

ESSAYS ON HOUSEHOLD DEMAND FOR CREDIT CARDS, BANKRUPTCY
AND OVER-SPENDING.

by

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A Dissertation

Submitted in Partial Fulfillment of the Requirements for the

Doctor of Philosophy Degree

Department of Economics
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DISSERTATION APPROVAL

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July 2nd, 2010

AN ABSTRACT OF THE DISSERTATION OF

SOFYAN YOSOF AZAIZEH, for the Doctor of Philosophy degree in ECONOMICS,
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TITEL: ESSAYS ON HOUSEHOLD DEMAND FOR CREDIT CARDS,
BANKRUPTCY AND OVER-SPENDING.

MAJOR PROFESSOR: Dr. Scott Gilbert

Studying household finance and behavior is important not only for understanding the micro level behavior, but also to have a better understanding of the whole economy. The study of household behavior become even more important after the 2007 housing crises, and the giant effect it had (and is still having) on Wall Street and the whole US and global economy. This dissertation is an attempt to understand some of the household behavior: how does the new internet era affect the demand for credit cards, which attitudes influence the household's decision to file bankruptcy, and whether expenditure habits encouraged overspending. The study will use the micro level data provides by Survey of Consumer Finance SCF2007.

In the first chapter, the study focuses on the effect of having internet access on household demand for credit cards, controlling for standard price, income effects and other financial and demographic variables. The internet changed the way consumer shops, with more information about the product, the market and the price. E-Commerce retail sales grew on average of 22% a year over the past decade; in the second quarter of 2009 it reached \$32.4 billion. The study found that households who have access to the

internet, carry around \$862 more on their credit card balance, in average, than households who have no access to the internet.

The second chapter investigates the effects of borrowing and saving attitudes on household decision to file for personal bankruptcy. The total non-commercial bankruptcy filings increased from 560,682 cases in 2006 to 784,079 in 2007. This increase continued through 2008 and the first quarter of 2009, with 1,031,443 cases filed in 2008 and 304,228 in the first three months of 2009. The study results suggest that borrowing and saving attitudes have no effect of household decision to file for bankruptcy except for paying credit card balance in full every month.

The third chapter studies the relationship between eating out “Food-Away-From-Home” and overspending. Since 19% of household in the US are spending more than their income. The average for the past nine years (2000-2008) was 1.6%. Compared to other industrialized countries, the US had one of the worst personal saving rates during the past twenty years¹. The study found that eating out does not encourage overspending. On the contrary, the higher the ratio of FAFH to total food expenditures the less likely household will overspend.

¹ National Economic Trend, Cross-Country Personal Saving Rate, Federal Reserve Bank of St Louis, May 2006.

DEDICATION

to

My father (May Allah be blessed with him)

My Mother

My brothers and sisters

My Reem and My Rama

ACKNOWLEDGMENT

I would like to start by thanking GOD for giving me the strength, the health and the ability to reach to this point. Then my thanks go to Dr. Scott Gilbert, whom I wouldn't have done it with his help, support and guidance. Next, I would like to thank each and every member of the my committee: Dr. Kevin Sylwester, Dr. Richard Grabowski, Dr. Zsolt Becsi and Dr. Abdel-Razzaq Mugdadi. Not to forget Dr. Paul B. Trescott for his valuable comments and suggestions, Sandy and Nancy for their assistant and support.

My thanks go to the one I was hoping he will be here with me today, the one who inspired me to follow my dreams, to my late father (may Allah be pleased with him). My mother, I would not have done it without her prayers. My Family: my brothers, my sisters, my nephews and my nieces, and to my American parents: Sid and Sharon Mitchell.

My grateful thanks go to the one who believed in me, who stood right next to me in every step with endless support, to my love and inspiration, to my wife Reem.

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CHAPTER 1

INTERNET ACCESS AND HOUSEHOLDS' DEMAND FOR CREDIT CARDS.

*“Credit cards are habit forming. It is very easy to pull out a piece of plastic, swipe it through the register and buy something you couldn't afford otherwise.”*²

1.1 Introduction:

A Credit Card, or the piece of magnetic plastic that 73% of Americans carry in their pocket³, is a financial tool that allows the cardholder to borrow money for purchases or as a cash advance, up to a predetermined limit set by the card issuer (the bank or the financial institution that issued the card), if the money is repaid in full during the grace period (3-4 weeks after the statement closing date), then no interest (stated as an annual percentage rate, or APR) will be charged: otherwise a finance charge on the carried balance will apply in accordance with the Cardholder Agreement.

The credit card loan could be carried for a long period of time, if the cardholder chooses to pay only the minimum payment every month. Some credit cards may offer incentives and other features, such as: frequent flier miles, car rental insurance, additional warranty coverage for the items purchased, and rebates (money back) on purchases. Credit cards offer convenient transactions; they also allow the cardholder to make purchases over the telephone and via the internet.

One of the biggest advantages of buying over the internet is that it saves the consumer significant time and effort. It allows the consumer to buy and compare prices

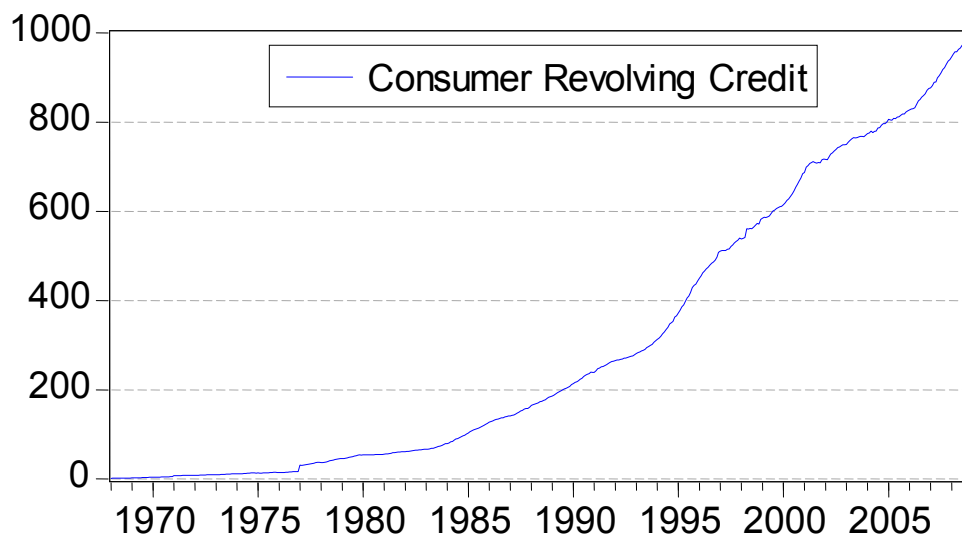
² <http://www.creditorweb.com/articles/credit-card-usage-explained.html>

³ Changes in U.S. Family Finances from 2004 to 2007: Evidence from the Survey of Consumer Finances.

across stores on his own convenient time, since online stores are open for business 24/7 and all over the world. Moreover, buying over the internet offers a great deal of privacy. No one needs to know what store you are shopping at, nor what product you are buying.

1.2 The U.S. Credit Market and E-Commerce:

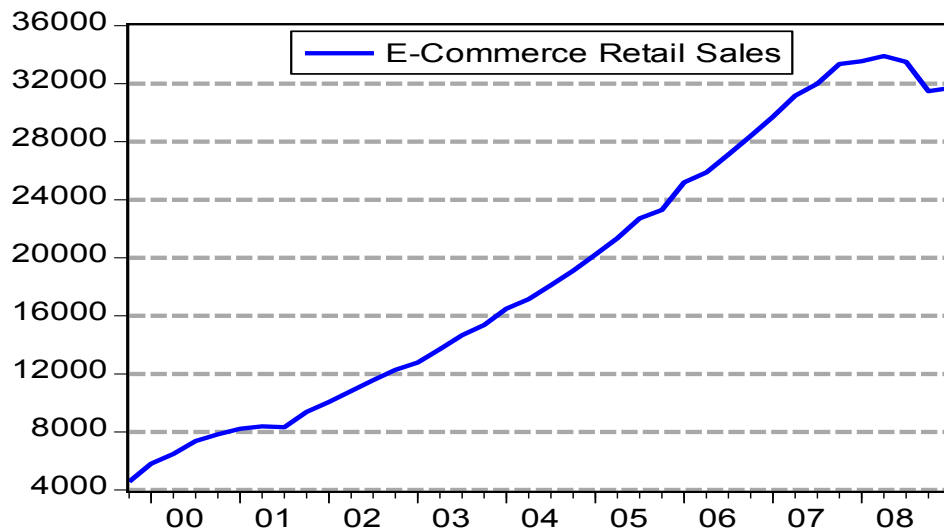
Over the last thirty years, the credit card has evolved into one of the most accepted, convenient, and profitable financial products, not only in the US, but also all over the world. Credit cards have also become the primary source of unsecured open-end revolving credit, and they have largely replaced the installment-purchase plans. Consumer revolving credit, of which credit card debt is the main component, increased from \$184.6 billion dollars in 1988 to \$581.4 in 1998 (see graph 1.1), and it kept rising during the past decade where it reached \$976.1 billion in Oct. of 2008.



Source: Consumer Credit, Federal Reserve Statistical Release, G19.

Figure 1.1: Consumer Revolving Credit

The rapid growth of the credit card business evidences the card's importance to the financial population, including consumers, merchants, and issuing banks. Although the percentage of families with a credit card decreased from 74.9 to 73% between 2004 and 2007, the percentage of these families who carried a credit card balance increased from 58% in 2004 to 60.3% in 2007. Moreover, between 2004 and 2007, the mean balance for those carrying a balance increased 30.4 % and reached \$7,300, and the median increased by 25.0%, to \$3,000.⁴



Source: U.S. Census Bureau, Service Sector Statistics Division.

Figure 1.2: E-Commerce Retail Sales

E-commerce retail sales have grown an average of 22 percent annually over the past decade. In the second quarter of 2009⁵, E-commerce sales were \$32.4 billion, which

⁴ Changes in U.S. Family Finances from 2004 to 2007: Evidence from the Survey of Consumer Finances.

⁵ Seasonally adjusted, the 2nd Quarter 2009 Retail E-Commerce Sales Report, U.S. Census Bureau, Aug. 17, 2009.

accounted for 3.6 percent of total U.S. sales. Graph (1.2)⁶ shows the rapid increase in E-commerce retail sales in the United States over the last ten years. As of Aug. 2009, the internet users in the U.S. were 227.7 million, which account for 74.1% of the whole population. On average, the number of internet users has grown by 8.1% a year since 2000⁷.

The data from both consumer revolving credit and consumer internet usage showed that they both rapidly increased in the past decade, but the question is: did the internet encourage consumers to carry more revolving credit card balance?

1.3 Literature Review

Both income and wealth have a positive effect on credit card limits. The credit card limit, not the debt, affects the demand responsiveness in the credit cards market, Castronova and Hagstorm, 2004, assumed that credit demand has two stages: first, the card issuer sets the consumer limit; second: the consumer decides how much of that limit he will be borrowing. They used two approaches (nested Tobit and 2SLS) to estimate the demand for limits, they found that the own price elasticity is about -0.4, so a 1% increase in the interest rate will decrease the limit by 0.4%.

Raising credit card limits leads to an increase in credit card debt (Gross and Souleles, 2000). The paper investigated the effect of the credit supply by using panel data of hundreds of thousands of credit card accounts and time periods of 24-36 months. The

⁶ Author's calculations based on E-Commerce Retail Sales Data (Aug. 2009), Federal Reserve Bank of St. Louis.

⁷ Internet World Stats. Usage and Population Statistics. <http://www.internetworldstats.com/am/us.htm>

paper concluded that an increase in the limit leads to an immediate and significant increase in debt; people who start near their limit have a sharper response.

Rational consumers would choose to pay interest on outstanding credit card balances rather than paying a loan's transaction cost from a bank, in addition to avoiding precautionary money balance holding costs (Brito and Harley, 1995). Furthermore they found that even though credit cards have high interest rates, they are a very useful method of financing transactions and arranging short-term loans.

Consumers with higher credit scores⁸ are more responsive to changes in interest rates than consumers with lower credit score (Huang and Tan, 2007). Credit card customers are sensitive not only to the rate of interest but also to the length of the grace period, extension of manufacturer's warranty, travel accident insurance, and automobile rental insurance, (Stavins, 1996). Consumers' demand for credit card loans is elastic with respect to interest rates (Stavins, 1996), and estimated elasticity was 1.71. Similarly Gross and Souleles (2000) estimated the price elasticity to be 1.30.

Credit card use among the poor was examined by Bird, Hagstrom and Wild (1997), based on the statistics from the SCF 1983-1995. The paper showed the intensity of the growth in credit card debt among the poor. The impact of credit cards on the well-being of the poor depends on the reasons they are used.

Families with credit cards had smaller demand deposit balances than those without (Mandell, 1972), using the 1970 Survey of Consumer Finances (SCF).

⁸ A Credit Score is a number that helps lenders predict how likely you are to make payments on time. Each score is based on information in your credit report, the most common credit score is the FICO® score developed by Fair Isaac Company, It range from 300-850, and the higher the FICO score the better.

Furthermore credit cards significantly reduces household demand deposits (White, 1976), and credit cards help minimize transactions deposits (Duca and Whitesell, 1995).

There is no evidence that consumers are offered competitive interest rates on bank card balances, nor that most consumers respond to lower interest rates when they are offered. Do consumers borrow at high interest rates because they are irrational? (Ausubel, 1991).

Charging different prices for different methods of payments is more efficient for the retailer, alternatively charging one higher price for everyone will encourage convenience user of credit cards to switch to a merchants who don't accept credit cards (Chakravorti and Emmons, 2003)

Behavioral economists have a different point view about consumer rational choices when it comes to credit cards. Using experimental results they found out that consumers' borrowing choice might deviate from rational choice. According to Sunstein (2006) there are five reasons why that could happen: Procrastination (it may result in stress, sense of guilt and crisis)⁹, Myopia and self-control problems, Cumulative cost neglect, Unrealistic optimism, and Miswanting.

The internet allows consumers to compare prices across different online stores with a click of a button, and one should expect price elasticity for online products to be higher than offline products. Degeratu, Rangaswamy and Wu (2000) found out that price

⁹ <http://en.wikipedia.org/wiki/Procrastination>

elasticity is higher online; they suggested it might be due to online promotions being stronger signals of price discounts.

In contrast to offline shopping, online shopping doesn't require high negotiation skills. The Internet is beneficial to consumers who have lower negotiating skills, and minority buyers pay nearly the same prices as do whites (Morton et al, 2003).

The internet not only offers a bigger selection of products, but also offers more information about it. Gu, Hitt and Clemons (2002) showed that consumers who access online product information have a 17% greater demand for CDs and cassettes. On the other hand Brynjolfsson, Hu, and Smith (2003) showed that consumer welfare improved by \$731 million to \$1.03 billion when product variety of internet based bookstores increased in the year 2000.

However, the relationship between the internet access and credit card balance haven't been investigated at the micro level. The aim of this paper is to determine whether internet access encouraged consumers to carry more credit card balance. We use micro data from the Survey of consumer Finance (*SCF2007*).

The paper proceeds as follows: In the next section the paper discusses the theory background. After that, the paper describes the data used from the *SCF 2007*, followed by the econometric model. In the last section the paper presents the results and conclusion.

1.3 Theoretical Background:

Internet access is expected to have a positive effect on credit card demand ($\partial CCDEBT_i / \partial INTERNET_i > 0$). This prediction based is on three assumptions: first,

from the shopping time model, a Cash In Advance (CIA) model, where the household is maximizing his life time utility:

$$\max \sum_{t=0}^{\infty} \beta^t u(c_t, l_t); \quad 0 < \beta < 1 \quad (1)$$

The household is endowed with one unit of time in each period, which is split between leisure, work, and shopping:

$$\begin{aligned} 1 &= n_t + l_t + s_t \\ l_t &= 1 - n_t - s_t \end{aligned} \quad (2)$$

Where n_t is the household working time, l_t is time for leisure, and s_t is shopping time, the transactions technology is such that s_t units of time are required to purchase c_t given money balances m_t and having access to the internet in_t :

$$s_t = v(c_t, m_t, in_t) \quad (3)$$

Obviously, $v_c > 0$, $v_m < 0$ and we are more interested in $v_{in} < 0$, which means that shopping in the internet reduces shopping time, and shopping time is negatively related to utility ($u_s < 0$), thus shopping on the internet increases consumer utility ($u_{in} > 0$).

Second, internet offer better information about the product and its price, which leads to a higher demand (Gu, Hitt and Clemons, 2002). Third, increases in internet usage significantly reduced the price (Brown and Goolsbee, 2002).

It is important to state that having a credit card might encourage households to have access to the internet. This might be a good subject for another research paper, since

this paper is focusing on credit card debt for households who carry at least one credit card.

1.5 Data

The main data source for this study is a cleaned and imputed version of the *Survey of Consumer Finances* (SCF 2007); The SCF is a triennial survey of the balance sheet, pension, income, and other demographic characteristics of U.S. families. The survey also gathers information on the use of financial institutions. SCF is sponsored every three years by the Board of Governors of the Federal Reserve System and the survey also gathers information on the use of financial institutions. Missing data in the survey have been imputed five times, using a multiple imputation technique¹⁰. The information is stored in five separate and internally coherent imputation replicates (implicates). Thus, for the 4,422 families interviewed for the survey, there are 22,110 records in the data set. Four observations were deleted for the public version of the data set for purposes of disclosure avoidance; thus, there are 22,090 records in the public data set for 4,418 families¹¹.

The SCF data has two advantages over credit card accounts data (Gross and Souleles, 2000); first, it includes important variables like household assets, employment status and other demographic and characteristic information. Second, the main unit of the analysis is the individual, not the account.

¹⁰ <http://www.federalreserve.gov/pubs/oss/oss2/2007/scf2007data.html>

¹¹ <http://www.federalreserve.gov/pubs/oss/oss2/scfindex.html>

The internet variable was created using more than one hundred of the survey questions. Each question is giving the value equal to 1 whenever the household choose “the internet or online” as his answer to the questions. The household is considered to be having internet access if they have the value one to any questions.

Table 1.1: Descriptive statistics of variables.

Variable	All Households		Households with CC	
	Mean	SE	Mean	SE
INTERNET	0.61	0.009	0.69	0.010
AGE	50.01	0.327	51.18	0.367
AVERSE	0.80	0.007	0.77	0.009
BADHIST	0.21	0.007	0.20	0.008
CHECKING	8,321.46	526.4	10,803.04	733.5
CCDEBT	3,363.49	159.2	4,711.50	220.2
EDU	13.25	0.051	13.94	0.052
HSIZE	2.42	0.025	2.43	0.028
LIQASSETS	345,783.6	9,647.8	459,863.4	13,378.5
ICOME	80,824.2	1,614.0	101,148.4	2218.5
LIMIT	20,417.2	536.3	2,9137.3	701.77
MARRIED	0.51	0.009	0.58	0.010
OPTIM	0.31	0.008	0.30	0.010
OWNHOME	0.61	0.009	0.73	0.009
RACE	0.74	0.008	0.80	0.009
CCRATE	9.03	0.141	12.88	0.132
SEX	0.72	0.008	0.76	0.009
CC	0.73	0.008	-	-
# of PSU	4384		3498	
# of Obs.	21920		17486	

Households with no credit cards have been excluded from the sample to distinguish between households with zero balance and households with no credit card. Furthermore households with negative income have been excluded also since they all have an error code (the actual negative amount is not released in the public data). The

data showed that some households have no limit on their credit cards (they have been giving an error code). To avoid complication and to assure more accurate results, the paper excluded them from the data.

Table (1.1) shows that 73% of households carry at least one credit card. Households with credit cards have more than the population average for internet access, 69% of households with credit cards use the internet to shop for financial institutions, getting financial information, making financial transactions and to communicate with their financial institution¹². Furthermore, the data shows that households with credit cards take more financial risk than average household.

Household with credit cards seem to have more wealth, higher income and more money in their checking accounts. They have \$106,000 more in wealth, \$20,000 more in income and \$2,400 more in checking accounts than average household. In addition, 72% of them own their home, with the whole population average at 61%.

On average, households with credit cards carried around \$4,500 in credit card debt, and paid 12.39% interest on that debt, with total credit card limit around \$28,000. Households with credit card have a higher percentage of whites, and male head of household than the whole population average, but less optimistic households. Only 30 % of households with credit cards think the economy will be better in the next five years comparing to 31% for the whole sample.

¹² The author analysis based on the *SCF2007* data and *SCF2007* codebook.

On the other hand, other variables show no significant differences. Household with credit card have the same age average as the whole population at 50 years. Average years of education were around 13 years, and household size was the same at 2.42 persons per household.

1.6 The Econometric Model:

The credit card balance follows the traditional supply-demand model; before the credit card issuers (credit card suppliers) approve an applicant they take into consideration some of the applicant characteristics that affect the demand side. The equilibrium credit card balance for household i can be written as:

$$CCDEBT_i^* = f(INTERNET_i, CCRATE_i, INCOME_i, F_i, D_i, \varepsilon_i) \quad (4)$$

Where for household i , the demand for credit cards ($CCDEBT_i \geq 0$) is determined by whether the household has access to the internet ($INTERNET_i$), by the interest rate or the price of credit card borrowing ($CCRATE_i$), the household income ($INCOME_i$), the household financial characteristics variables (F_i), the household demographic characteristics variables (D_i), and the error term ε_i , which is assumed to be normally distributed ($\varepsilon_i \sim N(0, \sigma_2^2)$).

A type I Tobit model will be used to estimate equation (1). Tobit models are more appropriate to deal with censored data, in contrast to the linear model which could lead to biased and inconsistent estimators. (Foster and Kalenkoski, 2009).

Based on the Tobit model, the $CCDEBT_i^*$ is a latent variable and $CCDEBT_i$ is an observed variable defined as:

$$CCDEBT_i = \begin{cases} CCDEBT_i^* & , \text{ if } CCDEBT_i^* > 0 \\ 0 & , \text{ if } CCDEBT_i^* \leq 0 \end{cases} \quad (5)$$

There are three expected values that we could get from the Tobit model, First: The expected value of the latent variable $CCDEBT^*$, which can be defined as:

$$E[CCDEBT^* | X] = X_i \beta \quad (6)$$

And the marginal effect of the k^{th} independent variable is:

$$\frac{\partial E[CCDEBT^* | X]}{\partial X_k} = \beta_k \quad (7)$$

Second, the predicted value of $CCDEBT$, the observed variable, unconditional on being bigger than zero, it defined as:

$$\begin{aligned} E[CCDEBT | X] &= E[CCDEBT | X, CCDEBT > 0] * \Pr(CCDEBT > 0) \\ &= \Phi\left(\frac{X_i \beta}{\sigma}\right) X_i \beta + \sigma \lambda(\alpha) \end{aligned} \quad (8)$$

Where $\lambda(\alpha)$ is the Inverse Mills Ratio¹³, and the marginal effect of the k^{th} independent variable is:

$$\frac{\partial E[CCDEBT_i | X_i]}{\partial X_{k,i}} = \beta_k [1 - \Phi(-X_i \beta / \sigma)] = \beta_k P(CCDEBT_i^* > 0) \quad (9)$$

Third, the predicted value of $CCDEPT$, conditional on being bigger than zero, is:

¹³ $\lambda(\alpha) = \text{the Inverse Mills Ratio} = \frac{\phi\left(\frac{X_i \beta}{\sigma}\right)}{\Phi\left(\frac{X_i \beta}{\sigma}\right)}$, where $\phi(\cdot)$ is the cumulative density function CDF

and $\Phi(\cdot)$ is the probability density function PDF .

$$E(CCDEBT | X, CCDEBT > 0) = X_i\beta + \sigma\lambda(\alpha) \quad (10)$$

And the marginal effect of the k^{th} independent variable is:

$$\frac{\partial E(CCDEBT | X, CCDEBT > 0)}{\partial X_k} = \beta_k \left[1 - \lambda(\alpha) \left(\frac{X\beta}{\sigma} + \lambda(\alpha) \right) \right] \quad (11)$$

Economically the first predicted value has no useful use¹⁴, so the paper will focus on the second and third predicted values.

1.7 Empirical Results:

Equation (4) was estimated using STATA 10.1 and 11.0. Table (1.2) shows the Tobit results and marginal effects on the three predicted values plus the probability of carrying a credit card balance.

The results¹⁵ show that internet access has a positive, as expected, and significant effect on credit card balance. Households who have access to the internet carry \$862 more in credit card balance than households without internet access. For households who already carry a credit card balance, they carry around \$635 more if they have access to the internet. Furthermore, internet access increases the probability of carrying a positive credit card balance by 5.4%. These results matched the theoretical prediction, since internet access reduces shopping time and gives consumers more information about products and markets.

¹⁴ Greene (2003) and Wooldridge (2002)

¹⁵ It is important to mention that these results are on average, it shows the effect of the explanatory variable for an average household.

Credit card interest rate has a negative effect on the balance; a 1% increase (one point) in the interest rate will decrease the balance by around \$48 for all households and \$35 for households with positive balance. The probability of carrying a positive balance will decrease by 0.3% with every point increase in interest rate. This result matched the theoretical prediction since interest rate is the price of credit card debt, and quantity demanded goes in the opposite direction of the price.

The results suggest that household income has no effect on credit card balance, one should look carefully at this result, when I redid the same regression for household who has an income of \$100,000 or less, Income has a positive and significant effect on credit card balance. For households with income more than \$100,000, change in income does not affect credit card balance. This suggests that the income effect changes with income groups, and it might be the reason why the overall effect was insignificant. On the other hand, wealth has a negative effect on credit card balance.

With every dollar increase in wealth, credit card balance decreased by 0.1 cents (for every thousand dollars increase in wealth, balance decreases by one dollar). There are no difference on the wealth effect between households who carry a positive debt and households who don't. Wealth has a very small effect on the probability of carrying a positive credit card balance.

Table 1.2: Tobit Coefficients and Marginal Effects After Tobit

CCDEBT	Tobit Model		Conditional Marginal Effects		Unconditional Marginal Effects		Probability of carrying a positive CC Balance		Statistics		
	Coef.	Std. Err.	dy/dx	Std. Err	dy/dx	Std. Err	dy/dx	Std. Err	z	P> z	Mean
INTERNET ^{a*}	1,812.4	719.9	634.961	247.62	862.025	333.650	0.054	0.021	2.560	0.010	51.150
AGE [*]	-114.65	21.06	-40.77	7.47	-55.678	10.212	-0.0034	0.001	-5.460	0.000	0.769
AVERSE ^a	-447.272	779.147	-159.910	279.99	-218.804	383.790	-0.013	0.023	-0.570	0.568	0.202
BADHIST ^{a*}	7,567.23	967.96	2,986.5	394.39	4,176.073	551.250	0.220	0.022	7.570	0.000	10,754.8
CHECKING [*]	-0.075	0.008	-0.027	0.0029	-0.037	0.004	-2.24E-06	0.000	-9.300	0.000	13.9
EDU	-103.815	129.456	-36.916	46.027	-50.415	62.856	-0.003	0.004	-0.800	0.423	2.419
HSIZE [*]	805.803	271.653	286.539	96.108	391.313	131.060	0.024	0.008	2.980	0.003	451,334.0
LIQASSETS [*]	-0.002	0.000	-0.001	0.00007	-0.001	0.000	-6.29E-08	0.000	-10.110	0.000	99,835.3
INCOME	0.000	0.001	-5.4E-05	0.00032	-7.4E-05	0.000	-4.55E-09	0.000	-0.170	0.865	28,031.5
LIMIT [*]	0.117	0.007	0.042	0.00227	0.057	0.003	3.48E-06	0.000	18.330	0.000	0.580
MARRIED ^{a***}	1566.49	835.85	554.00	293.41	754.87	398.57	0.047	0.024	1.890	0.059	0.302
OPTIM ^a	481.24	608.48	171.86	218.48	235.06	299.41	0.014	0.018	0.790	0.432	0.722
OWNHOME ^{a*}	2122.06	795.59	739.07	271.47	1000.92	364.44	0.063	0.024	2.720	0.006	0.793
RACE ^{a**}	-1561.74	660.68	-566.94	244.56	-779.64	338.40	-0.046	0.020	-2.320	0.020	0.686
CCRATE ^{**}	-98.71	43.00	-35.10	15.36	-47.93	21.02	-0.003	0.001	-2.280	0.022	12.394
SEX ^a	-423.95	787.92	-151.50	282.80	-207.25	387.48	-0.013	0.023	-0.540	0.592	0.757
CONS	1140.92	2850.59									

(^a) dy/dx is for discrete change of dummy variable from 0 to 1.

(*) Statistical Significant at 99%, (**) Statistical Significant at 95%, (***) Statistical Significant at 90%.

Checking account balance has a negative effect on credit card balance; even though the effect is small but it is statistically significant, a one dollar increase in checking account balance will lead to a 3.7 cents decrease in credit card balance. This effect reflects the relationship between debit cards, which are connected to the checking account, and credit cards. The consumer can use both of those two cards in his online activities; therefore they could be looked at as alternatives or substitutes to each others. The effect of credit card limit is very small. With each dollar increase in the limit the debt increases by 5.7 cents and 4.2 cents for households with positive debt.

Household's financial characteristics are all significant except being optimistic; there are no significant differences when it comes to how the household think about the future of the economy. On the other hand, households who are risk averse tend to be more cautious with their credit cards; their credit card balance is \$218.8 less than to households who take more than average financial risk, this amount goes down to \$160 if the household already have a positive credit card debt.

Bad history, not paying on time or being behind payments schedule, leads to a higher credit card balance. Households with a bad history carry \$4176 more on their credit card debt, and households with positive debt carry \$2987 more in credit debt. Having a bad history will increase the probability of having a credit card balance by 22%. One should take this result seriously, since high credit card balance could lead to missing payments or not paying on time.

Buying a house is a big financial decision. Buying a home will increase credit card debt by \$1000 and by \$739 if the households already have a positive credit card

debt. The probability of carrying a positive debt will increase by 6.3% when buying a home.

The household demographic characteristics variables are all significant except for head of household's sex, which indicates that there is no significant difference between male and female when it comes to credit card balance. In contrast, the age and the education of the household head has a negative and similar effect on credit card debt. Credit card debt tends to go down by \$36 with every year of education and \$40 with every year of age for households with positive debt, and by \$50 with every year of education and \$50 with every year of age for households with or without positive debt. Furthermore, being married increases credit card debt by \$755 and by \$554 for household with positive credit card debt.

Household size has a positive effect on credit card balance. With each additional person in the household the credit card balance increase by \$445 for households with positive balances and by \$426 for all households. Finally, whites carry less credit card balance than non-whites. Credit card balance for whites with positive balance is \$567 less than non-white balance and \$780 less for all households. Being nonwhite increases the probability of carrying a positive credit card balance by 4.6%.

1.8 Conclusion

Internet access has the tendency to make households buy more with their credit card and carry a higher credit card balance. This might be the result of the combination of several factors, such as: shopping in the internet is more convenience, it provides more privacy, more information about the product and the market, and lower price since the

consumer doesn't have to pay sales taxes in some online purchases. The income effect suggests that credit cards are normal goods up to a certain level of income, and then they become inferior goods, whereas the price effect confirms that credit card demand responds inversely to changes in price.

The internet effect could be reduced by increasing consumer awareness about the internet tendency to increase credit card debt. Financial education programs could be very helpful to increase household savings, likelihood of buying home, and to improve their financial health and make it more secure¹⁶. More researches are needed to understand the Psychological and Economical elements of the household's decision to use credit cards over the internet.

Bad history (being behind payment schedule) needs to be addressed as a serious financial problem for households. This problem could be reduced by encouraging households to set a payment plan that they can afford, and then pay on time at least the minimum amount. Doing so will improve the household credit rating history. Households need to know that fixing bad credit history takes time. It is a slow process, but it will pay off in the end.

Household should be encouraged to take a decision on the margin every time they buy from the internet. Some website might save consumer payment information (such as credit card number, expiration date, ext.) which makes it easier on the consumer to make the online transaction. Such an action might encourage the consumer to take an irrational

¹⁶FDIC, The Financial Education and Literacy Program

decision. The consumer might choose to use the saved credit card even if it has a higher APR or a lower limit.

CHAPTER 2

BORROWING AND SAVING ATTITUDES AND PERSONAL BANKRUPTCY

2.1 Introduction:

The word bankruptcy came from the Italian word “banca rotta” which means “broken bench”, since the practice during the Medieval Period was to destroy the trading bench of the merchant who was unable to pay his debt¹⁷. Nowadays bankruptcy means the declaration of inability to pay back creditors; then the procedure follows a set of federal laws that allow the debtor to have a new start by cancelling his debt.

During the first quarter of 2009, the number of noncommercial bankruptcy filings has climbed to a new record high reaching 304,228 cases¹⁸. If the same rate continues over the whole year it will be an 18% increase from 2008 which has a total of 1,031,443 filings. The year 2008 witnessed a very high increase of 31.5% over 2007. Graph (2.1) shows the increase in bankruptcy filings from Jan. 2006 to Mar. 2009.

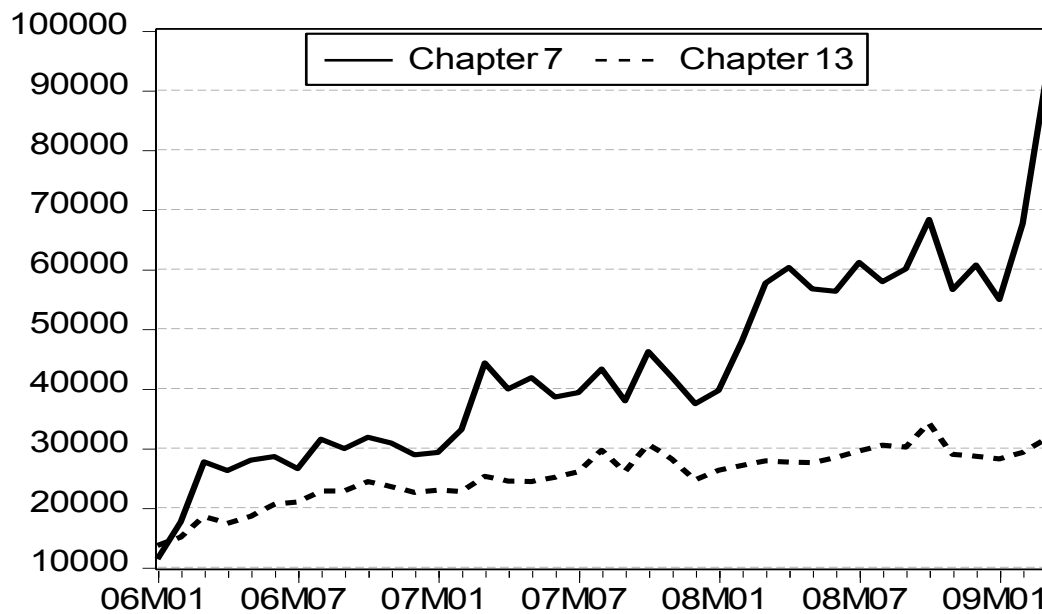
Under the US code title 11 (Bankruptcy Code) there are nine chapters. The four main chapters available for noncommercial individuals are: Chapter 7 (Liquidation), Chapter 11 (Reorganization), Chapter 12 (Adjustment of Debts of a Family Farmer or Fisherman with Regular Annual Income), Chapter 13 (Adjustment of Debts of an Individual with Regular Income)¹⁹, with 99% of cases filed under chapter 7 and chapter

¹⁷ <http://www.bankruptcy-courts.net/>

¹⁸ This includes noncommercial filing in all chapters (7, 11, 12 and 13).

¹⁹ http://uscode.house.gov/download/title_11.shtml

13²⁰. Furthermore the gap between chapter 7 (total assets liquidation) and chapter 13 (rehabilitation with a payment plan) is widening (see Graph 2.1) indicating a harder cases of bankruptcy.



Source: Author calculation based on the data from Bankruptcy Data Project (BDP) at Harvard University.

Figure 2.1: —Chapter 7 --- Chapter 13

Defaulting has a different meaning from bankruptcy, even though defaulting is the first step toward bankruptcy. It means the failing to meet the obligations of a loan contract, given that the borrower is responsible for paying back the principal of the loan plus the interest.

The borrower is considered in default if he misses his monthly payments. The number of payments required depends on the type of loan and the loan contract. For a

²⁰ Author calculation based on the data from Bankruptcy Data Project (BDP) at Harvard University.

mortgage loan the borrower is considered in default if he is late 1-3 payments, and 270 days for a student loan²¹.

2.2 Literature Review

Comparing to other industrial countries; the bankruptcy law in the US is still pro-debtors even after the Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) of 2005 (White, 2007). “Opportunistic”²² debtors appear to have little to fear from the 2005 bankruptcy reforms (White, 2006). The United States bankruptcy system is serving the American middle class (Sullivan, Warren & Westbrook, 1997).

Households are more likely to file for bankruptcy if their financial benefit from bankruptcy rises (Fay, Hurst and White, 2002). Furthermore that paper found that an increase of \$1,000 in households' financial benefit from bankruptcy was associated with an increase of 0.021 percentage points or 7 percent in the probability of bankruptcy.

In addition, the household probability to default increases with: the ratio of minimum required payment to income, and the number of credit cards on which the consumer reached the maximum limit (Dunn and Kim, 1999).

High medical debt (usually for households with no health insurance) has the highest single impact in raising the conditional probability of bankruptcy, whereas credit card debt is the main single contributor to bankruptcy on the margin (Domowits and Sartain, 1999).

²¹ <http://www.finaid.org/loans/default.phtml>

²² Debtors who file even when they have not experienced adverse shocks are called Opportunistic (White, 2006)

There are a lot of reasons why a household will file for a bankruptcy. It could result from a major economic change rather than from an extensive abuse of the system (Sullivan, Warren & Westbrook, 1997). Medical reasons and unpaid medical bills was always a big factor; Jacoby, Sullivan & Warren (2000) found out that 45.6% of households who filed for bankruptcy have either a medical reason or a substantial medical debt. Medical debt also makes the household more sensitive to increases in other sources of unsecured debt (Domowitz & Sartain, 1999). Would it be different if more households had medical insurance? (Gross and Notowidigdo, 2009) found out that a 10 percentage-point increase in Medicaid eligibility would decrease bankruptcies by about 8 percent. Another reason for filing bankruptcy is casino gambling. Casino gambling appears to be positively related to higher bankruptcy rates (Barron, Staten, and Wilshusen, 2002). On the macro level, bankruptcy filings tend to rise in the period twelve to thirty-six months after a major hurricane (Lawless, 2005).

Demographic characteristics of the household have some impact on the probability of filing for bankruptcy. Households whose head is a female are twice as likely to file for bankruptcy for the same reasons (medical reasons) as households whose head is a male (Sullivan and Warren, 2000). Among all other age groups; older Americans (age 65 and over) have the highest bankruptcy growth rate, (Sullivan, Thorne and Warren, 2001).

Beside the economic cost of bankruptcy, there are social costs (stigma) and family relations costs of bankruptcy. Bankruptcy was found to be a major disturbance in the family economics system, (Sullivan, Warren & Westbrook, 1995). On the other hand, the

public attitude towards households filing for bankruptcy clearly changed in early 1960s and filing bankruptcy was more socially accepted (Efrat, 2006); the paper examined 171 newspaper articles published between 1864 and 2002 about personal bankruptcy. The stigma effect is not clear among all bankruptcy studies. Fay, Hurst, & White (2002) and Athreya (2004) found that when stigma decreases the probability of filing increases. It has been shown that stigma has an external effect (Fay, Hurst, & White, 1998); stigma has less effect when the whole neighborhood has the same level of stigma. Households are much more likely to file for bankruptcy if they live in a neighborhood that has a high aggregate bankruptcy rate (Cohen-Cole and Duygan-Bump, 2008). However, Sullivan, Warren and Westbrook (2006) challenge this relation and find no clear evidence that stigma has encouraged millions of debtors to file “bankruptcies of convenience”. Social effects have effected bankruptcy rates, but not in way previously expected.

Behavioral economists and behaviorists suggests that if the bankrupts are left with too little income, that he will worry about their basic needs, they will view the bankruptcy system as unfair (Kilborn, 2005). Having such a view might lead to irresponsible use of the system.

2.3 Theoretical Background:

The bankruptcy model used in this paper follows Athreya (2002), Athreya (2004) and Athreya and Simpson (2006). It is a consumer debt model that allows the household to default and file for bankruptcy. Households are exposed to income shocks in every period; and they cannot totally insure their income risk. Households have other options;

they have access only to risk free saving and borrowing, they might default on their debt and face the cost of filing bankruptcy.

The representative household objective is to maximize the present value of their expected time life utility function:

$$\max E_0 \sum_{t=0}^{\infty} \beta^t u(c_t); \quad 0 < \beta < 1 \quad (1)$$

where is $u(.)$ bounded, continuously differentiable, strictly increasing, and strictly concave, and has a constant relative risk aversion (CRRA) form:

$$u(c_t) = \begin{cases} \frac{c_t^{1-\Phi} - 1}{1-\Phi} & , \Phi > 1 \\ \ln c_t & , \Phi = 1 \end{cases} \quad (2)$$

Where Φ shows how risk-averse household is, in addition to household's attitudes toward saving and borrowing. To capture income variation, the household has a random endowment (e) in each period. If household is employed, there is a (ρ) chance he will lose his job and become unemployed. Once unemployed, the probability of finding a job is equal to (ε).

Let (b') be the saving or debt the household has in a given period. If the household is saving then $b' > 0$ and $b' < 0$ if borrowing. The net interest on (b') is equal to $r(b')$.

There are transaction and processing costs (τ) that the household has to pay when borrowing. When $b' > 0$; the household get paid (r^b), so what the household will pay when borrowing should satisfy: $r(b') \geq r^b + \tau$. When the household asks to borrow (b') he will be given a smaller amount or a discounted amount $b'/(1+r(b')) < b'$ and will pay the

full amount (b') when the debt is due. A solvent household hold can borrow up to an endogenous limit (b') ; if the household chooses to file for bankruptcy, the probability of that household getting a loan is equal to $(1 - \theta) < 1$ in each subsequent period, which will keep the household restricted from borrowing for $1/(1 - \theta)$ periods. This will be the only cost for filing bankruptcy; the paper will assume that there is not social cost or stigma.

The household could have one of the following three statuses: Solvent (S), Bankrupt (B) or Borrowing Constrained (BC). If the household is solvent, he is facing the following value function, giving his income endowment (e) and his savings or debt (b) :

$$V^S(e, b) = \max [W^S(e, b), W^B(e, b)] \quad (3)$$

where $W^S(e, b)$ is the value function of staying solvent and not filing for bankruptcy, and $W^B(e, b)$ is the value function of filing bankruptcy. If the household chose not to file for bankruptcy, $W^S(e, b)$ must satisfy:

$$W^S(e, b) = \max u(c) + \beta E [V^S(e', b')] \quad (4)$$

Subject to:

$$c + \frac{b'}{1 + r(b')} \leq e + b \quad (5)$$

If the household chooses to file for bankruptcy, all his debt will be forgiven, and the value function of filing for bankruptcy must satisfy:

$$W^B(e, b) = \max u(c) + \beta E [V^{BC}(e', b')] \quad (6)$$

subject to:

$$c + \frac{b'}{1+r^b} \leq e \quad (7)$$

When a household files for bankruptcy, he will be constrained from borrowing for the next period, and his value function should satisfy:

$$V^{BC}(e, b) = \max u(c) + \theta \beta E[V^S(e', b')] + (1 - \theta) \beta E[V^{BC}(e', b')] \quad (8)$$

subject to:

$$c + \frac{b'}{1+r^b} \leq e + b \quad (9)$$

The household is assumed to be rational and acting optimally. Doing so; a zero profit interest rate $r(b)$ must satisfy:

$$r(b) = \frac{r^b + \tau}{1 - \delta} \quad (10)$$

where δ is the probability of default.

2.4 Data

The main data source for this study is a cleaned and imputed version of the *Survey of Consumer Finances* (SCF 2007). The survey is a great source for microfinance data; not only has it focused in the financial behavior of households in the US, but also provides a lot of information about household financial attitudes.

This paper focuses on some of these attitude variables and tries to link them with household decisions to file bankruptcy. Attitude variables include:

- Whether household thinks it is a good idea to buy things on installment plan;

- Whether the household feels it is all right to borrow money to cover the expenses of a vacation trip or to finance the purchase of a fur coat or jewelry;
- Whether the household expects any foreseeable major medical expenses that they have to pay for themselves, and whether the household is actually saving for these medical expenses.
- Whether the household thinks that the time period of 5-10 years or more is the most important period when planning for saving and spending.
- Whether the household pays off the total credit card balance owed on the account each month (although it could be looked at as a habit more than an attitude but the study will treat it as an attitude).
- About how much does the household think they need to have in savings for emergencies and other unexpected things.

Table (2.1) shows the descriptive statistics for the variables used in the study. The data shows that 12% of the household in the sample had file bankruptcy at least once in their life, and 10.7% of those who carry at least one credit card. Surprisingly, the data shows that households who filed for bankruptcy are more risk-averse than households who never filed for bankruptcy.

There is a big difference whether the file for bankruptcy or not when it comes to wealth and income. The average wealth with bankruptcy is less than half of that without bankruptcy and a little above half for income. Households who filed bankruptcy face borrowing constraints. Their credit card limit is half of that for households with no bankruptcy.

The average credit card debt was almost the same between the two groups; one could see some difference when examining households with credit cards. The difference is clearer when it comes to the debt-limit ratio. Households who filed bankruptcy are closer to their credit card limit. On average they used 62% of their limit, compared to 23% for households who never filed for bankruptcy.

Table 2.1: Descriptive Statistics of the Variables used in the

Variable	All Households						Households with Credit Cards					
	ALL		Bankruptcy		No Bankruptcy		ALL		Bankruptcy		No Bankruptcy	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
BR	0.121	0.006	1.000	0.000	0.000	0.000	0.107	0.007	1.000	0.000	0.000	0.000
AGE	50.010	0.327	49.151	0.632	50.128	0.362	51.188	0.370	49.902	0.739	51.342	0.404
AVERSE	0.799	0.007	0.838	0.019	0.793	0.008	0.765	0.009	0.820	0.026	0.759	0.009
BADHIST	0.207	0.007	0.376	0.024	0.184	0.007	0.199	0.008	0.361	0.031	0.180	0.009
CHECKING	8,321	526	2,748	390	9,092	597	10,803	734	3,521	563	11,672	818
CCDEBT	3,363	159	3,367	378	3,363	174	4,712	220	5,316	573	4,639	237
EDU	13.257	0.050	12.914	0.113	13.304	0.055	13.938	0.052	13.191	0.150	14.028	0.056
HSIZE	2.421	0.025	2.572	0.078	2.400	0.026	2.430	0.028	2.544	0.094	2.416	0.030
LIQASSETS	345,784	9,648	146,350	12,287	373,362	10,867	459,863	13,378	195,708	17,513	491,399	14,855
INCOME	80,824	1,614	51,069	1,897	84,939	1,822	101,148	2,218	61,344	2,621	105,900	2,469
LIMIT	20,417	536	11,889	1,117	21,596	588	29,137	702	19,327	1,657	30,309	757
RATIO	-	-	-	-	-	-	27.31	1.62	62.12	13.25	23.15	0.85
MARRIED	0.510	0.009	0.451	0.025	0.518	0.010	0.585	0.011	0.477	0.033	0.598	0.011
OPTIM	0.311	0.008	0.292	0.023	0.314	0.009	0.303	0.010	0.308	0.030	0.302	0.010
OWNHOME	0.612	0.009	0.512	0.026	0.626	0.009	0.729	0.009	0.632	0.031	0.741	0.010
RACE	0.738	0.008	0.748	0.022	0.737	0.009	0.798	0.009	0.768	0.028	0.802	0.009
INTERNET	0.611	0.009	0.646	0.024	0.606	0.009	0.692	0.010	0.708	0.029	0.690	0.010
CCRATE	9.027	0.141	8.754	0.437	9.065	0.149	12.883	0.132	14.230	0.423	12.722	0.139
SEX	0.723	0.008	0.683	0.024	0.728	0.009	0.760	0.009	0.724	0.030	0.765	0.010
CC	0.728	0.008	0.635	0.025	0.741	0.008	1.000	0.000	1.000	0.000	1.000	0.000
GOODIDEA	0.656	0.009	0.643	0.025	0.657	0.009	0.674	0.010	0.674	0.031	0.674	0.011
ATTITUDE	0.160	0.007	0.171	0.020	0.158	0.007	0.174	0.008	0.202	0.027	0.171	0.008
MD	0.082	0.005	0.074	0.013	0.083	0.005	0.089	0.006	0.074	0.017	0.091	0.006
PLANNING	0.388	0.009	0.360	0.025	0.392	0.009	0.441	0.011	0.410	0.032	0.444	0.011
CCPAY	0.400	0.009	0.191	0.020	0.429	0.009	0.554	0.011	0.297	0.030	0.584	0.011
ES	23,002	1,654	12,996	4,097	24,386	1,796	28,097	2,205	14,700	5,658	29,696	2,375
FRIEND	0.664	0.008	0.552	0.025	0.680	0.009	0.747	0.009	0.620	0.032	0.762	0.010
# of Obs.	21921		2161		19759		16935		1361		15574	
# of PSUs	4384		433		3952		3388		273		3116	

The attitude variables did not show a significant difference between the two groups, except for paying the credit card balance every month, and the amount they save for emergency. Only 19% of household with bankruptcy paid their credit card balance in full every month, comparing to 41% of households without bankruptcy. Finally, 55% of households who filed bankruptcy said that they have a friend who could lend them \$3000 or more; the percentage increased to 68% among households with no bankruptcy.

Since SCF data is cross-sectional, the time order between variables is not clear. The household might had filed for bankruptcy 10 or 15 years ago, and the reported income is the 2007 income. The time order could create an unclear endogeneity between the variables.

2.5 The Statistical Model:

The household decision of filing for bankruptcy is a function of a lot of variables; these variables belong to three groups: financial variables (FV), demographic variables (DF) and attitude variables (AV). This function could be represented as:

$$BR_i = f(FV_i, DV_i, AV_i, \varepsilon_i) \quad (11)$$

Where ε_i is the error term, which is assumed to be normally distributed ($\varepsilon_i \sim N(0, \sigma_2^2)$).

According to (Maddala, 1983) it could be defined as the following:

$$BR_{ji}^* = \beta_1' X_{ji} + u_{ji} \quad (12)$$

Since $BR_{ji}^* (j=1,2)$ is unobservable, we observed BR_{ji} a dummy variable that can be defined as:

$$BR_i = \begin{cases} 1 & BR_i^* > 0, \text{ (Household filed for bankruptcy)} \\ 0 & BR_i^* \leq 0, \text{ (Otherwise)} \end{cases} \quad (13)$$

Based on the previous relations and definitions, we could obtain:

$$P(BR_{ji} = 1) = P(u_{ji} > -\beta'_j X_{ji}) = 1 - F(-\beta'_j X_{ji}) \quad (14)$$

and the likelihood function could be written as:

$$L_j = \prod_{BR_{ji}=0} F(-\beta'_j X_{ij}) \prod_{BR_{ji}=1} 1 - F(-\beta'_j X_{ij}) \quad (15)$$

We assume that the accumulative distribution of $u_{ji} \sim IN(0, \sigma^2)$, which makes this model a probit model, in this case:

$$F(-\beta'_j X_i) = \int_{-\infty}^{\beta'_j X_i / \sigma} \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{t^2}{2}\right) dt \quad (16)$$

The marginal effect of the dependent variable X_j is equal to:

$$ME_j = \frac{\partial P(BR_i = 1)}{\partial X_{ji}} = \frac{\partial F(\beta'_j X_i)}{\partial X_{ji}} \quad (17)$$

2.6 Empirical Results:

Table (2.2) displays the result of the probit model (equation 12) and the marginal effects (equation 17). The regression was run twice, once for the whole sample, then for a subsample with only households who have at least one credit card. The results show that most of the attitude variables don't show any significant effect on household probability of filing bankruptcy. Saving for major medical expenses does not help avoiding bankruptcy, it could be because medical cost are so high that the average savings will not cover them. Taking more than average financial risk pays off, and it does not increase the probability of filing bankruptcy. The way the household thinks about buying with

installment plan does not affect his bankruptcy decision; neither does household's attitude toward borrowing for luxury expenditures.

Saving for medical expenses does not save household from filing for bankruptcy. One reason might be that medical expenses that cause bankruptcy are usually high and average saving will not cover them entirely. It is very similar to households who filed for bankruptcy because of medical bills, even though they have medical insurance.

Long terms planning and saving for emergency expenses doesn't help preventing bankruptcy, neither does what household think about the future of the economy and whether the household is optimistic about it or not. On the other hand, the attitude of paying credit card debt in full every month reduces the probability of filing for bankruptcy by 8.4%, and 5.9% for household with credit cards.

Bankruptcy does not discriminate based on sex, marital status or education. There is no significant difference between male and female, levels of education, nor being married or single. The situation is different for household with credit cards; males are 2.6% more likely to file for bankruptcy, and each year of education reduces the probability of filing by 0.7%, and being married will reduces the probability of filing by almost 2%.

Table 2.2: Probit output and Marginal Effects

BR	All Households						Households with Credit Cards					
	Probit		Marginal Effects				Probit		Marginal Effects			
	Coef.	SE	dy/dx	SE	z	P> z	Coef.	SE	dy/dx	SE	z	P> z
AGE	0.0073	0.0021	0.0013	0.0004	3.5900	0.0000	0.0075	0.0027	0.0011	0.0004	2.8000	0.0050
AVERSE ^a	0.0778	0.0846	0.0132	0.0139	0.9500	0.3430	0.0986	0.1006	0.0144	0.0142	1.0200	0.3090
BADHIST ^a	0.3685	0.0684	0.0737	0.0156	4.7300	0.0000	0.1717	0.0911	0.0280	0.0160	1.7500	0.0790
CHECKING	-2.74E-06	2.84E-06	-4.79E-07	0.0000	-0.9700	0.3300	-2.64E-06	2.61E-06	-4.01E-07	0	-1.02	0.307
CCDEBT	-2.37E-06	4.03E-06	-4.15E-07	0.0000	-0.5900	0.5560						
EDU	0.0062	0.0126	0.0011	0.0022	0.4900	0.6240	-0.0476	0.0171	-0.0072	0.0026	-2.7800	0.0050
HSIZE	0.0754	0.0253	0.0132	0.0044	2.9800	0.0030	0.0804	0.0353	0.0122	0.0053	2.2900	0.0220
LIQASSETS	-1.34E-07	6.50E-08	-2.35E-08	0.0000	-2.0700	0.0390	-7.15E-08	5.62E-08	-1.09E-08	0	-1.27	0.204
INCOME	-6.55E-08	2.50E-07	-1.14E-08	0.0000	-0.2600	0.7940	-2.37E-07	3.01E-07	-3.61E-08	0	-0.78	0.432
LIMIT	-3.00E-06	1.75E-06	-5.23E-07	0.0000	-1.7300	0.0840						
RATIO							0.0034	0.0009	0.0005	0.0002	3.5600	0.0000
MARRIED ^a	-0.0857	0.0886	-0.0150	0.0155	-0.9700	0.3340	-0.3601	0.1124	-0.0573	0.0186	-3.0700	0.0020
OPTIM	-0.0746	0.0676	-0.0128	0.0114	-1.1300	0.2600	-0.0510	0.0850	-0.0076	0.0125	-0.6100	0.5420
OWNHOME ^a	-0.1307	0.0738	-0.0233	0.0133	-1.7500	0.0810	-0.1039	0.0941	-0.0163	0.0152	-1.0700	0.2840
RACE ^a	0.1920	0.0759	0.0316	0.0117	2.6900	0.0070	0.1044	0.0998	0.0152	0.0139	1.0900	0.2740
INTERNET ^a	0.2528	0.0744	0.0427	0.0121	3.5200	0.0000	0.2565	0.1005	0.0365	0.0134	2.7300	0.0060
CCRATE	0.0095	0.0041	0.0017	0.0007	2.3100	0.0210	0.0113	0.0056	0.0017	0.0009	2.0300	0.0430
SEX ^a	0.0075	0.0863	0.0013	0.0150	0.0900	0.9300	0.1823	0.1142	0.0259	0.0152	1.7100	0.0870
GOODIDEA ^a	-0.0331	0.0641	-0.0058	0.0113	-0.5100	0.6070	-0.0183	0.0826	-0.0028	0.0126	-0.2200	0.8250
ATTITUDE ^a	0.0393	0.0847	0.0070	0.0153	0.4600	0.6480	0.0041	0.1001	0.0006	0.0153	0.0400	0.9680
MD ^a	-0.0708	0.1100	-0.0119	0.0178	-0.6700	0.5040	-0.1345	0.1345	-0.0189	0.0175	-1.0800	0.2800
PLANNING ^a	0.0722	0.0657	0.0127	0.0117	1.0900	0.2760	0.1146	0.0815	0.0176	0.0126	1.3900	0.1640
CCPAY ^a	-0.5087	0.0851	-0.0838	0.0133	-6.3100	0.0000	-0.3742	0.0947	-0.0587	0.0152	-3.8600	0.0000
ES	-1.44E-07	3.77E-07	-2.51E-08	0.0000	-0.3800	0.7030	-2.76E-07	4.42E-07	-4.20E-08	0	-0.63	0.531
FRIEND ^a	-0.18431	0.066738	-0.03348	0.0126	-2.6500	0.0080	-0.20237	0.085999	-0.03296	0.01501	-2.2	0.028
CONS	-1.82884	0.236992					-1.32744	0.34982				
# of Obs.	21920						16935					
# of PSU	4384						3388					

(^a) dy/dx is for discrete change of dummy variable from 0 to 1.

Credit card debts are considered to be one of the main causes of bankruptcy but the results suggest that: it is not the absolute debt that matters, but the ratio of debt to the limit, or how close the household is to their credit limit. The closer the household to their credit limit the closer they get to filing for bankruptcy. The credit card interest rate has also a positive effect of bankruptcy; a 1% point increase in the rate will increase the probability of bankruptcy by almost 0.2%.

Household income has no significant effect on bankruptcy, one explanation could be that income effect changes with income groups, when I run the same regression for household whose income is less than \$46,000, the effect was positive and significant, and negative and significant when income is higher than \$46,000. An increase in income will not prevent filing bankruptcy unless income is above \$46,000. On the other hand, household wealth decreases the probability of filing bankruptcy; the effect is very small, but it is negative and significant.

Households who own their homes are more financially secure; they are 2.3% less likely to file for bankruptcy and 1.6% for household with credit cards. On the contrary, households who are behind their payment schedule (having a bad history or less financial secure) are 7.4% more likely to file for bankruptcy.

Age of the head of the household has a positive effect on bankruptcy, the older the head the more likely they will file for bankruptcy. Any additional member to the household will increase the probability of bankruptcy by 1.3%. Having access to internet increases the household probability for filing for bankruptcy, in spite of all the helpful financial information it provided. Shopping online increases credit card debt and the

debt-limit ratio, which increases the chance of bankruptcy. Finally, having a friend who can lend you \$3,000 or more decreased the probability of filing for bankruptcy by 3.3%. Now you know what kind of friend you need to look for.

2.7 Conclusion

Bankruptcy is a financial crisis that could strike anyone, despite of age, sex, income, race, education and whether they are prepared for it or not. Saving and borrowing attitudes have no effect on household decision for filing bankruptcy, except for paying credit card balance in full every month. Credit card effect does not come from the absolute debt, but from how close that debt to the credit limit. The results suggest that households cannot avoid bankruptcy; neither can they be prepared for it.

To reduce the chance of bankruptcy households should be encouraged to pay credit card debt in full every month, and to pay all loans and mortgage payment as scheduled or ahead of schedule. Medical bankruptcy could take place even when household is saving for medical expenses. Improving the medical and social insurance might ease some of the financial pressure especially when a household is faced with a serious illness.

Behavioral economist and behaviorists had suggested a different view about household rationality. More research needs to be done about the consumer psychological and mental state of mind when filing for bankruptcy. This kind of researches will help determining whether the consumers are maximizing their welfare, or jeopardizing the maximization for some behavioral reasons.

CHAPTER 3

DOES “FOOD-AWAY-FROM-HOME” ENCOURAGE OVERSPENDING?

3.1 Introduction:

Overspending is the case in which the household is spending more than their income. According to SCF2007, 19% of households in the US are spending more than their income. To fill the gap; the household could be spending their own savings or borrowing from different sources such as: credit cards, home mortgage or personal loans. One should differentiate between household decision to smoothing consumption over life cycle (Fan, Chang & Hanna, 1992), and persistent overspending. In any case, overspending always leads to negative savings rates.

Since 1990 the personal saving rate (PSR)²³ as a percentage of the disposable personal income (DPI) has been declining at a fast rate. The rate declined from 11.5% in the 1980s to 6.5% in the 1990s. With the start of the new millennium the personal saving rate was as low as 1.8% in 2002, and it reached a negative rate in the third quarter of 2005 at -0.7% (see graph 3.1). The average for the past nine years (2000-2008) was 1.6%. Compared to other industrialized countries, the US had one of the worst personal saving rates during the past twenty years²⁴.

²³ The personal saving rate computed by the Bureau of Economic Analysis (BEA) includes households and other nonprofit institutions and entities, and it is calculated simply by taking the difference between disposable personal income and personal consumption expenditures, then dividing this quantity by disposable personal income.

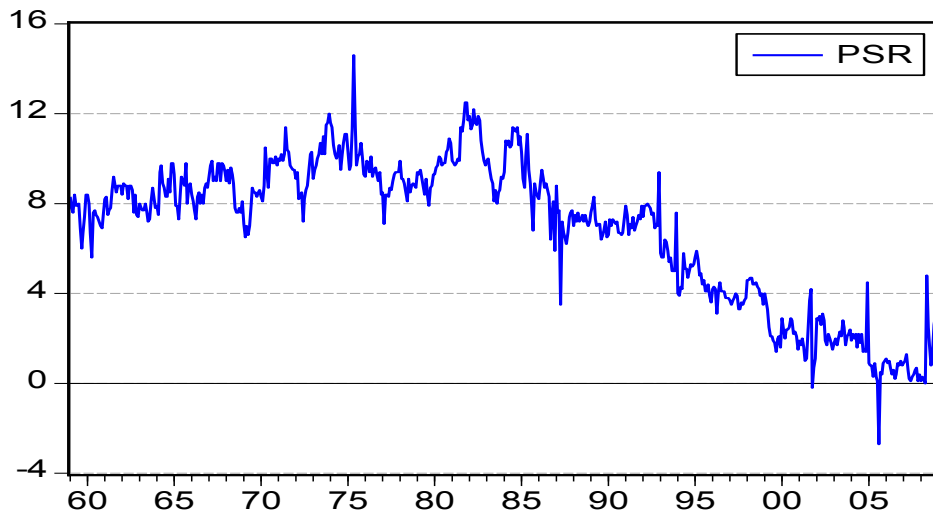
²⁴ National Economic Trend, Cross-Country Personal Saving Rate, Federal Reserve Bank of St Louis, May 2006.

The ideal saving rate for an individual should reflect his willingness to consume less now in order to be able to consume more in the future (Hanna, Chang and Regina, 1995), in another word, individuals should save enough to avoid a substantial decline in their living standard in the future.

The Personal Saving Rate (PSR) measured by BEA might be revised upward. (Steindel, 2007), similarly for the NIPA estimates for PSR (Garner, 2006), which makes some of the concerns about the negative personal saving less supported. On the other hand, alternative measures of personal saving do not change the fact that personal saving has fallen dramatically in the past two decades; however, they shed light on some of the underlying sources of influence on trends in personal saving (Reinsdorf, 2007). Inferences based upon the U.S. personal saving rate should be taken carefully, and the changes in the personal saving rate may provide useful information on future disposable personal income (Nakamura and Stark, 2006).

While the savings rates were declining, household borrowing was rising substantially. Between 1990 and 2006 total borrowing increased by over 400 percent²⁵. After the second half of 2006 the borrowing and saving rate start to stabilize due to tight lending policies and to the decrease in home prices. According to the SCF2007, 46% of the households spent all or more than their income over the past year (the prior year to the year of the interview). Most of the household saving comes from the richest 20% households (the upper end of the income distribution) according to the Consumer Expenditure Survey 2007.

²⁵ National Economic Trend, Household Retrenchment, Federal Reserve Bank of St Louis, April 2009.



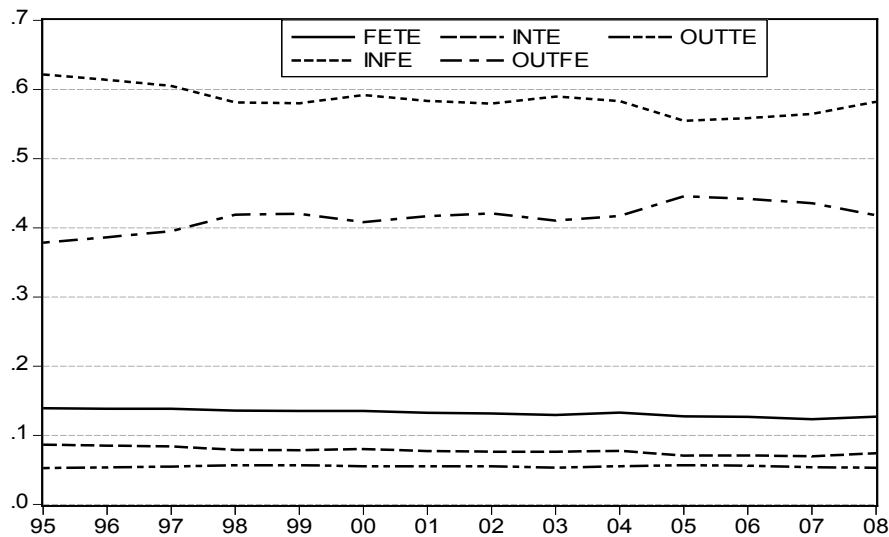
Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Figure 3.1: Personal Saving Rates

There are a lot of reasons why households overspend. One reason is that households tend to spend more when they pay by credit cards comparing to paying with cash money (Raghubir and Srivastava, 2008). Another reason is the household income level. The household's income level plays an important role in whether the household overspend or not (Bae, Hanna and Lindamood, 1993).

The consumer expenditure on food increased by 2.9% annually since 1995, and the Food Away From Home (FAFH) expenditure increased by 3.7% annually for the same period. As a percentage of total expenditures, FAFH expenditure fluctuated around 5.5%, and it fluctuated around 40% as a percentage of food expenditures (see Graph 3.2).

In 2008 the average household expenditures on food was \$8,255²⁶. Out of that, household spent \$3,449 on eating out. According to the SCF2007, the average household spent around \$5270 on food, and \$2134.5 on Food Away From Home²⁷. As a percentage of food expenditures, FAFM expenditures accounted for around 38.4%.



Source: The author calculations based on the Consumer Expenditures Survey, 1995-2008. (see Table 4.2)

Figure 3.2: Food and FAFH Expenditures

The factors that determine whether a household will eat out vary with race, income and age groups. There are a bundle of explanations why a household will chose to eat outside the home. Income and the number of hours worked per week have a positive influence on how many FAFH visits the household makes (Dong et al., 2000). The age effects show that younger age groups spent more on FAFH, both in absolute value and as a percentage of their expenditures (Zan and Fan, 2010). There is another cost for eating

²⁶ The Consumer Expenditure Survey 2008.

²⁷ Without weight adjusting.

out: the health cost. Eating out increases the daily calories from fat and added sugar (Todd, Mancino and Lin, 2010). Furthermore, the same study found that eating out twice a week will result in 2 extra pounds each year.

This paper will try to find out whether households who eat out are different from households who cook at home when it comes to overspending.

3.2 Theoretical Background:

Eating out could affect overspending in more than one way. First, since it saves time, it could increase income by allowing the household to work more (the opportunity cost of cooking at home is giving up working hours). This prediction based is on model similar to the Shopping Time Model, a Cash In Advance (CIA) model, where the consumer is maximizing his life time utility:

$$\max \sum_{t=0}^{\infty} \beta^t u(c_t, l_t); \quad 0 < \beta < 1 \quad (18)$$

The household is endowed with one unit of time in each period, which is split between leisure, work and eating time:

$$1 = n_t + l_t + e_t \quad (19)$$

where n_t is the household working time, l_t is time for leisure, and e_t is cooking and eating time. Cooking and eating time depends on whether the household eats out or at home:

$$e_t = f(in_t, out_t) \quad (20)$$

Since eating at home requires more time (cooking times, eating time and cleaning time), so we expect $f_{in} > 0$, and since eating out does not include cooking and cleaning we are

expecting $f_{out} < 0$. So eating out will decrease e_t and consumer could spend the time saved in working more (more income) or more leisure time, in both cases his utility will increase since $u_e < 0$.

On the other hand, eating out costs more and it increases expenditure on food and it might increase the household health cost. So the net effect of eating out on overspending is unclear. It depends on which effect is bigger, the effect on income or the effect on expenditures.

3.2 Data:

The main data source for this study is a cleaned and imputed version of the *Survey of Consumer Finances* (SCF 2007). Households who reported no food expenditures and positive FAFH expenditures were eliminated from the sample, as were households with negative income. The data shows that 19% of households spend more than their income; the average income for an overspending household was \$54,762, which is 63% of the income of a household who doesn't overspend.

A major difference between the two groups comes from the variable bad history (being behind payments schedule). Only 17% of households without overspending had a bad history, compared to 37% for households with overspending. One could say that households without overspending are more financially secure. Another major difference comes from credit card debt; households with overspending carry twice as much as households without overspending. Since credit cards are an easy and unsecured way to

borrow, it is considered to be a convenient method to finance the gap between income and expenditures.

Even though households with overspending spend more on food expenditures, they spend less on FAFH. Only 35% of their food expenditures went to FAFH, compared to 39% for household without overspending.

Table (3.1) Descriptive Statistics of the Variables Used in the Study

Variables	All Households		Households without Overspending		Households with Overspending	
	Mean	Std. Err.	Mean	Std. Err.	Mean	Std. Err.
OS	0.190	0.007	0.000	0.000	1.000	0.000
AGE	49.989	0.327	50.515	0.370	47.751	0.679
AVERSE	0.798	0.007	0.803	0.008	0.779	0.017
BADHIST	0.207	0.007	0.169	0.007	0.372	0.019
CHECKING	8,347.4	528.3	9,325.2	636.2	4,184.2	612.4
CCDEBT	3,366.3	159.7	2,786.3	159.3	5,836.1	482.3
EDU	13.260	0.051	13.271	0.057	13.214	0.107
HSIZE	2.427	0.025	2.384	0.027	2.608	0.060
LIQASSETS	346,128.0	9,671.4	376,646.2	11,378.0	216,180.8	15,660.6
INCOME	81,031.7	1,619.6	87,201.0	1,928.1	54,762.5	2,265.9
MARRIED	0.511	0.009	0.522	0.010	0.467	0.021
OWNHOME	0.613	0.009	0.619	0.010	0.586	0.020
RACE	0.738	0.008	0.750	0.009	0.688	0.019
CCRATE	9.030	0.141	9.092	0.153	8.762	0.359
INTERNET	0.613	0.009	0.612	0.010	0.617	0.020
SEX	0.724	0.008	0.736	0.009	0.671	0.020
FOOD	5,270.4	59.3	5,215.0	62.7	5,506.7	160.4
FAFH	2,134.5	41.5	2,183.9	46.1	1,924.1	95.1
RATIO	38.389	0.569	39.395	0.632	34.103	1.300
# of PSU's	4370		3672		701	
# of Obs.	21850		18356		3494	

3.4 The Statistical Model:

There are a lot of factors that could push a household to overspend. This paper focuses on the FAFH variables with some control variables for the financial and demographic characters of the household. The household overspending variables could be represented as follows:

$$OS_i = f(FV_i, DV_i, FAFH_i, \varepsilon_i) \quad (21)$$

where: (FV) are the financial variables, (DV) are the demographic variables and (F) are the Food Away From Home variables, and ε_i is the error term, which is assumed to be normally distributed ($\varepsilon_i \sim N(0, \sigma_2^2)$). The overspending variable could be defined as the following:

$$OS_{li}^* = \beta_l' X_{li} + u_{li} \quad (22)$$

Since $OS_{ji}^* (j=1,2)$ is unobservable, we observed OS_{ji} a dummy variable that can be defined as:

$$OS_i = \begin{cases} 1 & OS_i^* > 0, \text{ (Household is Overspending)} \\ 0 & OS_i^* \leq 0, \text{ (Otherwise)} \end{cases} \quad (23)$$

Based on the previous relations and definitions, we could obtain:

$$P(OS_{ji} = 1) = P(u_{ji} > -\beta_j' X_{ji}) = 1 - F(-\beta_j' X_{ji}) \quad (24)$$

and the likelihood function could be written as:

$$L_j = \prod_{OS_{ji}=0} F(-\beta_j' X_{ij}) \prod_{OS_{ji}=1} 1 - F(-\beta_j' X_{ij}) \quad (25)$$

We assume that the accumulative distribution of $u_{ji} \sim IN(0, \sigma^2)$, which makes this model a probit model, in this case:

$$F(-\beta' X_i) = \int_{-\infty}^{-\beta' X_i / \sigma} \frac{1}{2\pi^{1/2}} \exp\left(-\frac{t^2}{2}\right) dt \quad (26)$$

The marginal effect of the dependant variable X_j is equal to:

$$ME_j = \frac{\partial P(OS_i = 1)}{\partial X_{ji}} = \frac{\partial F(\beta' X_i)}{\partial X_{ji}} \quad (27)$$

3.5 Empirical Results

Equation (5) was estimated using the Survey Data Analysis in STATA 10.1. Table (3.2) represents the result of a *svy probit* estimation. Using the Food Away From Home (FAFH) expenditures shows that it does not have any significant effect on household's overspending, which means that the effect from the income side is equal to the cost effect. The FAFH shows some positive effect when income is higher than \$200,000, indicating that the cost effect is higher than income effect. The high cost effect might come from eating at fine dining places for this income group.

The same regression was repeated by replacing FAFH by the ratio of FAFH to Food expenditures, the results shows that the ratio has a negative effect on overspending, indicating that eating out more as a percentage of food expenditures will reduce the probability of overspending. In this case the income effect is dominating the cost effect. The marginal effect of the ratio shows that a 1% increase in the ratio will increase the probability of overspending by 0.057%.

The results indicate that the probability of overspending decreases with income, which makes perfect sense, since overspending the gap between income and expenditures. On the other hand household's wealth and the amount they have in checking account have no effect on overspending.

Most of the household demographic variables didn't have any effect on overspending; there are no significant differences between: male and female, whites and nonwhite, young and old, levels of education, own a home or renting, risk taker and risk averse, and whether the household have access to the internet or not. The only demographic variable that has effect on overspending is the household size, with every additional member to the household, the probability of overspending increases by 2%.

Credit card debt has a positive effect on overspending; credit cards are an easy and unsecured way to finance the overspending gap (70% of household have at least one credit card). An increase of \$1000 in credit card debt will increase overspending probability by 0.5%.

On the other hand, the credit card interest rate has no effect on overspending; household will borrow to finance their extra expenditures regardless of the price they will pay for it. Households with bad financial history are 16% more likely to overspend than household with good history; this makes it the single most effective variable on overspending.

Table (3.2) *svy probit* Estimation Output

OS	Using FAFH Expenditures						Using the Ratio: FAFH/Food Expenditures					
	Probit		Marginal Effects				Probit		Marginal Effects			
	Coef.	Std. Err.	dy/dx	Std. Err.	z	P> z	Coef.	Std. Err.	dy/dx	Std. Err.	z	P> z
AGE	-0.002	0.002	0.000	0.001	-0.740	0.459	-0.002	0.002	-0.001	0.001	-1.030	0.305
AVERSE*	-0.104	0.069	-0.027	0.019	-1.460	0.145	-0.113	0.070	-0.030	0.019	-1.570	0.117
BADHIST*	0.566	0.061	0.167	0.020	8.360	0.000	0.565	0.061	0.166	0.020	8.320	0.000
CHECKING	-6.01E-07	8.34E-07	-1.54E-07	0.000	-0.720	0.471	-5.94E-07	8.26E-07	-1.52E-07	0.000	-0.720	0.472
CCDEBT	1.74E-05	3.24E-06	4.47E-06	0.000	5.330	0.000	1.74E-05	3.28E-06	4.46E-06	0.000	5.270	0.000
EDU	0.008	0.011	0.002	0.003	0.750	0.454	0.010	0.011	0.002	0.003	0.880	0.381
HSIZE	0.084	0.023	0.022	0.006	3.730	0.000	0.074	0.023	0.019	0.006	3.240	0.001
LIQASSETS	8.80E-09	1.50E-08	2.26E-09	0.000	0.590	0.557	8.34E-09	1.48E-08	2.14E-09	0.000	0.560	0.573
INCOME	-9.69E-07	3.57E-07	-2.49E-07	0.000	-2.720	0.007	-9.07E-07	3.36E-07	-2.33E-07	0.000	-2.700	0.007
MARRIED*	-0.097	0.080	-0.025	0.021	-1.210	0.225	-0.107	0.080	-0.028	0.021	-1.340	0.181
OWNHOME*	0.084	0.064	0.021	0.016	1.320	0.185	0.090	0.064	0.023	0.016	1.410	0.157
RACE*	-0.095	0.064	-0.025	0.017	-1.450	0.147	-0.098	0.064	-0.026	0.017	-1.510	0.132
INTERNET*	-0.042	0.062	-0.011	0.016	-0.670	0.501	-0.039	0.062	-0.010	0.016	-0.630	0.529
CCRATE	-0.005	0.004	-0.001	0.001	-1.280	0.202	-0.004	0.004	-0.001	0.001	-1.150	0.252
SEX*	-0.168	0.078	-0.045	0.021	-2.090	0.036	-0.147	0.078	-0.039	0.021	-1.830	0.067
FAFH	-7.07E-06	1.21E-05	-1.82E-06	0.000	-0.580	0.559						
RATIO							-0.002	0.001	-0.00057	0.000	-2.350	0.019
CONS	-0.917	0.210					-0.828	0.215				

(*) dy/dx is for discrete change of dummy variable from 0 to 1

3.6 Conclusion

Eating out does not encourage overspending. The FAFT expenditures have no effect on overspending, and it has a negative effect when it is taking as a ratio of food expenditures. Anyone could be overspending, regardless of age, sex, race, education, wealth and marital status. Overspending decreases with income and increase with household size. Household who are behind their payments schedule are more likely to be overspending. Overspending does not respond to the change in the credit card interest rate.

Credit card encouraged household to overspend by providing them with an easy way to borrow and an easy way to spend. Households need to be educated about spending what they don't have. Each household might have different combination of reasons for overspending, each household needs to understand their own spending habit and develop the good spending habits. Basic financial and money management education help households better manage their spending.

The above results could change if we add the health costs of eating out; many studies found out that there are health costs for eating out. Adding those costs to the cost of eating out might change the effect of eating out on overspending.

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APPENDICES

(4) Appendix:

(4.1) Description of variables used in the study

Variable	Description
INTERNET	Dummy, 1 if respondent has access to the internet, 0 otherwise.
BR	Dummy, 1 if household ever filed for bankruptcy.
OS	Dummy, 1 if Household spending is higher than income, 0 Otherwise.
AGE	Respondent age
AVERSE	Dummy, 1 if household takes average or less financial risk, 0 otherwise.
BADHIST	Dummy, 1 if respondent behind payment schedule, 0 otherwise.
CHECKING	The sum of all checking accounts.
CCDEBT	Sum of all debts on all credit cards
EDU	Years of Education (1 -17)
HSIZE	The size of Household, # of individuals living in the household
LIQASSETS	Sum of the respondent net liquid assets.
INCOME	Household permanent Income
LIMIT	Sum of limits on all credit cards
RATIO (Ch02)	Credit Card debt over credit card limit,
MARRIED	Dummy, 1 if respondent is married, 0 otherwise.
OPTIM	Dummy, 1 if respondent is optimistic about the future of the economy.
OWNHOME	Dummy, 1 if respondent owns home, 0 otherwise.
RACE	Dummy, 1 if respondent is white, 0 otherwise,
INTERNET	Dummy, 1 if respondent has access to the internet, 0 otherwise.
CCRATE	Interest rate on card with largest balance.
SEX	Dummy, 1 if respondent is male. 0 otherwise.
GOODIDEA	Dummy, 1 if respondent thinks it is a good idea to buy things on installment plan. 0 otherwise.
ATTITUDE	Dummy, 1 if respondent feels it is all right to borrow money to cover the expenses of a vacation trip or to finance the purchase of a fur coat or jewelry, 0 otherwise.
MD	Dummy, 1 if respondent expects any foreseeable major medical expenses that they have to pay for themselves, and whether the household is actually saving for these medical expenses, 0 otherwise.
PLANNING	Dummy, 1 if respondent thinks that the time period of 5-10 years or more, is the most important period, when planning for saving and spending, 0 otherwise.
CCPAY	Dummy, 1 if the respondent pays off the total credit card balance owed on the account in full each month, 0 otherwise.

ES	How much dose the household think they need to have in savings for emergencies and other unexpected things that may come up.
FRIEND	Dummy, 1 if respondent has a friend who can lend them \$3,000 or more, 0 otherwise.
FOOD	Household Expenditures on Food
FAFH	Household Expenditures on Food Away From Home
RATIO (Ch03)	FAFH/FOOD

(4.2) Total Expenditures and Food Expenditures from Consumer Expenditures Survey.

YEAR	TE	FE	IN	OUT	FETE	INTE	OUTTE	INFE	OUTFE	GFE	GOUT
1995	41,144	5,725	3,559	2,167	13.91	8.65	5.27	62.17	37.85		
1996	43,036	5,956	3,655	2,301	13.84	8.49	5.35	61.37	38.63	4.03	6.18
1997	44,101	6,102	3,692	2,411	13.84	8.37	5.47	60.50	39.51	2.45	4.78
1998	44,974	6,100	3,545	2,555	13.56	7.88	5.68	58.11	41.89	-0.03	5.97
1999	47,149	6,372	3,695	2,677	13.51	7.84	5.68	57.99	42.01	4.46	4.77
2000	48,619	6,575	3,892	2,683	13.52	8.01	5.52	59.19	40.81	3.19	0.22
2001	50,822	6,733	3,928	2,805	13.25	7.73	5.52	58.34	41.66	2.40	4.55
2002	52,334	6,881	3,987	2,894	13.15	7.62	5.53	57.94	42.06	2.20	3.17
2003	53,030	6,864	4,047	2,817	12.94	7.63	5.31	58.96	41.04	-0.25	-2.66
2004	55,607	7,379	4,303	3,076	13.27	7.74	5.53	58.31	41.69	7.50	9.19
2005	60,401	7,698	4,269	3,429	12.74	7.07	5.68	55.46	44.54	4.32	11.48
2006	62,503	7,920	4,423	3,497	12.67	7.08	5.59	55.85	44.15	2.88	1.98
2007	64,104	7,900	4,460	3,440	12.32	6.96	5.37	56.46	43.54	-0.25	-1.63
2008	65,016	8,255	4,806	3,449	12.70	7.39	5.30	58.22	41.78	4.49	0.26
Avg.	53,207	6,979.6	4,054	2,925.7	13.18	7.62	5.50	58.21	41.79	2.88	3.71

Where:

- TE: Total Expenditures
- FE: Food Expenditures
- IN: Food Expenditures at Home
- OUT: Food Expenditures Away from Home (FAFH)
- GFE: Growth in Food Expenditures
- GOUT: Growth in FAFH
- FETE: $(FE / TE) * 100$
- INTE: $(IN / TE) * 100$
- OUTTE: $(OUT / TE) * 100$
- INFE: $(IN / FE) * 100$
- OUTFE: $(OUT / FE) * 100$

Source: The author calculations based on the Consumer Expenditures Survey, 1995-2008.


```
Code age
  0.  Inap. (No further persons)
*****
FOR THE PUBLIC DATA SET, TOP-CODED AT 95
*****
```

Averse (= 1 if X3014 = 3 or 4, 0 Otherwise)

TELEPHONE VERSION:
Which of the following statements comes closest to describing the amount of financial risk that you and your (husband/wife/partner) are willing to take when you save or make investments?

INTERVIEWER: IF MORE THAN ONE RESPONSE IS GIVEN USE THE FIRST CATEGORY THAT APPLIES.

1. *Take substantial financial risks expecting to earn substantial returns
2. *Take above average financial risks expecting to earn above average returns
3. *Take average financial risks expecting to earn average returns
4. *Not willing to take any financial risks

X3004

Now thinking of all the various loan or mortgage payments you made during the last year, were all the payments made the way they were scheduled, or were payments on any of the loans sometimes made later or missed?

1. *All paid as scheduled or AHEAD OF SCHEDULE
5. *Sometimes got behind or missed payments
0. Inap. (no types of loans: X413=(0, -1) and X421=(0, -1) and X424=(0, -1) and X427=(0, -1) and X430=(0, -1) and X7577=5 and X723=(0, 5) and X830=(0, 5) and X931=(0, 5) and X1101=5 and X1203=(0, 5) and X2206=(0, 5) and X2306=(0, 5) and X2406=(0, 5) and X7155=(0, 5) and X2507=(0, 5) and X2607=(0, 5) and X7182=5 and X1711=(0, 5) and X1811=(0, 5) and X1911=(0, 5) and X1416=(0, 5) and X1516=(0, 5) and X1616=(0, 5) and X1620=(0, 5) and X1032=(0, 5) and X2005=(0, 5) and X2015=(0, 5) and X2423=(0, 5) and X2624=(0, 5) and X7801=5 and X3120=(0, 5) and X3220=(0, 5) and X3320=(0, 5) and X3125=(0, 5) and X3225=(0, 5) and X3325=(0, 5))

Checking Accounts (= sum of X3506,X3510,X3514,X3518,X3522,X3526)

```
X3529(#7)      How much is in all your remaining checking accounts?
                PROBE: What was the average over the last month?

                How much is in all your family's remaining checking accounts?
                PROBE: What was the average over the last month?

                Code amount
                -1.  Nothing
                0.  Inap. (R has no checking account: X3501^=1; fewer than
                    7 accounts: X3504<7)
                *****
                ORIGINALLY ALLOWED VALUES: [0,...,999999999]
                IF < 0, OUT OF RANGE: ILLEGAL VALUE ERROR MESSAGE
                *****
```

Credit Card Debt =(sum of X413,X421,X424,X427,X430,X7575)

63

[illegible]

Liq.Assets Measures: (= sum of 1,2,3,4,5,6,7,8)

1. Transaction Accounts,

- Checking account: x3506, x3510, x3514, x3518, x3522, x3526 +x3529)
- Roth IRA: x6551, x6559, x6567
- Roll-over IRA: x6552, x6560, x6568
- Regular or other IRA: x6553, x6561, x6569
- Keogh: x6554, x6562, x6570
- CD: x3721

2. **Savings/Money Market Accounts:** (x3730, x3736, x3742, x3748, x3754, x3760, x3765)

3. Stocks :

- Publicly Traded Sucks: x3915
- "Cash" or "call money" account at a stock brokerage: x3930

4. **Bonds** : (All Bonds: x6705)

- Saving Bonds: x3902.
- Mortgage Backed Bonds: x3906.
- U.S. Government bonds or Treasury bills: x3908
- State or municipal bonds, or other tax-free bonds: x3910
- Foreign bonds: x7633.
- Corporate or any other type of bonds: x7634

5. **Mutual and hedge funds:** (all Mutual Funds: x6704)

- Stock mutual funds: x3822
- Tax-free bond mutual funds: x3824
- Government or government backed bond mutual funds: x3826
- Other bond mutual funds: x3828.
- Combination funds: x3830.
- Other mutual funds or hedge funds: x7787.

6. Annuities, Trusts, And Managed Investment Accounts

- Annuities: x6577
- Trust or Managed Investment Account: x6587

7. Life insurance

- Term Life Policies: x4003
- Cash-Value Policies: x4005

8. **Misc financial assets** (Gold, Gem Stones, Antiques, Collections (x4022, x4026, x4030)

9.

[illegible]

Income

X5729 What would be the correct total?

How much was the total income you received in 2006 from all sources, before taxes and other deductions were made?

NOTE: for the person in position #1, this variable contains the current living arrangement, which is not necessarily the information reported in the interview. For example, a respondent may have answered "married" to this question, but actually be living with a partner; in this case, the variable has been recoded coded "partner": such instances may be detected by the fact that J8023=8 and X102=3.

 FOR THE PUBLIC DATA SET (EXCEPT X8023 AND X105), CODES
 3 AND 5 ARE COMBINED WITH CODE 4; CODE 2 IS COMBINED
 WITH CODE 1

[illegible]

Optim (= 1 if X301 = 1 , 0 Otherwise)

X301 I'd like to start this interview by asking you about your expectations for the future. Over the next five years, do you expect the U.S. economy as a whole to perform better, worse, or about the same as it has over the past five years?

1. *Better
2. *Worse
3. *About the same

[illegible]

OwnHome (= 1 if X701 = 1 , 0 Otherwise)

X701 Now I have some questions about your home.

Do you own this ranch, do you pay rent, do you own it as a part of a condo, co-op, townhouse association, or what?

Do you own this farm, do you pay rent, do you own it as a part of a condo, co-op, townhouse association, or what?

Do you own this (house and lot/apartment), do you pay rent,
do you own it as a part of a condo, co-op, townhouse
association, or what?

Do you and your family living here own this ranch, do you pay rent, do you own it as a part of a condo, co-op, townhouse association, or what?

Do you and your family living here own this farm, do you

Do you and your family living here own this (house and lot/apartment), do you pay rent, do you own it as a part of a condo, co-op, townhouse association, or what?

- *****
CRITICAL VARIABLE: If the home ownership is answered
"don't know" or "refuse," the following text appears in
CAPI:

ATTENTION:
Homeownership is a critical detail in family finances.
Without this information, it would be wasting your time to
go on with the interview.

I will terminate the interview at this point and I would like to thank you for your time.

TERMINATE INTERVIEW
GO BACK AND CHANGE OWNERSHIP

[illegible]

Race (= 1 if X6809 = 1 , 0 Otherwise)

X6809 IN PERSON VERSION:
 (SHOW CARD 12)
 Please look at this card. Which of these categories do you
 feel best describe you: (white, black or African-American,
 Hispanic or Latino, Asian, American Indian or Alaska Native,
 Hawaiian Native or other Pacific Islander, or another
 race?)

TELEPHONE VERSION:
Which of these categories do you feel best describe you:
white, black or African-American, Hispanic or Latino,
Asian, American Indian or Alaska Native, Hawaiian Native
or other Pacific Islander, or another race?

CODE ALL THAT APPLY: CODE RESPONSES IN THE ORDER THEY ARE GIVEN

- ```

1. *WHITE (INCLUDE MIDDLE EASTERN/ARAB WITH WHITE); Caucasian
2. *BLACK/AFRICAN-AMERICAN
3. *HISPANIC/LATINO
4. *ASIAN
5. *AMERICAN INDIAN/ALASKA NATIVE
6. *NATIVE HAWAIIAN/PACIFIC ISLANDER
-7. *OTHER

```

NOTE: This question was asked only of the designated respondent (if X8000=5, this person is the head, otherwise it is the spouse/partner)

NOTE: CARD 12 contains the following text printed in a vertical column: "Native American; Eskimo; Aleut," "Asian; Pacific Islander," "Hispanic," "Black; African American," "White," "Other."



```
1. *Good idea
3. *GOOD IN SOME WAYS, BAD IN OTHERS
5. *Bad idea
```

- NOTE: CARD 9 contains the following text in a vertical column: "Education for your children," "Education for others," "Future health care for self/spouse," "Health care for others," "Purchase of new home," "Other major financial obligation."

Are you saving for this expense now?

- [illegible]

X3008 IN PERSON VERSION:  
(SHOW CARD 5)  
In planning (your/your family's) saving and spending, which of the time periods listed on this page is most important to [you/you and your (husband/wife/partner)]?

1. \*NEXT FEW MONTHS
2. \*NEXT YEAR
3. \*NEXT FEW YEARS
4. \*NEXT 5-10 YEARS
5. \*LONGER THAN 10 YEARS

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Code amount  
 -1. Nothing  
 \*\*\*\*\*  
 ORIGINALLY ALLOWED VALUES: [0,...,9999999]  
 IF < 0, OUT OF RANGE: ILLEGAL VALUE ERROR MESSAGE  
 \*\*\*\*\*

X3025 INTERVIEWER: CODE WITHOUT ASKING IF ALREADY MENTIONED.  
 (And that amount is per...?)

Code frequency  
 1. Day  
 2. \*Week  
 3. \*Every two weeks  
 4. \*Month  
 5. \*Quarter  
 6. \*Year  
 8. Lump sum/one payment only;in total  
 11. \*Twice per year; every six months  
 31. \*Twice a month  
 -1. Nothing  
 -7. \*Other

X3026 Do you have any food delivered to the door which isn't  
 included in that?

INCLUDE CARRY-OUT HERE.

1. \*YES  
 5. \*NO

X3027 IF R SHARES EXENSES WITH ROOMMATES NOT IN THE PEU, INCLUDE  
 ONLY R'S (FAMILY'S) SHARE.

How much do you spend on that food?

Code amount  
 0. Inap. (No expenses for food delivered to the door: X3026^=1)  
 -1. Nothing (for example, "Meals on Wheels")  
 \*\*\*\*\*  
 ORIGINALLY ALLOWED VALUES: [0,...,9999999]  
 IF < 0, OUT OF RANGE: ILLEGAL VALUE ERROR MESSAGE  
 \*\*\*\*\*

X3028 INTERVIEWER: CODE WITHOUT ASKING IF ALREADY MENTIONED.  
 (And that amount is per...?)

Code frequency  
 1. Day  
 2. \*Week  
 3. \*Every two weeks  
 4. \*Month  
 5. \*Quarter  
 6. \*Year  
 8. Lump sum/one payment only;in total  
 11. \*Twice per year; every six months  
 31. \*Twice a month  
 -1. Nothing  
 -7. \*Other



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