by head of household	13.62	2.52	13.96	2.60	14.00	2.78
Total number of children in household	0.75	1.06	0.11	0.52	0.86	1.19
Race of respondent - White	0.52	0.50	0.68	0.46	0.80	0.40
Race of respondent - Black/African American	0.36	0.48	0.16	0.37	0.09	0.29
Race of respondent - Hispanic	0.08	0.28	0.08	0.28	0.07	0.26
Race of respondent - Asian/Other	0.04	0.19	0.07	0.25	0.04	0.20
<u>Credit Attitudes</u>						
Ok to borrow money for car	0.74	0.44	0.78	0.42	0.78	0.41
Ok to borrow money for education	0.88	0.32	0.85	0.36	0.82	0.39
Ok to borrow money for living expenses if income cut	0.66	0.47	0.59	0.49	0.50	0.50
Ok to borrow money for luxury	0.06	0.25	0.08	0.27	0.05	0.22
Ok to borrow money for vacation	0.18	0.38	0.16	0.36	0.13	0.34
<u>Loan Costs</u>						
Interest Rate on mortgage	1.28	2.59	1.60	2.70	2.83	3.20
Interest Rate on car loan	1.70	4.04	1.37	3.54	1.84	3.83

Table 18 continued.

	<u>Never married respondents</u>				<u>All respondents</u>	
	<u>Female</u>		<u>Male</u>			
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Interest Rate on credit cards	7.28	8.56	7.15	7.84	10.32	7.86
Interest Rate on education loan	1.27	3.07	0.70	2.02	0.63	2.06
Moderate Shopping for Loan	0.36	0.48	0.38	0.49	0.34	0.47
Between Moderate & Great Deal of Time	0.09	0.29	0.15	0.35	0.14	0.34
Great Deal of Time Shopping for Loan	0.21	0.41	0.16	0.37	0.24	0.43
<u>Loan Information</u>		-		-		-
Is interest rate on mortgage adjustable?	0.05	0.22	0.05	0.21	0.08	0.27
Length of Loan-mortgage	5.38	11.26	6.93	11.98	11.00	13.19
Length of Loan - vehicle	0.96	1.98	0.84	1.88	1.21	2.14
Loan to value - mortgage	0.43	0.36	0.37	0.34	0.32	0.33
Loan to value - vehicle	0.20	0.36	0.15	0.31	0.18	0.31
Has Private Mortgage Insurance	0.89	0.32	0.85	0.36	0.69	0.46
Length of Loan - education	1.29	5.02	0.59	2.76	0.76	3.71
Take average financial risks	0.34	0.47	0.37	0.48	0.42	0.49
Take above average financial risks	0.13	0.34	0.24	0.43	0.21	0.41
Take substantial financial risks	0.02	0.13	0.05	0.23	0.05	0.22
<u>Credit Worthiness</u>		-		-		-
Natural Log of total income	10.06	0.93	10.45	1.33	11.58	1.79
Household had any debt payments more than 60 days past due in last year	0.07	0.25	0.05	0.22	0.04	0.20

Table 18 continued.

	<u>Never married respondents</u>				<u>All respondents</u>	
	<u>Female</u>		<u>Male</u>			
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Ever bankrupt	0.06	0.25	0.08	0.27	0.10	0.30
Been turned down for credit in last 5 yrs	0.25	0.43	0.17	0.37	0.16	0.36
N	1,240		1,190		22,090	

Note: All estimates are unweighted.

The mean age of never married male respondents is almost two years older than never married female respondents. Never married females report taking fewer financial risks than both never married men and all respondents. In addition, they are more likely to have been turned down for credit in the last 5 years. 25% of never married females report being turned down for credit, whereas only 17% of never married males were turned down for credit in the last five years. It may be that fewer men need to apply for credit due to their higher salaries. The natural log of total income summary statistics supports the gender wage gap. It is expected that debt increases at a decreasing rate. Fewer never married women report filing for bankruptcy than never married males and all respondents.

Figure 3 reports on the distribution of the dependent variables, the financial ratios, by the proportion of the population that has a certain portion of debt. This provides a clear picture of the distributions for debt/assets, mortgage debt/assets, debt/income, and monthly debt payments/monthly income. As previously states, many households have

little to no debt. However, many households have considerable debt. For example, almost 50% of the population has debt that is greater than 50% of their income. 22% of the population has monthly mortgage payments between 10 & 25% of their monthly income and 13% of the population has credit card debt that is greater than 10% of their yearly income.

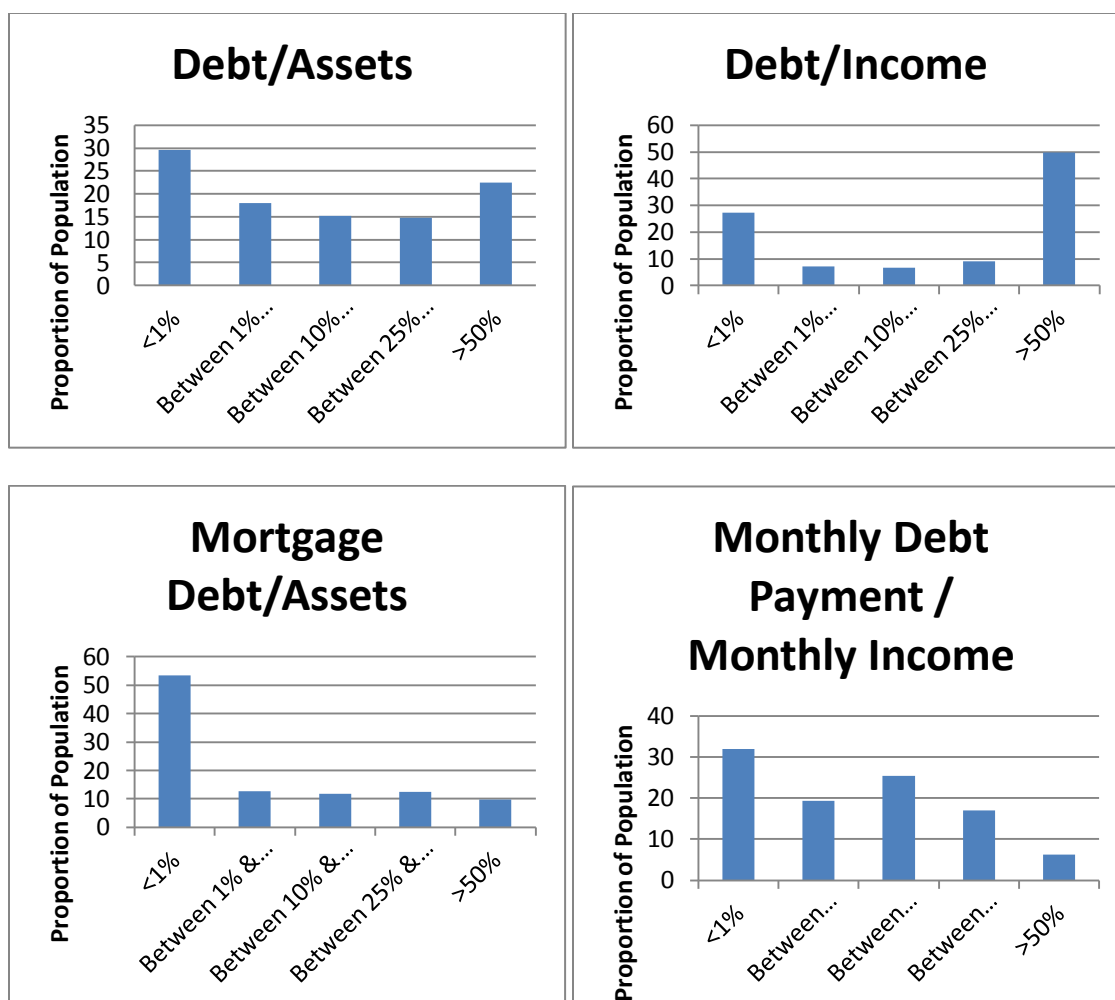


Figure 3. Distribution of Debt

Regression Results

Section 1- Discussion of Variables Not Related To Gender

The results of all regression are reported in Appendix A-C. In Chapter 3, I found that never married men and never married women did not pay different interest rates for loans. Interest rates are endogenous to the balance sheet ratio, but the association is still of interest. Higher interest rates for credit cards seem to increase household debt ratios, while higher interest rates on vehicle loans seem to reduce household balance sheets. This could be attributed to the fact that vehicle loans are more difficult to acquire than credit card loans. Additionally, time spent shopping for a loan is endogenous to financial ratios. It appears that time spent shopping for a loan is associated with higher debt ratios. Based on the discussion in Ch. 3, one would expect increased time spent shopping for a loan to reduce the interest rate, thereby reducing household debt. However, the causality appears to be reversed. Possibly, those who need debt more spend more time shopping for a loan. Consequently, it appears that increased time spent shopping for a loan increases the debt a household has.

Specific loan variables, such as loan to value ratio of mortgages and vehicles, are endogenous to the financial ratios and are correlated to income. For example, the higher the income of the household, the more one can afford to spend on a down payment, affecting the loan to value ratio. The association between the loan to value ratio for mortgages and vehicles is mostly positive. Therefore, the lower the collateral is for a loan, as indicated by a high loan to value ratio, the higher the household balance sheet.

In Chapter 2, I find that there are no detectible gender differences in attitudes towards credit between never married women and never married men. However, when comparing never married women to all respondents, never married women are more accepting of debt. Based on Rutherford and DeVaney (2009) findings that consumers who favor credit tend to overspend, we would expect favorable credit attitudes to increase household debt ratios. However, the results of all respondents show that attitudes toward credit have little effect on overall household balance sheet ratios, like monthly debt payments to monthly income, debt to income, and debt to assets, but do affect specific debt ratios such as credit card debt to income. It may be possible that households have a credit threshold and the composition of the debt is determined by credit attitudes, but not the overall amount of net. For all respondents, all five credit attitudes have positive statistically significant coefficients for credit card debt to assets. This supports Rutherford and DeVaney's (2009) findings.

Income was one of the most consistent predictors of household balance sheet ratios, but is negatively correlated to the household debt to income ratios. In addition, income has a spurious correlation to the debt to asset ratios. This is not a problem, as income is not the coefficient of interest. Higher income reduces household balance sheet ratios in all cases. That is, the higher one's income, the lower their balance sheet ratio, meaning a stronger balance sheet. However, other credit worthiness variables proved inconsistent. It was hypothesized that having been turned down for a loan would have a negative effect on the credit worthiness of the household and therefore result in a lower balance sheet ratio because that household would have less debt than desired. In general, having been turned down for a loan increases the household balance sheet overall. It may

be possible that the more households demand debt, the more they apply for loans that they do not qualify for. A past bankruptcy caused financial ratios to be higher in general. For never married households, a past bankruptcy increased monthly debt payments to monthly income over 10% and debt to assets by 14%. For all respondents, a past bankruptcy decreased household balance sheet ratios for all income ratios, but not asset ratios, presumably because it is more difficult to acquire assets with debt payments after a bankruptcy.

Demographic variables provided important insight into household debt. It was expected that age would have a negative effect on household balance sheet ratios, following the life-cycle model that households pay off debt as they age and do not acquire more debt. However, for all respondents, age has a positive effect for all monthly debt to monthly income ratios except for education. This is consistent with findings of Malmendier and Nagel (2009) that individuals who have not experienced severe economic hardship are more accepting of borrowing on credit. Number of years of education has mixed results on household balance sheet ratios, which is not as predicted. Higher education reduces the debt to asset ratios, but increases debt to income and monthly debt payments to monthly income. In general, children present in the household create more conservative household balance sheets, except for mortgage debt. Each child reduces debt to assets by 5% and credit card debt to assets by over 2% for never married households. Hispanics and Asians have higher debt to income, mortgage debt to income, and monthly debt to income than Whites. Asians have debt to income ratios 23% higher. This contradicts Lee's (2009) findings that Hispanics and Asians are less likely to have

household debt. However, Hispanics have education debt to income ratios 22% lower than Whites.

Section 2- Discussion of Gender & Gender Interaction Terms

Tables 19-21 summarize the magnitude of the coefficients and level of significance for the never married female respondents for each regression. Appendixes A-C reports the complete regression results.

Table 19. Summary of Gender Specific Coefficients—Debt to Assets

Financial ratio as dependent variable	Total debt/total assets		Mortgage debt/ assets		Vehicle debt/ assets		Credit card debt/ assets		Education debt/ assets
<u>Never married respondents</u>									
Never married female	0.0612	*	0.0340	*	-0.0090	**	-0.0015		0.0317 *
<u>All respondents</u>									
Never married female	0.0205	**	0.0379	*	-0.0114	*	-0.0005		0.0006

*** $p < .10$ ** $p < .05$ * $p < .01$

Table 20. Summary of Gender Specific Coefficients—Debt to Income

	Debt / income		Mortgage debt / income		Vehicle debt / income		Credit card debt / income		Education debt / income
<u>Never married respondents</u>									
Never married female	0.7386	*	0.3468	**	0.0361	*	0.0223	**	0.2975 *
<u>All respondents</u>									
Never married female	0.0974		0.2080		0.0385	*	0.0292	**	0.1340 ***

*** $p < .10$ ** $p < .05$ * $p < .01$

Table 21. Summary of Gender Specific Coefficients—Monthly Debt Payment to Monthly Income

	Monthly debt payments / monthly income		Monthly mortgage payment/ monthly income		Monthly credit card payment/ monthly income		Monthly vehicle payment/ monthly income		Monthly education payment / monthly income	
<u>Never married respondents</u>										
Never married female	0.0300	**	0.0037		0.0067	**	0.0188	*	-0.0018	
<u>All respondents</u>										
Never married female	-0.0606	*	-0.0396	*	-0.0087	**	-0.0027		-0.0006	

*** $p < .10$ ** $p < .05$ * $p < .01$

When I compare never married women to all respondents, never married females have stronger balance sheets in many respects, as evidenced by the statistically significant negative coefficient in the models that explain vehicle to assets, credit card balance to income, vehicle debt to income, monthly credit card debt to income, monthly mortgage debt to income, and total debt payments to income ratios. Specifically for never married women, vehicle debt to income is 3% lower than their married/cohabitating counterparts. The monthly debt payment to monthly income ratio is almost 6% lower for never married women than married households. Monthly mortgage payment to income for never married females is 4% lower than married or cohabitating households.

However, there are no statistical differences in total debt to income, mortgage debt to income, credit card debt to assets, and education debt to assets, monthly education payment to monthly income, and monthly vehicle payment to monthly income. The debt to asset ratio is higher for never married women than all respondents. Despite the lower

monthly payment to monthly income, never married women have higher debt to asset and mortgage debt to asset ratios than all respondents. Specifically, total debt to assets is 2% higher for never married women as compared to all respondents and the mortgage debt to assets is almost 4% higher. Therefore, the lower monthly payments, as evidenced by the monthly debt payments to monthly income ratios, are consistent with women's conservative preferences, but the worse leverage position is consistent with the asset gap.

However, when compared to never married men, never married females do not have stronger balance sheet ratios. Never married women have worse balance sheet ratios for all five debt to income ratios, debt to assets, mortgage debt to assets, credit card debt to assets, monthly debt payments to monthly income, monthly credit card debt to monthly income, and monthly vehicle debt to monthly income. Particularly, the debt to income ratio is 73% higher, mortgage debt to income is 34% higher, and education debt to income is 29% higher for never married women than never married men. The debt to asset ratio is 6% higher for never married women than never married men. Overall, the results indicate that the household balance sheets of never married females are weaker than never married males. Women's more conservative risk preferences may be hurting them financially as compared to never married males.

In summary, never married females seem to have stronger household balance sheet ratios as compared to married couples, but not as strong as never married males. Specifically, never married women have lower monthly payments as compared to the total population, as evidenced by the monthly debt payments to monthly income ratios, which is consistent with women's conservative preferences, but have worse leverage position, as evidenced by their debt to asset and mortgage debt to asset ratios, which is

consistent with the asset gap. Based on the literature review of the hardships faced by women, these results are plausible. Never married females are more conservative about monthly payments than married/cohabitating couples, who might have the luxury of adding an income in case of financial hardship. The possibility of two incomes for married/cohabitating couples means that they are better able to recover from economic shocks.

The high leverage ratios are particularly concerning for never married females. For one, research shows that women have fewer assets than men. My research indicates that never married women are borrowing more against these assets than married/cohabitating couples and never married men, making never married women more vulnerable to economic shocks. If they are borrowing more against their assets than married/cohabitating households, this means that they have less collateral left in cases of emergencies. This reduces the level of security that the asset provides because it makes it difficult to buffer against emergencies. Generally, in times of economic crisis, households can sell assets or use them as collateral to smooth income, which increases their ability to recover from an economic shock. However, given the high leverage ratios of never married women, they might not be able to use the asset to secure additional financing, which could limit their ability to recover from an adverse financial event.

High levels of leverage also reduce the overall wealth of never married women. This means lowered levels of both economic and political power for never married women. Low levels of wealth reduce the bargaining power of never married women entering into marriage. Additionally, these high levels of leverage may have adverse financial repercussions, making it more difficult for women to continue to acquire assets

in the future. This results in continued asset inequality over the life cycle, which further hinders women's financial security in old age.

This research has identified specifically that never married women have higher overall debt to asset and mortgage debt to asset ratios than both never married men and the total population. However, never married women have lower vehicle debt to asset ratios than both never married men and all respondents. It may be possible that women are choosing to be more leveraged on an asset that generally appreciates and less leveraged on an asset that depreciates.

Regression analysis with interaction terms for being female for the never married respondents and the total of all respondents was also tried as a specification. The variable for being female was interacted with select variables. Specifically, sex was interacted with age, education, number of children, two credit attitudes, risk taking, wage income, and bankruptcy. These variables were selected for interaction because of their known gender dimensions. These variables were selected for interaction because of their known gender dimensions. For example, women have a longer life expectancy, and historically, women have received fewer years of education (Blau, Ferber et al. 2002), which often serves as a proxy for financial education. The number of children is selected due to the fact that women tend to take on more caring responsibilities than men. Wage income is included due to the fact that historically there has been a wage gap between women and men. Finally, bankruptcy is selected to determine if an adverse life event affects women differently.

The results of an F-test of joint significance of the interacted variables are reported for each regression. The results indicate that at a 1% level of significance, the

interacted variables are collectively not zero. Also, the results of an F-test are reported of the comparison of the regression with interaction terms and without interactions. This F-test indicates that the interaction terms do not provide a statistically significant improvement in explanatory power between the two equations for the majority of the regressions. The only consistent interaction term, in the equations where the interaction terms improved the fit, was the interaction between gender and willingness to take on financial risk. Women who were more willing to take on financial risk improved their household balance sheets. Women who are willing to take on more risk may have acquired more assets, improving their leverage ratios.

Conclusion

Overall, household debt is a growing problem for many households in the United States. Particularly, this issue came to the forefront during the recent recession. In addition, the growing rate of bankruptcy filing by females is alarming. This dissertation clarifies if never married females have differing household balance sheet ratios than never married men and married/cohabitating couples. The results indicate that the overall household balance sheets of never married females are stronger than married or cohabitating households, but weaker than never married male households. Ch. 2 concludes that never married women and never married men do not differ in their attitudes toward credit. However, never married women are more accepting of borrowing than married households. The findings in this chapter show that despite their greater acceptance to borrow, never married females have stronger balance sheet ratios than married households. Despite no differences in attitudes towards credit, never married

women have weaker household balance sheets than never married men, indicating that never married women are borrowing more.

Given the results, it seems surprising that never married females should be filing for bankruptcy at higher rates than married/cohabitating couples. Perhaps their lack of financial education and the advice they receive in bankruptcy counseling are causing the higher filing rates (Lefgren, McIntyre et al. 2010). Based on the overall debt situation in the US, debt and financial counseling is needed for all, starting in high school. In order to better address this issue, debt counseling and educational initiatives aimed at females would also help ameliorate this problem. Women need to be encouraged to take financial seminars and empowered to handle their own household finances.

Additionally, policy should focus on existing research to see if asset programs are working, since improving the asset gap would benefit the financial well-being of women in a variety of ways. Assets serve many financial purposes and lacking assets limits financial potential. Additionally, increased asset ownership by women would be useful, since assets provide future opportunities and may affect children, specifically their access to nutrition, health care, and education. The establishment of asset programs and incentives to reduce the financial vulnerability of women and provide financial security in old age should be important to policy makers given the current state of Social Security.

This research was a first attempt at identifying differences by gender. However, more research is needed to further understand what determines household balance sheet decisions. My research has looked at broad asset categories. A more focused evaluation of gender differences in debt may reveal patterns of asset choices, down payment and

leverage decisions. More research is needed to determine if women utilize different types of debt in different ways and how the decisions to utilize debt are made.

Additionally, gender-sensitive research needs to identify why never married women have high leverage ratios for their assets, but relatively the same monthly payments to income. Specifically identifying the patterns and proportions of gender asset ownership to debt and asset financing are needed. Understanding these motives provides valuable information for policy makers. More gender sensitive research is needed in order to better understand the debt position of women and the financial position of the balance sheets of the household through a gender lens.

CHAPTER 5

SUMMARY OF RESULTS, POLICY IMPLICATIONS, AND PLANS FOR FURTHER RESEARCH

The purpose of this chapter is to summarize results, policy implications and plans for further research.

Gender Differences in Attitudes towards Credit

When I compare never married women to all respondents, never married women are more accepting of most kinds of debt. This is consistent with conceptions of women as spendthrifts but not consistent with the conservative attitudes towards investment by women. However, when I look more specifically at gender by limiting the analysis to just never married women and never married men, there are no detectible gender differences in attitudes towards the use of credit.

These results are important because they indicate that never married women are not more conservative than married or cohabitating households. Married or cohabitating household are less vulnerable to economic shocks and generally have more discretionary income which would reduce the need to borrow for some purchases. Therefore, it may not be necessary for married/cohabitating households to borrow to purchase some assets that never married households would have to borrow for in order to acquire. In addition, the reference group of married households may be quite different than for never married households, which could affect the attitudes toward borrowing of those groups.

However, despite the vulnerability of never married women, they are just as accepting of borrowing as never married men. There are several plausible explanations for this. First, similar attitudes towards credit could be the result of a reference group of never married individuals. If never married women see other never married women and men borrowing to make purchases, then they, being associated with that reference group, could assimilate their credit philosophies. Secondly, the view of society on borrowing has changed over time, as described earlier. The same credit attitudes between never married women and never married men may be a sign that credit attitudes have converged, despite past research that indicates women's conservative preferences. The convergence could be the result of women becoming more financially independent over the last 20 years, as their relative status in society has improved.

Since the results were different than other research on risk, effective educational programs and credit initiatives will benefit from more research in gender differences in attitudes towards credit. Researchers need to understand specifically what factors, including economic, institutional, social, and psychological, affect attitudes of consumers towards credit of all consumers, by reference group. Specifically no research, as of yet, identifies if society affects women and men differently or if and/or how changes in attitudes towards credit have changed over time for women and men. It appears the married or cohabitating individuals feel differently about credit than never married individuals. Therefore, research needs to identify if and how the reference group or other institutional or social factors affect individuals and married/cohabitating households differently. For example, we do not know how the social cues from the reference group are assimilated by the individuals. Research needs to identify if men and women

experience the same level of connectedness to the reference group and any gender differences in how social cues are accepted from the reference group. Given that society has changed how they use credit over the past 20 years, it is also important to study how specific societal changes and events affected women and men attitudes towards credit over this time.

Previous research has identified that the reference group is a significant influence on attitudes towards credit. Reference groups can be researched several ways using the Survey of Consumer Finances. First, the issue of reference group can be researched using an age cohort group in place of age as a continuous variable. This will identify if an age range is affected by the cohort group. Secondly, we can determine if marital status has a different effect by sex. Specifically, we can evaluate if never married females are different than divorced females or separated females or married females. Finally, an income reference group can be used to determine how attitudes towards credit might vary at different income levels. It may be that the poor and the rich have different attitudes towards the use of credit.

Additional research in gender differences in attitudes towards credit will also benefit from more qualitative research through a heterodox approach. Detailed questionnaires about the institutions influencing the individuals will help identify more specific reference groups.

Gender Differences in Transaction Costs & Interest Rates

When I compare never married women to all respondents, never married women pay higher interest rates on credit card debt. However, when I look specifically at gender

by limiting the sample to never married women and never married men, there are no detectable gender differences in interest rate loan costs. This research is important because it indicates that, all else equal, never married women and never married men pay the same interest costs for the same loan. Therefore, never married women are not being financially disadvantaged by paying higher interest rates on loans. Given the level of financial difficulties that women encounter, interest rates are one area where never married women are equals to never married men.

When evaluating the time spent shopping for a loan, never married females spend more time than the population as a whole, but less time than never married men. Never married women may spend more time shopping for a loan than married/cohabitating couples because they do not feel as confident making financial decisions. Never married women may also feel like they need to spend more time shopping for a loan because they are more financially vulnerable than married/cohabitating couples. Finally, since a gender asset gap exists, never married women may not have as much experience shopping for a loan, therefore requiring more time. Given that never married women and never married men are paying the same interest rates on the same types of loans, it appears that never married women are doing just as good of a job as never married men in shopping for a loan, despite the fact that they are spending less time.

Again, educational initiatives aimed at improving financial knowledge will help all consumers make the best choices given their individual circumstances. Educational initiatives will ensure that those seeking loans know the variety of options available and the effects of the different loan features on both short-term and long-term cost of the loan. Getting a loan can be a daunting course of action and not a process one goes through

frequently. Therefore, consumers only have a few experiences in the process, limiting their practice and learning opportunities.

Future research on gender differences in loans need to focus on the process of obtaining a loan, the decision making process, and the priority of loan features. First, for robust results, a specific amount of time or a range of time spent shopping for a loan, as opposed to a relative response, is needed. Besides the amount of time, it is important to understand where individuals get information, where they take loans from, and how they make their decision. Specifically, it is important to understand the priority or importance of loan features. For example, the importance of specific loan features may vary by gender. These loan features may include, but are not limited to: closing costs, points paid, length of loan, variable vs. fixed rates of interest and length of time expect to be in loan. Women may choose to be more conservative and take out loans for longer periods of time, thereby reducing their monthly payment obligation. Women may also be more interested in reducing their short-term costs as opposed to long-term costs because they may not wish to draw down on their assets, which are relatively smaller in value. For example, women may have to make smaller down payments because they have fewer assets than men.

Gender Differences in the Household Balance Sheet

Finally, I show that despite their greater acceptance to borrow, never married females tend to have stronger balance sheet ratios than married/cohabitating households except for debt to assets and mortgage debt to assets. Despite no differences in attitudes towards credit, never married women have weaker household balance sheets than never

married men, indicating that never married women are borrowing more, relative to their available resources.

The high leverage ratios are particularly concerning for never married females. For one, research shows that women have fewer assets than men. My research indicates that never married women are borrowing more against these assets than married/cohabitating couples and never married men, making never married women more vulnerable to economic shocks. If they are borrowing more against their assets than married/cohabitating households, this means that they have less collateral left in cases of emergencies. This reduces the level of security that the asset provides because it makes it difficult to buffer against emergencies.

High levels of leverage also reduce the overall wealth of never married women. This means lower levels of both economic and political power for never married women. Low levels of wealth also reduce the bargaining power of never married women entering into marriage. Additionally, these high levels of leverage may have adverse financial repercussions, making it more difficult for women to continue to acquire assets in the future. This results in continued asset inequality over the life cycle, which further hinders women's financial security in old age.

In conclusion, these results do not indicate that never married females should be filing for bankruptcy at higher rates than married households. However, they may have reason to file at higher rates than never married males, particularly if they are receiving biased advice.

Policy should again center attention on educational initiatives, as well as focus on existing asset ownership programs to see if these incentives are improving the asset

ownership of women. Consumers should understand the health of their balance sheet, monthly budgeting, and the use of leverage in order to prevent foreclosure or repossession of assets. Adequate asset holdings will also reduce the risk of bankruptcy. If never married women are borrowing more against their assets than married/cohabitating households, this means that they have less collateral left in cases of emergencies, which makes it difficult to buffer against emergencies. However, given the high leverage ratios of never married women, they might not be able to use the asset to secure additional financing, which could limit their ability to recover from an adverse financial event.

High levels of leverage also reduce the overall wealth of never married women. This means lowered levels of both economic and political power for never married women. Low levels of wealth reduce the bargaining power of never married women entering into marriage. Additionally, these high levels of leverage may have adverse financial repercussions, making it more difficult for women to continue to acquire assets in the future. This results in continued asset inequality over the life cycle, which further hinders women's financial security in old age.

The household balance sheet needs to have a more focused evaluation of gender differences in debt to reveal patterns of asset financing, as there are more types of debt to consider. The Survey of Consumer Finances includes information of installment debt, revolving debt and other debt, which consists of loans against pensions, life insurance, and margin loans and other unclassified loans, which could include health care. Other data sources, like the Panel Study of Income Dynamics, should also be evaluated to identify if similar patterns exist in gender differences in household balance sheets.

Identifying patterns of gender differences in financing patterns is important for financial education and policy recommendations.

APPENDIX A

DEBT TO ASSET REGRESSIONS

Table 22. Never Married Respondents

	Total Debt/Total Assets		Mortgage Debt/Assets		Vehicle Debt/Assets		Credit Card Debt/ Assets		Education Debt/Assets	
<u>Sex</u>										
Never Married										
Female	0.0612	*	0.0340	*	-0.0090	**	-0.0015		0.0317	*
	0.0121		0.0095		0.0036		0.0045		0.0060	
<u>Demographics</u>										
Age of head of household	-0.0042		-0.0046	*	0.0019	**	0.0036	*	-0.0064	*
	0.0026		0.0020		0.0008		0.0010		0.0011	
Age squared	0.0000		0.0000	*	0.0000	**	0.0000	*	0.0000	*
	0.0000		0.0000		0.0000		0.0000		0.0000	
Total number of years of education that have been completed by head of household	-0.0064	*	-0.0070	*	-0.0022	*	-0.0047	*	0.0078	*
	0.0033		0.0020		0.0006		0.0014		0.0019	
Total number of children in household	-0.0483	*	0.0032		-0.0175	*	-0.0232	*	-0.0248	*
	0.0141		0.0093		0.0039		0.0088		0.0045	
Race/ethnicity of respondent - Black/African American	-0.0059		0.0083		0.0180	*	-0.0020		0.0029	
	0.0168		0.0132		0.0066		0.0102		0.0080	
Race - Hispanic	0.0674	*	0.0073		0.0057		0.0120		0.0133	
	0.0263		0.0163		0.0043		0.0089		0.0087	
Race - Asian/Other	0.0454	*	0.0611	*	0.0086	**	0.0108		-0.0127	*
	0.0167		0.0149		0.0035		0.0071		0.0075	
<u>Credit Attitudes</u>										
Ok to borrow money for car	-0.0775	*	-0.0659	*	-0.0037		-0.0002		0.0027	
	0.0166		0.0142		0.0029		0.0051		0.0085	
Ok to borrow money for education	0.0359	*	0.0134		0.0082	**	0.0195	*	-0.0043	
	0.0188		0.0151		0.0039		0.0070		0.0061	

Table 22 continued.

	Total Debt/Tot al Assets		Mortgage Debt/Assets		Vehicle Debt/Assets		Credit Card Debt/ Assets		Education Debt/Assets
Ok to borrow money for living expenses if income cut	0.0494 *		0.0274 *		0.0027		0.0146 *		0.0111
	0.0146		0.0110		0.0034		0.0069		0.0070
Ok to borrow money for luxury	-0.0033		-0.0069		-0.0030		0.0006		-0.0066
	0.0188		0.0219		0.0045		0.0075		0.0114
Ok to borrow money for vacation	-0.0292 *		-0.0259 *		-0.0133 *		0.0036		-0.0009
	0.0145		0.0117		0.0044		0.0054		0.0049
<u>Loan Costs</u>									
Interest Rate on mortgage	-0.0143		-0.0093 *		-0.0009		-0.0041 *		-0.0018
	0.0039		0.0030		0.0008		0.0019		0.0013
Interest Rate on car loan	0.0014		0.0051 *		-0.0040 *		-0.0010		0.0015 *
	0.0024		0.0019		0.0009		0.0009		0.0007
Interest Rate on credit cards	0.0013 *		0.0000		-0.0002		0.0007 *		0.0007
	0.0007		0.0005		0.0002		0.0003		0.0004
Interest Rate on education loan	0.0129 *		-0.0105 *		0.0019 ***		0.0037 *		0.0196 *
	0.0045		0.0029		0.0010		0.0019		0.0028
Moderate Shopping for Loan	0.0926 *		0.0299 *		0.0053 ***		0.0091		0.0360 *
	0.0182		0.0148		0.0030		0.0065		0.0090
Between Moderate & Great Deal of Time	0.0972 *		0.0314 *		0.0072 ***		0.0191 *		0.0158 *
	0.0192		0.0161		0.0038		0.0071		0.0071
Great Deal of Time Shopping for Loan	0.1136 *		0.0067		0.0126 *		0.0483 *		0.0183 *
	0.0252		0.0144		0.0047		0.0159		0.0067
<u>Loan Information</u>									
Length of Loan- mortgage	0.0015		0.0023 *		0.0005 **		0.0008 *		-0.0005
	0.0010		0.0008		0.0002		0.0004		0.0004
Loan to value - mortgage	0.6639 *		0.6427 *		-0.0365 *		-0.0171		0.0315 *
	0.0375		0.0312		0.0086		0.0167		0.0140
Length of Loan - vehicle	0.0031		-0.0078 *		0.0045 *		0.0111 *		-0.0005
	0.0058		0.0038		0.0015		0.0034		0.0013
Loan to value - vehicle	0.0935 *		0.0831 *		0.1314 *		-0.0429 *		-0.0761 *
	0.0308		0.0218		0.0201		0.0166		0.0151

Table 22 continued.

	Total Debt/Total Assets		Mortgage Debt/Assets		Vehicle Debt/Assets		Credit Card Debt/ Assets		Education Debt/Assets
Length of Loan - education	0.0057 *		0.0077 *		0.0019 *		0.0025 *		-0.0049 *
	0.0025		0.0017		0.0006		0.0014		0.0013
Is interest rate on mortgage adjustable?	0.0211		0.0185		-0.0019		0.0000		-0.0194 *
	0.0189		0.0136		0.0041		0.0086		0.0111
Has Private Mortgage Insurance	0.0013		0.0101		0.0071 **		0.0029		-0.0045
	0.0126		0.0111		0.0030		0.0050		0.0042
Take average financial risks	-0.0095		0.0497 *		-0.0011		-0.0181 *		-0.0397 *
	0.0204		0.0121		0.0049		0.0080		0.0129
Take above average financial risks	-0.0616 *		0.0288 *		-0.0163 **		-0.0418 *		-0.0408 *
	0.0254		0.0136		0.0070		0.0132		0.0158
Take substantial financial risks	-0.0731 *		-0.0621 *		-0.0110		-0.0307 *		-0.0014
	0.0283		0.0196		0.0071		0.0142		0.0161
<u>Credit Worthiness</u>									
Natural Log of total income	-0.0536 *		-0.0352 *		0.0035		0.0098 *		-0.0224 *
	0.0101		0.0063		0.0022		0.0045		0.0065
Household had any debt payments more than 60 days past due in last year	-0.0654 *	**	0.0813 *		-0.0301 **		-0.0685 *		-0.0391 *
	0.0395		0.0294		0.0133		0.0235		0.0151
Ever bankrupt	0.1368 *		0.0466 *		-0.0031		0.0739 *		0.0257 *
	0.0381		0.0176		0.0087		0.0263		0.0104
Been turned down for credit in last 5 yrs	0.1256 *		0.0167		0.0264 *		0.0582 *		0.0027
	0.0288		0.0148		0.0068		0.0186		0.0079
Constant	0.7850 *		0.5543 *		-0.0459 ***		-0.1439 *		0.3331 *
	0.1230		0.0796		0.0272		0.0520		0.0718
Adjusted R ²	0.8224		0.8271		0.5229		0.2180		0.1887

Note: Reported std. errors are linearized. Adjusted R² is averaged over five imputations.

*** $p < .10$, ** $p < .05$, * $p < .01$

Table 23. All Respondents

	Total Debt/ Total Assets		Mortgage Debt/ Assets		Vehicle Debt/ Assets		Credit Card Debt/ Assets		Edu- cation Debt/ Assets	
<u>Sex</u>										
Never Married Female	0.0205	**	0.0379	*	-0.0114	*	-0.0005		0.0006	
	0.0086		0.0069		0.0024		0.0027		0.0063	
Never Married Male	-0.0431	*	-0.0124	*	-0.0025		0.0054		0.0231	*
	0.0109		0.0070		0.0027		0.0065		0.0041	
<u>Demographics</u>										
Marital Status - Widowed	-0.0287	*	-0.0070	**	-0.0041	*	-0.0038	*	0.0110	*
	0.0050		0.0031		0.0011		0.0010		0.0036	
Marital Status - Divorced	0.0125	*	0.0104	*	-0.0037	*	0.0025	*	0.0034	
	0.0067		0.0034		0.0012		0.0015		0.0053	
Marital Status - Separated	-0.0349	*	-0.0082		-0.0077	*	-0.0059	*	0.0154	**
	0.0119		0.0089		0.0017		0.0024		0.0064	
Age of head of household	-0.0067	*	-0.0066	*	-0.0009	*	0.0010	*	0.0016	*
	0.0007		0.0006		0.0002		0.0002		0.0003	
Age squared	0.0000	*	0.0001	*	0.0000	**	0.0000	*	0.0000	**
	0.0000		0.0000		0.0000		0.0000		0.0000	
Total number of years of education that have been completed by head of household	-0.0001		-0.0015	*	-0.0014	*	0.0000	*	0.0027	*
	0.0007		0.0005		0.0002		0.0002		0.0004	
Total number of children in household	-0.0073	*	0.0028	**	-0.0026	*	-0.0015	*	0.0053	*
	0.0017		0.0012		0.0004		0.0004		0.0011	
Race/ethnicity of respondent - Black/African American	0.0007		0.0029		-0.0014		-0.0040	*	0.0040	
	0.0065		0.0051		0.0018	**	0.0016		0.0032	
Race - Hispanic	0.0447	*	0.0182	*	-0.0029	*	0.0027		0.0201	***
	0.0122		0.0047		0.0016		0.0019		0.0109	
Race - Asian/Other	0.0156	*	0.0241	*	-0.0012		-0.0010		0.0058	*
	0.0056		0.0051		0.0015		0.0020		0.0020	

Table 23 continued.

	Total Debt/ Total Assets		Mortgage Debt/ Assets		Vehicle Debt/ Assets		Credit Card Debt/ Assets		Edu- cation Debt/As sets
<u>Credit Attitudes</u>									
Ok to borrow money for car	-0.0029		-0.0094	*	0.0008		0.0020	*	0.0007
	0.0038		0.0029		0.0008		0.0008		0.0018
Ok to borrow money for education	0.0114	*	0.0011		0.0024	**	0.0017	*	0.0099
	0.0044		0.0032		0.0011		0.0008		0.0024
Ok to borrow money for living expenses if income cut	0.0051		0.0065	*	0.0000		0.0032	*	-0.0045
	0.0037		0.0023		0.0007		0.0008		0.0026
Ok to borrow money for luxury	-0.0017		-0.0047		0.0017		0.0053	*	0.0001
	0.0062		0.0054		0.0018		0.0026		0.0026
Ok to borrow money for vacation	0.0130	*	0.0028		0.0037	**	0.0072	*	-0.0072
	0.0048		0.0035		0.0016		0.0013		0.0025
<u>Loan Costs</u>									
Interest Rate on mortgage	-0.0024	**	0.0007		0.0002		0.0010		-0.0011
	0.0012		0.0008		0.0003		0.0006		0.0005
Interest Rate on car loan	-0.0012		-0.0007		0.0006	*	-0.0008	*	-0.0005
	0.0007		0.0006		0.0003		0.0002		0.0003
Interest Rate on credit cards	-0.0001		-0.0005	*	0.0001	*	0.0004	*	0.0000
	0.0002		0.0002		0.0001		0.0001		0.0001
Interest Rate on education loan	0.0117	*	0.0015	**	-0.0006	*	0.0012	*	0.0090
	0.0016		0.0008		0.0002		0.0004		0.0009
Moderate Shopping for Loan	0.0024		-0.0071	**	0.0023	*	0.0011		0.0024
	0.0047		0.0029		0.0009		0.0010		0.0032
Between Moderate & Great Deal of Time	-0.0021		-0.0051		0.0004		0.0014		-0.0003
	0.0052		0.0039		0.0010		0.0014		0.0028
Great Deal of Time Shopping for Loan	0.0045		-0.0026		0.0016		0.0035	*	-0.0011
	0.0058		0.0031		0.0010		0.0014		0.0045

Table 23 continued.

	Total Debt/ Total Assets		Mortgage Debt/ Assets		Vehicle Debt/ Assets		Credit Card Debt/ Assets		Edu- cation Debt/As sets	
<u>Loan Information</u>										
Length of Loan-mortgage	0.0010	*	0.0027	*	-0.0006	*	-0.0004	*	-0.0004	*
	0.0003		0.0003		0.0001		0.0001		0.0001	
Loan to value - mortgage	0.6181	*	0.5499	*	0.0133	*	0.0192	*	-0.0009	
	0.0173		0.0151		0.0030		0.0031		0.0043	
Length of Loan - vehicle	0.0002		-0.0028	*	-0.0010	**	0.0017	*	0.0026	*
	0.0017		0.0010		0.0005		0.0005		0.0012	
Loan to value - vehicle	0.1239	*	0.0230	*	0.1141	*	0.0047	*	-0.0120	*
	0.0099		0.0058		0.0037		0.0026		0.0065	
Length of Loan - education	0.0020	*	0.0007	*	-0.0001		0.0001		0.0010	*
	0.0006		0.0004		0.0001		0.0001		0.0003	
Is interest rate on mortgage adjustable?	-0.0034		0.0017		-0.0030	*	-0.0058	*	-0.0005	
	0.0051		0.0049		0.0011		0.0012		0.0018	
Has Private Mortgage Insurance	0.0255	*	0.0230	*	0.0015	**	-0.0002		0.0061	*
	0.0036		0.0031		0.0008		0.0010		0.0014	
Take average financial risks	-0.0009		-0.0068	*	-0.0001		0.0004		0.0044	
	0.0053		0.0026		0.0010		0.0011		0.0044	
Take above average financial risks	-0.0226	*	-0.0300	*	-0.0023	*	-0.0032	*	0.0051	
	0.0060		0.0037		0.0013		0.0013		0.0043	
Take substantial financial risks	0.0182		-0.0586	*	-0.0012		0.0061	*	0.0481	*
	0.0225		0.0079		0.0024		0.0032		0.0210	
<u>Credit Worthiness</u>										
Natural Log of total income	-0.0447	*	-0.0253	*	-0.0028	*	-0.0039	*	-0.0151	*
	0.0035		0.0013		0.0004		0.0006		0.0031	
Household had any debt payments more than 60 days past due in last year	0.0367	*	0.0220	*	0.0010		0.0155	*	-0.0178	*
	0.0107		0.0077		0.0025		0.0044		0.0041	
Ever bankrupt	0.0638	*	0.0152	*	0.0071	*	0.0022		0.0424	*
	0.0135		0.0043		0.0017		0.0024		0.0124	

Table 23 continued.

	Total Debt/ Total Assets		Mortgage Debt/ Assets		Vehicle Debt/ Assets		Credit Card Debt/ Assets		Edu- cation Debt/As sets
Been turned down for credit in last 5 yrs	0.0552	*	0.0340	*	0.0002		0.0091	*	-0.0017
	0.0069		0.0039		0.0016		0.0023		0.0048
<u>Constant</u>	0.7242	*	0.4634	*	0.0951	*	0.0082		0.1986
	0.0374		0.0216		0.0092		0.0075		0.0294
Adjusted R ²	0.6537		0.7244		0.4758		0.1002		0.0473

Note: Reported std. errors are linearized. Adjusted R² is averaged over five imputations.

$p < .10$ *** $p < .05$ ** $p < .01$ *

APPENDIX B

DEBT TO INCOME RATIO REGRESSIONS

Table 24. Never Married Respondents

	Debt / Income		Mortgage Debt / Income		Vehicle Debt / Income		Credit Card Debt / Income		Education Debt / Income	
<u>Sex</u>										
Never Married										
Female	0.7386	*	0.3468	**	0.0361	*	0.0223	**	0.2975	*
	0.1791		0.1604		0.0065		0.0112		0.0670	
<u>Demographics</u>										
Age of head of household	0.0690		0.0923	*	-0.0108	*	0.0219	*	-0.0638	*
	0.0615		0.0547		0.0022		0.0052		0.0129	
Age squared	-0.0009		-0.0010	*	0.0001	*	-0.0002	*	0.0004	*
	0.0006		0.0005		0.0000		0.0000		0.0001	
Total number of years of education	0.2028	*	0.1068	*	-0.0007		0.0008		0.0934	*
	0.0519		0.0388		0.0018		0.0041		0.0229	
Total number of children	0.2186		0.4649	*	-0.0648	*	-0.0539	*	-0.1255	*
	0.2692		0.2620		0.0083		0.0175		0.0403	
Race/ethnicity of respondent - Black/African American	-0.5783	**	-0.2991		0.0836	*	-0.0197		-0.1370	*
	0.2526		0.2196		0.0144		0.0198		0.0734	
Race - Hispanic	0.2026		-0.1420		0.0818	*	0.0853	**	-0.2209	**
	0.4632		0.3461		0.0281		0.0384		0.0913	
Race - Asian/Other	-1.3952	*	-0.9548	*	-0.0002		-0.0391		-0.0864	
	0.3407		0.3005		0.0099		0.0293		0.0760	
<u>Credit Attitudes</u>										
Ok to borrow money for car	-1.0676	*	-0.9348	*	0.0084		-0.0849	*	0.1644	*
	0.3772		0.3461		0.0113		0.0283		0.0895	
Ok to borrow money for education	-0.0492		-0.0440		-0.0470	*	0.0428	*	-0.0167	
	0.2550		0.2446		0.0105		0.0124		0.0612	

Table 24 continued.

	Debt / Income		Mortgage Debt / Income		Vehicle Debt / Income		Credit Card Debt / Income		Education Debt / Income	
Ok to borrow money for living expenses if income cut	0.8860	*	0.5874	*	-0.0281	*	0.0622	*	0.2103	*
	0.2493		0.2147		0.0062		0.0203		0.0798	
Ok to borrow money for luxury	0.8374	**	0.9533	*	0.0530	*	-0.0162		-0.2847	**
	0.3775		0.3296		0.0125		0.0228		0.1304	
Ok to borrow money for vacation	0.0333		-0.1186		-0.0081		0.0189		0.0098	
	0.2140		0.1653		0.0092		0.0155		0.0528	
<u>Interest Rates on Loans</u>										
Interest Rate on mortgage	-0.0604		-0.0598		0.0116	*	-0.0137	*	-0.0027	
	0.0592		0.0511		0.0028		0.0037		0.0138	
Interest Rate on car loan	-0.1450	*	-0.1198	*	-0.0163	*	-0.0022		-0.0062	
	0.0224		0.0201		0.0025		0.0015		0.0062	
Interest Rate on credit cards	0.0239	**	0.0039		-0.0004		0.0008		0.0162	*
	0.0114		0.0087		0.0005		0.0008		0.0053	
Interest Rate on education loan	0.2278	*	0.0154		0.0082	*	0.0048	*	0.1955	*
	0.0692		0.0554		0.0029		0.0028		0.0319	
Moderate Shopping for Loan	0.3963	*	-0.0547		0.0127		0.0052		0.3961	*
	0.2065		0.1534		0.0087		0.0149		0.1072	
Between Moderate & Great Deal of Time	0.7546	*	0.1181		-0.0861	*	0.0600	*	0.2466	*
	0.2453		0.1832		0.0096		0.0017		0.0808	
Great Deal of Time Shopping for Loan	0.8220	**	0.3753		-0.0503	*	0.1103	*	0.1380	**
	0.3714		0.3292		0.0107		0.0335		0.0684	
<u>Loan Information</u>										
Length of Loan - mortgage	0.0436	*	0.0644	*	-0.0029	*	0.0059	**	-0.0114	*
	0.0259		0.0234		0.0006		0.0023		0.0035	
Loan to value - mortgage	2.6362	*	1.7273	*	-0.0619	*	0.0146		0.4605	*
	0.6485		0.5433		0.0167		0.0552		0.1678	
Length of Loan - vehicle	-0.0265		-0.0077		0.0270	*	0.0085		-0.0168	
	0.0611		0.0562		0.0036		0.0060		0.0118	

Table 24 continued.

	Debt / Income		Mortgage Debt / Income		Vehicle Debt / Income		Credit Card Debt / Income		Education Debt / Income	
Loan to value - vehicle	1.0607	*	1.2449	*	0.3925	*	-0.0176		-0.5723	*
	0.3822		0.3056		0.0245		0.0284		0.1570	
Length of Loan - education	-0.0464		0.0302		0.0021	*	-0.0002		-0.0632	*
	0.0374		0.0275		0.0012		0.0027		0.0155	
Is interest rate on mortgage adjustable?	0.6760	*	0.6058	**	-0.0556	*	0.0379	**	-0.3858	*
	0.3748		0.2527		0.0120		0.0172		0.1285	
Has Private Mortgage Insurance	-1.2239	*	-0.9194	*	-0.0175	*	-0.0422	**	-0.1299	*
	0.2174		0.1910		0.0100		0.0169		0.0461	
Take average financial risks	-0.6362	**	-0.0994		-0.0063		0.0169		-0.5185	*
	0.3212		0.2343		0.0102		0.0227		0.1601	
Take above average financial risks	-0.3213		0.1024		0.0436	*	-0.0361	**	-0.4700	**
	0.3256		0.1763		0.0135		0.0159		0.1959	
Take substantial financial risks	-0.7970	**	-0.6095	**	-0.0002		-0.0151		-0.4140	**
	0.3981		0.2425		0.0151		0.0201		0.1760	
<u>Credit Worthiness</u>										
Natural Log of total income	-1.8848	*	-1.3837	*	-0.0147	**	-0.0861	*	-0.3434	*
	0.3453		0.3056		0.0063		0.0314		0.0792	
Household had any debt payments more than 60 days past due in last year	-1.1504	**	-0.1762		-0.0283		-0.1037	*	-0.5877	*
	0.5048		0.4452		0.0215		0.0329		0.1697	
Ever bankrupt	0.8816	*	0.5898	**	0.0513	*	0.0184		0.2347	*
	0.2922		0.2818		0.0194		0.0261		0.0853	
Been turned down for credit in last 5 yrs	0.1065		0.0280		0.0036		0.0457	*	-0.1591	**
	0.2292		0.1926		0.0094		0.0175	**	0.0735	
Constant	17.3796	*	12.2142	*	0.5128	*	0.3522	*	4.3347	*
	2.5314		2.1553		0.0930		0.2019		0.8311	
Adjusted R ²	0.2946		0.2799		0.7337		0.1925		0.1607	

Note: Reported std. errors are linearized. Adjusted R² is averaged over five imputations.

*** $p < .10$, ** $p < .05$, * $p < .01$

Table 25. All Respondents

	Debt / Income	Mortgage Debt / Income	Vehicle Debt / Income	Credit Card Debt / Income	Edu-cation Debt / Income
<u>Sex</u>					
Never married female	0.0974	0.2080	-0.0385 *	-0.0292 **	0.1340 ***
	0.1714	0.1294	0.0088	0.0121	0.0724
Never married male	-0.4085 *	-0.1165	-0.0310 *	-0.0443 *	-0.0792 *
	0.1053	0.0903	0.0056	0.0088	0.0216
<u>Demographics</u>					
Marital status - widowed	-0.0640	-0.2008 *	-0.0013	-0.0393 *	-0.0730 *
	0.1471	0.0581	0.0111	0.0056	0.0216
Marital status - divorced	-0.3246 *	-0.1561 **	-0.0108 ***	0.0038	-0.0495 **
	0.0795	0.0624	0.0058	0.0079	0.0213
Marital status - separated	-0.0140	-0.0323	-0.0471 *	0.0032	-0.0782 *
	0.2082	0.1663	0.0080	0.0034	0.0257
Age of head of household	0.0768 *	0.0321 *	0.0029 *	0.0085 *	-0.0075 *
	0.0125	0.0075	0.0009	0.0007	0.0025
Age squared	-0.0007 *	-0.0002 *	0.0000 *	-0.0001 *	0.0000 **
	0.0001	0.0001	0.0000	0.0000	0.0000
Total number of years of education that have been completed by head of household	0.1099 *	0.0634 *	-0.0017 **	0.0079 *	0.0155 *
	0.0110	0.0093	0.0007	0.0010	0.0027
Total number of children in household	-0.0045	0.0552 *	-0.0026	-0.0066 *	-0.0248 *
	0.2483	0.0214	0.0017	0.0019	0.0047
Race/ethnicity of respondent - Black/African American	-0.1459 **	0.0216 *	-0.0038	-0.0365 *	-0.0512 *
	0.0702	0.0591	0.0069	0.0059	0.0152
Race - Hispanic	0.6442 *	0.4800 *	0.0019	0.0163 ***	0.0101
	0.0988	0.0867	0.0062	0.0085	0.0133
Race - Asian/Other	0.2396 **	0.2727 *	-0.0079	0.0195 *	-0.0368 *
	0.0978	0.0857	0.0055	0.0054	0.0139

Table 25 continued.

	Debt / Income		Mortgage Debt / Income		Vehicle Debt / Income		Credit Card Debt / Income		Edu-cation Debt / Income	
<u>Credit Attitudes</u>										
Ok to borrow money for car	-0.1814	*	-0.1782	*	0.0016		-0.0092		0.0012	
	0.0525		0.0470		0.0036		0.0061		0.0064	
Ok to borrow money for education	-0.0623		-0.1096	*	-0.0179	*	-0.0029		0.0445	*
	0.0478		0.0412		0.0050		0.0050		0.0129	
Ok to borrow money for living expenses if income cut	-0.0103		0.0334		-0.0013		0.0236	*	-0.0336	*
	0.0460		0.0359		0.0033		0.0040		0.0116	
Ok to borrow money for luxury	-0.0726		-0.1021	*	0.0205	**	0.0167		-0.0158	
	0.0707		0.0610		0.0093		0.0112		0.0116	
Ok to borrow money for vacation	0.2423	*	0.1092	**	0.0336	*	0.0617	*	0.0105	
	0.0626		0.0518		0.0061		0.0069		0.0149	
<u>Interest Rates on Loans</u>										
Interest rate on mortgage	-0.0858	*	-0.0363	*	-0.0037	*	-0.0029	*	-0.0066	*
	0.0107		0.0089		0.0009		0.0010		0.0021	
Interest rate on car loan	-0.0569	*	-0.0039	*	0.0003		-0.0026	*	-0.0008	
	0.0115		0.0055		0.0018		0.0008		0.0013	
Interest rate on credit cards	0.0151	*	0.0068	*	0.0007	*	0.0023	*	0.0022	**
	0.0029		0.0020		0.0002		0.0003		0.0010	
Interest rate on education loan	0.0474	*	-0.0147	*	-0.0022	*	0.0071	*	0.0476	*
	0.0120		0.0086		0.0007		0.0016		0.0042	
Moderate shopping for loan	0.1030	*	0.0351		0.0092	**	0.0136	*	0.0169	
	0.0360		0.0298		0.0037		0.0046		0.0108	
Between moderate & great deal of time	0.2478	*	0.1665	*	-0.0027		0.0161	*	0.0498	*
	0.0523		0.0449		0.0039		0.0060		0.0132	
Great deal of time shopping for loan	0.5450	*	0.2922	*	0.0169	*	0.0374	*	0.0386	***
	0.0631		0.0453		0.0044		0.0061		0.0225	

Table 25 continued.

	Debt /		Mortgage		Vehicle		Credit		Edu-cation	
	Income		Debt /		Debt /		Card		Debt /	
			Income		Income		Debt /		Income	
							Income			
<u>Loan Information</u>										
Length of loan-	0.0351	*	0.0405	*	-0.0004	*	0.0000		-0.0009	**
mortgage	0.0028		0.0023		0.0002		0.0003		0.0004	
Loan to value -	2.7894	*	2.3509	*	0.0045		0.0776	*	-0.0095	
mortgage	0.1080		0.0824		0.0085		0.0094		0.0186	
Length of loan -	0.0952	*	0.0154		0.0040		0.0046	*	0.0165	**
vehicle	0.0281		0.0106		0.0028		0.0018		0.0068	
Loan to value -	-0.0492		-0.2115	*	0.4278	*	0.0200	*	-0.1010	*
vehicle	0.1020		0.0614		0.0139		0.0099		0.0378	
Length of loan -	0.0051		0.0091		-0.0001		-0.0003		-0.0004	
education	0.0095		0.0084		0.0006		0.0007		0.0016	
Is interest rate on										
mortgage										
adjustable?	0.9490	*	0.7126	*	0.0271	*	0.0030		0.0288	*
	0.0991		0.0863		0.0065		0.0062		0.0114	
Has private mortgage	-0.2785	*	-0.2141	*	-0.0111	*	-0.0213	*	0.0232	*
insurance	0.0450		0.0391		0.0034		0.0045		0.0077	
Take average	0.2238	*	0.0971	**	0.0103	**	0.0016		-0.0013	
financial risks	0.0697		0.0403		0.0050		0.0048		0.0241	
Take above average	0.0998		-0.0571		0.0023		0.0036		-0.0090	
financial risks	0.0727		0.0498		0.0050		0.0072		0.0207	
Take substantial	0.3081	*	-0.2134	*	0.0071		0.0491		0.1020	**
financial risks	0.1188		0.0753		0.0109		0.0157		0.0450	
<u>Credit Worthiness</u>										
Natural log of total	-0.9927		-0.6688	*	-0.0440	*	-0.0568	*	-0.0865	*
income	0.0730	*	0.0395		0.0044		0.0043		0.0157	
Household had any										
debt payments more										
than 60 days past										
due in last year	0.6382		0.5448	*	0.0151		0.0758	*	-0.0693	*
	0.1710		0.1586		0.0120		0.0173		0.0185	

Table 25 continued.

	Debt / Income	Mortgage Debt / Income	Vehicle Debt / Income	Credit Card Debt / Income	Edu- cation Debt / Income
Ever bankrupt	-0.0940 0.0871	-0.1491 * 0.0547	-0.0135 ** 0.0063	-0.0270 * 0.0057	0.1514 * 0.0586
Been turned down for credit in last 5 yrs	0.3845 * 0.0708	0.2110 * 0.0592	0.0008 0.0050	0.0342 * 0.0062	0.0196 0.0195
<u>Constant</u>	7.6437 * 0.5917	5.5245 * 0.3652	0.4890 * 0.0364	0.2936 * 0.0409	1.0332 * 0.1678
Adjusted R ²	0.2393	0.2933	0.4697	0.0962	0.0402

Note: Reported std. errors are linearized. Adjusted R² is averaged over five imputations.

p <.10 ***, p<.05 **, p <.01*

APPENDIX C

MONTHLY PAYMENTS TO MONTHLY INCOME REGRESSIONS

Table 26. Never Married Respondents

	Monthly Debt Payments / Monthly Income		Monthly Mortgage Payment / Monthly Income		Monthly Credit Card Payment/ Monthly Income		Monthly Vehicle Payment / Monthly Income		Monthly Education Payment / Monthly Income	
<u>Sex</u>										
Never married										
female	0.0300	**	0.0037		0.0067	**	0.0188	*	-0.0018	
	0.0159		0.0140		0.0034		0.0030		0.0012	
<u>Demographics</u>										
Age of head of household	0.0168	*	0.0090	**	0.0066	*	-0.0001		0.0005	
	0.0058		0.0045		0.0016		0.0005		0.0003	
Age squared	-0.0002	*	-0.0001	**	-0.0001	*	0.0000		0.0000	
	0.0001		0.0000		0.0000		0.0000		0.0000	
Total number of years of education	0.0079	*	0.0072	**	0.0002		0.0015	*	-0.0002	
	0.0042		0.0033		0.0012		0.0004		0.0001	
Total number of children	0.0087		0.0382	*	-0.0162	*	-0.0125	*	0.0035	*
	0.0265		0.0231		0.0052		0.0033		0.0021	
Race/ethnicity of respondent - Black/ African American	-0.0249		-0.0494	*	-0.0059		0.0378	*	0.0007	
	0.0218		0.0178		0.0059		0.0057		0.0013	
Race - Hispanic	0.0348		-0.0043		0.0256	**	0.0035		0.0031	
	0.0424		0.0343		0.0115		0.0033		0.0024	
Race - Asian/Other	-0.0805	**	-0.0684	*	-0.0117		0.0024		-0.0023	
	0.0317		0.0251		0.0088		0.0033		0.0016	
<u>Credit Attitudes</u>										
Ok to borrow money for car	-0.0802	**	-0.0350		-0.0255	*	-0.0192	*	-0.0007	
	0.0034		0.0277		0.0085		0.0052		0.0009	
Ok to borrow money for education	-0.0053		-0.0245		0.0128	*	0.0055		0.0020	**
	0.0238		0.0220		0.0037		0.0042		0.0008	

Table 26 continued.

	Monthly Debt Payments / Monthly Income		Monthly Mortgage Payment / Monthly Income		Monthly Credit Card Payment/ Monthly Income		Monthly Vehicle Payment / Monthly Income		Monthly Education Payment / Monthly Income	
Ok to borrow money for living expenses if income cut	0.0611	*	0.0488	*	0.0187	*	-0.0047	*	-0.0027	*
	0.0223		0.0172		0.0061		0.0024		0.0009	
Ok to borrow money for luxury	0.0880	*	0.0776	*	-0.0049		0.0208	*	0.0041	**
	0.0336		0.0271		0.0068		0.0047		0.0019	
Ok to borrow money for vacation	0.0233		-0.0062		0.0057		0.0076	*	0.0007	
	0.0178		0.0148		0.0047		0.0040		0.0008	
<u>Interest Rates on Loans</u>										
Interest rate on mortgage	0.0129	**	0.0176	*	-0.0041	*	-0.0003		0.0006	*
	0.0057		0.0052		0.0011		0.0009		0.0003	
Interest rate on car loan	-0.0125	*	-0.0093	*	-0.0006		-0.0026	**	-0.0002	
	0.0022		0.0016		0.0005		0.0011		0.0002	
Interest rate on credit cards	0.0021	**	0.0017	**	0.0025		0.0000		0.0000	
	0.0009		0.0008		0.0002		0.0002		0.0001	
Interest rate on education loan	0.0172	*	0.0090		0.0015	*	-0.0011		0.0038	*
	0.0062		0.0056		0.0008		0.0009		0.0008	
Moderate shopping for loan	-0.0088		0.0017		0.0016		-0.0073	*	0.0002	
	0.0163		0.0142		0.0045		0.0043		0.0009	
Between moderate & great deal of time	0.0242		0.0221		0.0180	*	-0.0073	**	-0.0054	*
	0.0198		0.0175		0.0052		0.0035		0.0016	
Great deal of time shopping for loan	0.0461		0.0352		0.0331	*	-0.0245	*	-0.0011	
	0.0348		0.0266		0.0101		0.0057		0.0012	
<u>Loan Information</u>										
Length of loan- mortgage	0.0043	*	0.0023		0.0018	**	0.0001		0.0002	*
	0.0025		0.0019		0.0007		0.0002		0.0001	
Loan to value - mortgage	0.1256	**	0.1381	*	0.0044		-0.0227	*	-0.0079	*
	0.0584		0.0452		0.0165		0.0066		0.0021	
Length of loan - vehicle	0.0173	*	-0.0059		0.0025		0.0216	*	0.0000	
	0.0058		0.0046		0.0018		0.0017		0.0003	
Loan to value - vehicle	0.1432	*	0.1099	*	-0.0053		0.0288	*	0.0016	
	0.0311		0.0251		0.0085		0.0078		0.0023	

Table 26 continued.

	Monthly Debt Payments / Monthly Income	Monthly Mortgage Payment / Monthly Income	Monthly Credit Card Payment/ Monthly Income	Monthly Vehicle Payment / Monthly Income	Monthly Education Payment / Monthly Income	
Length of loan - education	0.0022	-0.0001	-0.0001	0.0006	0.0023	*
	0.0029	0.0026	0.0008	0.0004	0.0006	
Is interest rate on mortgage adjustable?	0.0761 *	0.0684 *	0.0114 **	-0.0124 *	0.0048 **	
	0.0279	0.0259	0.0052	0.0039	0.0024	
Has private mortgage insurance	-0.0706 *	-0.0596 *	-0.0127 **	0.0002	0.0011	
	0.0197	0.0160	0.0051	0.0027	0.0011	
Take average financial risks	-0.0067	-0.0333 *	0.0051	0.0151 *	0.0039 *	
	0.0251	0.0195	0.0068	0.0043	0.0010	
Take above average financial risks	0.0032	-0.0131	-0.0108 **	0.0271 *	-0.0011	
	0.0195	0.0164	0.0048	0.0048	0.0012	
Take substantial financial risks	-0.0153	-0.0337	-0.0045	0.0177 *	-0.0025	
	0.0272	0.0237	0.0060	0.0060	0.0018	
<u>Credit Worthiness</u>						
Natural log of total income	-0.1494 *	-0.1118 *	-0.0258 *	-0.0122 *	-0.0014 *	
	0.0325	0.0237	0.0094	0.0019	0.0008	
Household had any debt payments more than 60 days past due in last year	-0.1353 *	-0.0521	-0.0311 *	-0.0161 **	-0.0246 *	
	0.0488	0.0436	0.0099	0.0078	0.0067	
Ever bankrupt	0.1075 *	0.0565 **	0.0055	0.0496 *	-0.0056 *	
	0.0309	0.0252	0.0008	0.0096	0.0015	
Been turned down for credit in last 5 yrs	0.0311 *	-0.0037	0.0137 *	0.0100 **	0.0077 *	
	0.0172	0.0168	0.0053	0.0046	0.0026	
Constant	1.1322 *	0.9351 *	0.1057 ***	0.1219 *	0.0021	
	0.2253	0.1731	0.0606	0.0227	0.0064	
Adjusted R ²	0.2713	0.3013	0.1925	0.7092	0.4586	

Note: Reported std. errors are linearized. Adjusted R² is averaged over five imputations.

*** $p < .10$, ** $p < .05$, * $p < .01$

Table 27. Married Respondents

	Monthly Debt Payments / Monthly Income		Monthly Mortgage Payment / Monthly Income		Monthly Credit Card Payment/ Monthly Income		Monthly Vehicle Payment / Monthly Income		Monthly Education Payment / Monthly Income
<u>Sex</u>									
Never married female	-0.0606	*	-0.0396	*	-0.0087	**	-0.0027		-0.0006
	0.0156		0.0125		0.0036		0.0038		0.0009
Never married male	-0.0622	*	-0.0322	*	-0.0133	*	-0.0081	*	-0.0011
	0.0116		0.0100		0.0026		0.0019		0.0009
<u>Demographics</u>									
Marital status - widowed	0.0226		0.0313		-0.0118	*	-0.0018		-0.0007 *
	0.0259		0.0208		0.0017		0.0050		0.0002
Marital status - divorced	-0.0370	*	-0.0326	*	0.0011		-0.0050	**	-0.0014 *
	0.0095		0.0074		0.0024		0.0020		0.0003
Marital status - separated	0.0119		0.0373		0.0010		-0.0173	*	-0.0005
	0.0285		0.0237		0.0100		0.0045		0.0004
Age of head of household	0.0144	*	0.0099	*	0.0025	*	0.0011	*	-0.0001 *
	0.0019		0.0016		0.0002		0.0004		0.0001
Age squared	-0.0001	*	-0.0001	*	0.0000	*	0.0000	*	0.0000 **
	0.0000		0.0000		0.0000		0.0000		0.0000
Total number of years of education that have been completed by head of household	0.0113	*	0.0091	*	0.0024	*	0.0004		0.0004 *
	0.0013		0.0011		0.0003		0.0004		0.0001
Total number of children in household	-0.0022		0.0007		-0.0020	*	0.0000		-0.0002
	0.0028		0.0023		0.0006		0.0007		0.0002
Race/ethnicity of respondent - Black/African American	0.0011		0.0018		-0.0110	*	0.0022		0.0019 **
	0.0094		0.0064		0.0018		0.0027		0.0010
Race - Hispanic	0.0764	*	0.0703	*	0.0049	***	0.0033		0.0002
	0.0123		0.0115		0.0025		0.0022		0.0005
Race - Asian/Other	0.0271	*	0.0298	*	-0.0058	*	0.0008		-0.0011 *
	0.0100		0.0084		0.0016		0.0015		0.0003

Table 27 continued.

	Monthly Debt Payments / Monthly Income		Monthly Mortgage Payment / Monthly Income		Monthly Credit Card Payment/ Monthly Income		Monthly Vehicle Payment / Monthly Income		Monthly Education Payment / Monthly Income	
<u>Credit Attitudes</u>										
Ok to borrow money for car	-0.0166	*	-0.0105	**	-0.0028		-0.0005		-0.0003	
	0.0063		0.0045		0.0018		0.0012		0.0003	
Ok to borrow money for education	-0.0007		0.0021		-0.0009		-0.0022		-0.0004	***
	0.0055		0.0043		0.0015		0.0014		0.0002	
Ok to borrow money for living expenses if income cut	-0.0036		-0.0111	**	0.0071	*	-0.0011		0.0005	**
	0.0057		0.0046		0.0012		0.0011		0.0002	
Ok to borrow money for luxury	0.0100		-0.0081		0.0050		0.0131	**	0.0014	***
	0.0101		0.0062		0.0034		0.0058		0.0007	
Ok to borrow money for vacation	0.0357	*	0.0086	***	0.0185	*	0.0087	*	-0.0004	
	0.0064		0.0047		0.0021		0.0020		0.0004	
<u>Interest Rates on Loans</u>										
Interest rate on mortgage	0.0047	*	0.0059	*	-0.0009	*	0.0003		0.0001	**
	0.0014		0.0011		0.0003		0.0005		0.0001	
Interest rate on car loan	-0.0004		-0.0049	*	-0.0008	*	0.0055	*	0.0001	
	0.0026		0.0016		0.0002		0.0015		0.0001	
Interest rate on credit cards	0.0017	*	0.0010	*	0.0007	*	0.0002	**	0.0000	
	0.0004		0.0003		0.0001		0.0001		0.0000	
Interest rate on education loan	0.0025	**	-0.0010		0.0021	*	-0.0011	*	0.0025	*
	0.0012		0.0009		0.0005		0.0002		0.0002	
Moderate shopping for loan	0.0131	*	0.0048		0.0041	*	-0.0006		0.0008	*
	0.0044		0.0033		0.0014		0.0011		0.0003	
Between moderate & great deal of time	0.0171	*	0.0094	**	0.0048	*	-0.0004		0.0011	***
	0.0056		0.0045		0.0018		0.0014		0.0007	
Great deal of time shopping for loan	0.0647	*	0.0466	*	0.0112	*	0.0050	*	0.0004	***
	0.0082		0.0066		0.0018		0.0016		0.0002	

Table 27 continued.

	Monthly Debt Payments / Monthly Income		Monthly Mortgage Payment / Monthly Income		Monthly Credit Card Payment/ Monthly Income		Monthly Vehicle Payment / Monthly Income		Monthly Education Payment / Monthly Income	
<u>Loan Information</u>										
Length of loan- mortgage	0.0018	*	0.0020	*	0.0000		-0.0003	*	0.0000	***
	0.0004		0.0004		0.0001		0.0001		0.0000	
Loan to value - mortgage	0.2268	*	0.2121	*	0.0233	*	-0.0103	**	0.0011	***
	0.0157		0.0140		0.0028		0.0041		0.0006	
Length of loan - vehicle	0.0146	*	0.0091	**	0.0014	**	0.0044	**	0.0001	
	0.0051		0.0038		0.0006		0.0020		0.0001	
Loan to value - vehicle	0.0178		-0.0609	*	0.0060	**	0.0634	*	-0.0010	
	0.0134		0.0108		0.0030		0.0038		0.0008	
Length of loan - education	0.0013		0.0001		-0.0001		0.0003	**	0.0011	*
	0.0008		0.0006		0.0002		0.0002		0.0001	
Is interest rate on mortgage adjustable?	0.0616	*	0.0562	*	0.0009		0.0031	**	0.0027	*
	0.0095		0.0081		0.0018		0.0015		0.0091	
Has private mortgage Insurance	-0.0240	*	-0.0166	*	-0.0064	*	-0.0023	**	0.0015	*
	0.0047		0.0038		0.0013		0.0011		0.0004	
Take average financial risks	0.0292	*	0.0227	*	0.0005		0.0000		0.0006	
	0.0102		0.0082		0.0014		0.0020		0.0004	
Take above average financial risks	0.0286	*	0.0157	**	0.0011		-0.0014		0.0001	
	0.0104		0.0076		0.0022		0.0020		0.0005	
Take substantial financial risks	0.0265	**	0.0007		0.0147	*	0.0013		-0.0016	*
	0.0120		0.0091		0.0047		0.0030		0.0006	
<u>Credit Worthiness</u>										
Natural Log of total income	-0.1349	*	-0.0950	*	-0.0170	*	-0.0189	*	-0.0011	*
	0.0119		0.0096		0.0013		0.0027		0.0002	
Household had any debt payments more than 60 days past due in last year	0.1120	*	0.0590	*	0.0227	*	0.0050		-0.0006	
	0.0213		0.0148		0.0052		0.0039		0.0009	
Ever bankrupt	-0.0403	*	-0.0283	*	-0.0081	*	-0.0032		-0.0020	*
	0.0080		0.0062		0.0017		0.0029		0.0004	

Table 27 continued.

	Monthly Debt Payments / Monthly Income		Monthly Mortgage Payment / Monthly Income		Monthly Credit Card Payment/ Monthly Income		Monthly Vehicle Payment / Monthly Income		Monthly Education Payment / Monthly Income	
Been turned down for credit in last 5 yrs	0.0515	*	0.0242	*	0.0103	*	0.0045	**	0.0008	
	0.0076		0.0061		0.0019		0.0018		0.0005	
<u>Constant</u>	0.9992	*	0.6819	*	0.0881	*	0.1928	*	0.0108	*
	0.0903		0.0743		0.0123		0.0192		0.0021	
Adjusted R ²	0.2636		0.2454		0.0940		0.3982		0.3678	

Note: Reported std. errors are linearized. Adjusted R² is averaged over five imputations.

p <.10 ***, p<.05 **, p <.01*

REFERENCES

- Arrow, K. J., and J. W. Pratt. "Risk Aversion in the Small and in the Large." *Econometrica*, Bd 32 (1964): 122-136.
- Athreya, K. "Shame as It Ever Was: Stigma and Personal Bankruptcy." *Federal Reserve Bank of Richmond Economic Quarterly* 90, no. 2 (2004): 1-19.
- Bajtelsmit, V. L., and A. Bernasek. "Why Do Women Invest Differently Than Men." *Financial Counseling and Planning* 7, no. 1 (1996): 1-10.
- Barnes, S., and G. Young. "The Rise in Us Household Debt: Assessing Its Causes and Sustainability." *WORKING PAPER SERIES-BANK OF ENGLAND* (2003).
- Benjamin, D. J., J. J. Choi, and A. Strickland. "Social Identity and Preferences." *NBER working paper* (2007).
- Bernasek, A., and S. Shwiff. "Gender, Risk, and Retirement." *Journal of Economic Issues* 35, no. 2 (2001): 345-356.
- Berenthal, M. J., D. Crockett, and R. L. Rose. "Credit Cards as Lifestyle Facilitators." *Journal of Consumer Research* 32, no. 1 (2005): 130-145.
- Beshears, J., and D. Bergstresser. "Who Selected Adjustable-Rate Mortgages? Evidence from the 1989-2007 Surveys of Consumer Finances." (2009).
- Bittman, M, and J Wajcman. "Rush Hour: The Character of Leisure Time and Gender Equity, The." *Soc. F.* 79 (2000): 165.
- Blau, F. D., M. A. Ferber, and A. E. Winkler. *The Economics of Women, Men, and Work*. Vol. 4: Prentice Hall Englewood Cliffs, NJ, 2002.
- Blau, FD. "Trends in the Well-Being of American Women, 1970-1995." *Journal of Economic Literature* 36, no. 1 (1998): 112-165.
- Bostic, R., S. Gabriel, and G. Painter. "Housing Wealth, Financial Wealth, and Consumption: New Evidence from Micro Data." *Regional Science and Urban Economics* 39, no. 1 (2009): 79-89.

- Brito, D. L., and P. R. Hartley. "Consumer Rationality and Credit Cards." *Journal of Political Economy* 103, no. 2 (1995): 400-433.
- Brown, S., K. Taylor, and S. Wheatley Price. "Debt and Distress: Evaluating the Psychological Cost of Credit." *Journal of Economic Psychology* 26, no. 5 (2005): 642-663.
- Bucks, B., and K. Pence. "Do Borrowers Know Their Mortgage Terms?" *Journal of Urban Economics* 64, no. 2 (2008): 218-233.
- Byrnes, J. P., D. C. Miller, and W. D. Schafer. "Gender Differences in Risk Taking: A Meta-Analysis." *Psychological bulletin* 125 (1999): 367-383.
- Calder, L. *Financing the American Dream: A Cultural History of Consumer Credit*. Princeton Univ Pr, 2001.
- Calem, P. S., M. B. Gordy, and L. J. Mester. "Switching Costs and Adverse Selection in the Market for Credit Cards: New Evidence." *Journal of Banking & Finance* 30, no. 6 (2006): 1653-1685.
- Campbell, J. Y. "Household Finance." *The Journal of Finance* 61, no. 4 (2006): 1553-1604.
- Carlin, J. B., J. C. Galati, and P. Royston. "A New Framework for Managing and Analyzing Multiply Imputed Data in Stata." *Stata Journal* 8, no. 1 (2008): 49-67.
- Carlin, J. B., N. Li, P. Greenwood, and C. Coffey. "Tools for Analyzing Multiple Imputed Datasets." *The Stata Journal* 3, no. 3 (2003): 226-244.
- Charles, K., E. Hurst, and M. Stephens. "Exploring Racial Differences in Vehicle Loan Rates." (2006).
- Chatterjee, S., J. Goetz, and L. Palmer. "An Examination of Short-Term Borrowing in the United States."
- _____. "An Examination of Short-Term Borrowing in the United States." *Global Journal of Business Research* 3, no. 2 (2009).
- Chien, YW, and SA Devaney. "The Effects of Credit Attitude and Socioeconomic Factors on Credit Card and Installment Debt." *Journal of Consumer Affairs* 35, no. 1 (2001): 162-179.

- Cynamon, B. Z., and S. M. Fazzari. "Household Debt in the Consumer Age: Source of Growth—Risk of Collapse." *Capitalism and Society* 3, no. 2 (2008): 3.
- Dawsey, AE, and LM Ausubel. "Informal Bankruptcy." (2004).
- Deere, C. D., and C. R. Doss. "The Gender Asset Gap: What Do We Know and Why Does It Matter?" *Feminist Economics* 12, no. 1 (2006): 1-50.
- Dey, S., R. Djoudad, and Y. Terajima. "A Tool for Assessing Financial Vulnerabilities in the Household Sector." *Bank of Canada Review (Summer)* (2008): 45-54.
- Doss, C., C. Grown, and C. D. Deere. "Gender and Asset Ownership: A Guide to Collecting Individual-Level Data." *Gender and Development* (2008).
- Durkin, T. A. "Credit Cards: Use and Consumer Attitudes, 1970-2000." *Federal Reserve Bulletin*, no. Sep (2000): 623-634.
- Durkin, T. A., K. Ord, and D. A. Walker. "American Credit Growth." (2009).
- Dynan, K. E. "Changing Household Financial Opportunities and Economic Security." *Journal of Economic Perspectives* 23, no. 4 (2009): 49-68.
- Dynan, K. E., and D. L. Kohn. "The Rise in Us Household Indebtedness: Causes and Consequences." *Finance and Economics Discussion Series* 37 (2007).
- Eckel, C. C., and P. J. Grossman. "Men, Women and Risk Aversion: Experimental Evidence." *Handbook of experimental economics results* 1 (2008): 1061-1073.
- Eckel, C., and P. Grossman. "Differences in Economic Decisions of Men and Women." *Handbook of Experimental Results, Amsterdam: Elsevier* (1999).
- Eckel, CC, and PJ Grossman. "Men, Women and Risk Aversion: Experimental Evidence." *Handbook of experimental economics results* 1 (2008): 1061-1073.
- Eichner, M.J., D. Kohn, and M. Palumbo. "Financial Statistics for the United States and the Crisis: What Did They Get Right, What Did They Miss, and How Should They Change?" *Finance and Economics Discussion Series* (2010).
- Fay, S., E. Hurst, and M. J. White. "The Household Bankruptcy Decision." *American Economic Review* 92, no. 3 (2002): 706-718.
- Fisher, J. D., and A. C. Lyons. "Till Debt Do Us Part: A Model of Divorce and Personal Bankruptcy." *Review of Economics of the Household* 4, no. 1 (2006): 35-52.

- Floro, MS, and M Miles. "Time Use, Work and Overlapping Activities: Evidence from Australia." *Cambridge Journal of Economics* 27, no. 6 (2003): 881.
- Friend, I., and M. E. Blume. "The Demand for Risky Assets." *The American Economic Review* 65, no. 5 (1975): 900-922.
- Garcia, G. "Credit Cards: An Interdisciplinary Survey." *Journal of Consumer Research* 6, no. 4 (1980): 327-337.
- Gärling, T., E. Kirchler, A. Lewis, and F. Van Raaij. "Psychology, Financial Decision Making, and Financial Crises." *Psychological Science in the Public Interest* 10, no. 1 (2009): 1.
- Green, R. K., and S. Wachter. "The Housing Finance Revolution." 30: Wiley Online Library, 2007.
- Gross, D. B., and N. S. Souleles. "Consumer Response to Changes in Credit Supply: Evidence from Credit Card Data." *Center for Financial Institutions Working Papers* (2001): 01-10.
- Hallahan, T. A., R. W. Faff, and M. D. McKenzie. "An Empirical Investigation of Personal Financial Risk Tolerance." *Financial Services Review* 13, no. 1 (2004): 57-78.
- Hansen, Mary Eschelbach, and Bradley A. Hansen. "Legal Rules and Bankruptcy Rates: Historical Evidence from the States." American University Department of Economics Working Paper Series, no. No. 2006-16 (2006).
- Hilgert, M. A., J. M. Hogarth, and S. G. Beverly. "Household Financial Management: The Connection between Knowledge and Behavior." *Federal Reserve Bulletin*, no. Jul (2003): 309-322.
- Jaccard, J., and R. Turrisi. "Interaction Effects in Multiple Regression, Quantitative Applications in the Social Sciences 07-72." Sage, 2003.
- Jianakoplos, N. A., and A. Bernasek. "Are Women More Risk Averse?" *Economic Inquiry* 36, no. 4 (2007): 620-630.
- Johnson, K. "Convenience or Necessity? Understanding the Recent Rise in Credit Card Debt." *Working Paper Finance and Economics Discussion Series* (2004).

- Kennickell, A. B. "Multiple Imputation in the Survey of Consumer Finances." Citeseer, 1998.
- Kennickell, Aurther B. "Codebook for the 2007 Survey of Consumer Finances." *Washington DC: Board of Governors of the Federal Reserve System*, no. <http://www.federalreserve.gov/pubs/oss/oss2/2007/scf2007docs.html> (2009).
- Kerr, S., and L. Dunn. "Consumer Search Behavior in the Changing Credit Card Market." *Journal of Business and Economic Statistics* 26, no. 3 (2008): 345-353.
- Kowalewski, K. J. "Personal Bankruptcy: Theory and Evidence." *Economic Review*, no. Spr (1982): 1-29.
- Lee, J. "Racial/Ethnic Disparities in Household Debt Repayment." The Ohio State University, 2009.
- Lee, J., and J. M. Hogarth. "Returns to Information Search: Consumer Mortgage Shopping Decisions." *Financial Counseling and Planning* 10, no. 1 (1999): 49-66.
- Lee, K. J., and J. B. Carlin. "Multiple Imputation for Missing Data: Fully Conditional Specification Versus Multivariate Normal Imputation." *American journal of epidemiology* 171, no. 5 (2010): 624.
- Lefgren, L., and F. McIntyre. "Explaining the Puzzle of Cross State Differences in Bankruptcy Rates." *The Journal of Law and Economics* 52 (2009).
- Lefgren, L., F. L. McIntyre, and M. Miller. "Or 13: Are Client or Lawyer Interests Paramount?" *The BE Journal of Economic Analysis & Policy* 10, no. 1 (2010): 82.
- Li, K. H., X. L. Meng, T. E. Raghunathan, and D. B. Rubin. "Significance Levels from Repeated P-Values with Multiply-Imputed Data." *Statistica Sinica* 1, no. 1 (1991): 65-92.
- Lindamood, S., S. D. Hanna, L. Bi, J. M. HOGARTH, D. E. GETTER, and S. J. HUSTON. "Using the Survey of Consumer Finances: Some Methodological Considerations and Issues." *Journal of Consumer Affairs* 41, no. 2 (2007): 195-222.
- Livingstone, S. M., and P. K. Lunt. "Predicting Personal Debt and Debt Repayment: Psychological, Social and Economic Determinants." *Journal of Economic Psychology* (1992).

- MacDonald, M, S Phipps, and L Lethbridge. "Taking Its Toll: The Influence of Paid and Unpaid Work on Women's Well-Being." *Feminist Economics* 11, no. 1 (2005): 63-94.
- MacGregor, D. G., P. Slovic, M. Berry, and H. R. Evensky. "Perception of Financial Risk: A Survey Study of Advisors and Planners." *Journal of Financial Planning* 12, no. 8 (1999): 68-86.
- Malmendier, U., and S. Nagel. "Depression Babies: Do Macroeconomic Experiences Affect Risk-Taking?" *NBER working paper* (2009).
- Mann, R. J. "Bankruptcy Reform and the Sweat Box of Credit Card Debt." *U. Ill. L. Rev.* 2007 (2007): 375.
- Mayer, C., and R. G. Hubbard. "House Prices, Interest Rates, and Mortgage Market Meltdown." *Unpublished Manuscript, Columbia Business School* (2008).
- McConnell, M., R. Peach, and A. Al-Haschimi. "After the Refinancing Boom: Will Consumers Scale Back Their Spending?" *Current Issues in Economics and Finance* 9, no. 12 (2003): 1-7.
- Merskin, D. "The Show for Those Who Owe: Normalization of Credit on Lifetime's Debt." *Journal of Communication Inquiry* 22, no. 1 (1998): 10.
- Mian, A.R., and A. Sufi. "House Prices, Home Equity-Based Borrowing, and the US Household Leverage Crisis." National Bureau of Economic Research Cambridge, Mass., USA, 2009.
- Miller, M. M. "Who Files for Bankruptcy? State Laws and the Characteristics of Bankrupt Households." (2008).
- Norton, C. M. "The Social Psychology of Credit." *Credit World* 82, no. 1 (1993): 18-22.
- Nugent, R. "Small Loan Debt in the United States." *Journal of Business of the University of Chicago* 7, no. 1 (1934): 1-21.
- Olney, M. L. "Avoiding Default: The Role of Credit in the Consumption Collapse of 1930*." *Quarterly Journal of Economics* 114, no. 1 (1999): 319-335.
- Olney, ML. "Buy Now, Pay Later." *Chapel Hill: University of North Carolina* (1991).
- Park, S. "The Determinants of Consumer Installment Credit." *Review*, no. Nov (1993): 23-38.

- Pennington Cross, A., and G. Ho. "The Termination of Subprime Hybrid and Fixed Rate Mortgages." *Real Estate Economics* 38, no. 3 (2010): 399-426.
- Phelps, E. S. "The Statistical Theory of Racism and Sexism." *The American Economic Review* 62, no. 4 (1972): 659-661.
- Powell, M., and D. Ansic. "Gender Differences in Risk Behaviour in Financial Decision-Making: An Experimental Analysis." *Journal of Economic Psychology* 18, no. 6 (1997): 605-628.
- Pratt, J. W. "Risk Aversion in the Small and in the Large." *Econometrica: Journal of the Econometric Society* 32, no. 1 (1964): 122-136.
- Prince, M. "Women, Men and Money Styles." *Journal of Economic Psychology* 14, no. 1 (1993): 175-182.
- Rhee, E. Y. "Determinants of Consumer Bankruptcy: Evidences from the Panel Study of Income Dynamics (Psid), 1984--1995." *ETD Collection for Purdue University* (2001).
- Rubin, D. B. *Multiple Imputation for Nonresponse in Surveys*. Vol. 519: Wiley Online Library, 1987.
- Rutherford, L. G., and S. A. DeVaney. "Utilizing the Theory of Planned Behavior to Understand Convenience Use of Credit Cards." *Journal of Financial Counseling and Planning Volume* 20, no. 2 (2009): 49.
- Schubert, R, M Brown, M Gysler, and HW Brachinger. "Financial Decision-Making: Are Women Really More Risk-Averse?" *American Economic Review* 89, no. 2 (1999): 381-385.
- Seguino, S, and MS Floro. "Does Gender Have Any Effect on Aggregate Saving? An Empirical Analysis." *International Review of Applied Economics* 17, no. 2 (2003): 147-166.
- StataCorp. "Stata Multipleimputation Reference Manual Release 11
" A Stata Press Publication StataCorp LP College Station, Texas (2009).
- Sullivan, T., and E. Warren. "More Women in Bankruptcy." *American Bankruptcy Institute* (1999).
- _____. "Women in Bankruptcy." *American Bankruptcy Institute Journal* (1999).

Warren, E, JL Westbrook, and TA Sullivan. "Less Stigma or More Financial Distress: An Empirical Analysis of the Extraordinary Increase in Bankruptcy Filings." *Standord Law Review* 59, no. 2 (2006).

Watkins, J. P. "Corporate Power and the Evolution of Consumer Credit." *Journal of Economic Issues* 34, no. 4 (2000): 909-932.

Westbrook, J. L., E. Warren, and T. A. Sullivan. "Less Stigma or More Financial Distress: An Empirical Analysis of the Extraordinary Increase in Bankruptcy Filings." *Stanford law review* 59, no. 2 (2006): 212-256.

White, M. "Why Don't More Households File for Bankruptcy?" *Journal of Law Economics and Organization* 14 (1998): 205-231.

White, M. J. "Bankruptcy Reform and Credit Cards." *The Journal of Economic Perspectives* (2007): 175-200.

Whitehouse, Mark. "Americans Pare Down Debt." *Wall Street Journal*, Friday, March 12, 2010 2010, A1, A6.

Zywicki, T. J. "The Economics of Credit Cards." *Working Paper* (2010).