Do Financial Planners Serve the Interests of Their Clients?
Use of Financial Planners, Credit Card Balances and Liquid Assets

Financial planners should help their clients reach goals, and give advice based on the clients' interests. Based on two multivariate analyses of the 2001 Survey of Consumer Finances, households that report using financial planners for savings or investment advice are more likely than otherwise similar households that do not report using financial planners to have engaged in the irrational practice of carrying credit card balances when they have sufficient liquid assets to pay down the balances. Among households carrying credit card balances, those who use financial planners have higher levels of liquid assets relative to income than otherwise similar households that do not use financial planners. It is possible that financial planners do not pay attention to the cost of carrying credit card debt that could be paid down because of limited focus on the issue in their education, or because giving advice to pay down credit card balances does not generate compensation.

Lan Bi, Epsilon[1]
Sherman D. Hanna, The Ohio State University[2]

Introduction

Many households in the United States carry non-mortgage debt balances while they have sufficient financial assets to pay off the debt (Spencer and Fan 2002). Credit cards are an increasingly popular form of debt, with outstanding balances having grown from a negligible amount in the 1960s to almost 10% of disposable personal income by 2000 (Durkin 2000). Some consumers use credit cards only as a payment method, while others are revolvers, carrying balances from month to month (Kim and DeVaney 2001). In the 2001 Survey of Consumer Finances, among all credit card revolvers, the average credit balance was $3,874 and the average interest rate charged on the balance was 14.5%, while 58% of the revolvers had liquid assets in excess of their credit card balances (Bi 2004). Given the typically high interest rates on credit cards and the low aftertax returns on low risk financial assets, this behavior seems irrational, or at least inefficient for a fully informed household. Consider, for instance, a household with a credit card in 2001, paying an interest rate of 14.5%, and carrying a balance of $3,348, the mean amount of liquid assets for household carrying credit card balances. If that household had liquid assets in excess of what it needed for short-term transactions, but never used its excess liquid assets to pay off the credit card balance, over time the inefficiency would grow substantially. As an extreme example, assume that the household had $3,348 in a money market account with an aftertax interest rate of 2% per year, but also simply let a credit card that initially had the same balance accumulate at 14.5% for 30 years. Over that time period, the credit card balance would grow to $252,722, while the money market account would grow to $6,097.

Based on this type of analysis, some financial educators suggest paying off credit card balances as one of the top priorities of personal finance (Braze 2005). The general philosophy of the Practice Standards of the Certified Financial Planner Board supports the concept that financial planners should recommend paying off credit card balances, as one of the standards (400-1) states:

> *The financial planning practitioner shall consider sufficient and relevant alternatives to the client's current course of action in an effort to reasonably meet the client's goals, needs and priorities (Certified Financial Planner Board 2005).*

This research investigates whether financial planners appear to be giving appropriate advice on efficient credit card management. It examines the effect of using a financial planner on the likelihood of being a financially sufficient revolver, which defined as having liquid assets greater than one month's income and carrying credit card balances at the same time. This research also investigates the effect of using a financial planner on the level of liquid assets held by credit card revolvers.

Literature Review

Studies of Simultaneous Borrowing and Saving

Few research studies the behavior of simultaneously holding credit card debt and accumulating liquid assets. Spencer and Fan (2002) explore the behavior of simultaneously holding non-mortgage debt and financial assets, using a framework of saving motives and broad measures of debt and financial assets. They include credit card debt, installment debt, other debt, lines of credit, and home equity loans in their measure of debt, and measure all financial assets excluding checking accounts and retirement savings. They find that having a precautionary saving motive, an investment motive, an independence motive, a bequest motive, or a down payment motive increases the likelihood of being a simultaneous debtor and saver, while having a life cycle saving motive decreases the household's likelihood of being a simultaneous debtor and saver.

Laibson, Repetto, and Tobacman (2000) use a hyperbolic discounting model to explain the phenomenon of consumers simultaneously borrowing actively in the revolving credit card market and accumulating relatively large stocks of illiquid wealth. Hyperbolic consumers act as if they have endogenous time preferences, acting like exponential consumers with a high discount rate over short horizons, but acting patiently when accumulating illiquid wealth over long horizons. However, this model cannot explain the frequency of borrowing in the credit card market and the magnitude of liquid asset accumulation.

Using a dataset provided by credit card issuers from 1995 through 1998, Gross and Souleles (2002) also find a portfolio puzzle, that is, large amounts of asset holdings among bankcard borrowers, though this topic is not the focus of their study. Of households with bankcard balances, 95% have a positive net worth and one third hold liquid assets with a value of more than one month's income.

Hurst and Willen (2004) document the pattern of simultaneously holding both credit card debt and Social Security wealth. They consider a life-cycle model with both optimizing and "rule-of-thumb" households, and analyze two policy experiments, one to allow households to use Social Security wealth to pay off credit card debt, and another to exempt young households from Social Security contributions. Their simulations suggest that paying off debt first leads to increases in saving, reductions in debt and substantial increases in lifetime certainty equivalent consumption for both types of households.

Use of Financial Planners

Based on an analysis of the 1998 Survey of Consumer Finances, Elmerick, Montalto, and Fox (2002) report that 21% of U.S. households use financial planners, with 10% of all households obtaining advice on credit, 18% obtaining advice on saving and investments, and 7% obtaining advice on both credit and saving/investment issues. They find that the rate of using financial planners generally increases with education, income, and assets.

Financial planners typically learn about basic family finance issues in addition to technical aspects of dozens of other topics such as investments, but there seems to be little emphasis on the basic economic insight that paying off high interest credit card balances is the best possible investment. For instance, a leading textbook for financial planners covers the debt income ratio and warns against excessive debt, but does not mention that paying off credit card debt has a better rate of return than other low risk investments (Dalton et al. 2001).

There is a substantial literature in economics on the agency problem, which relates to the potential for conflict between the self-interest of an agent and the client the agent represents. For instance, Rutherford, Springer and Yavas (2005) show that real estate agents sell their own homes for 4.5% more than they sell otherwise similar homes of clients, even though the agents should have a fiduciary duty to serve the interests of their clients.

Theoretical Framework

In order to test the effect of using financial planners on the saving behavior of credit card revolvers while controlling for other possible explanatory factors, we start with a precautionary saving theory incorporating uncertainty and liquidity constraints. Two major extensions of the standard intertemporal utility maximization theory have been widely used in research on consumption and saving. One incorporates uncertainty into the standard theory, and the other incorporates liquidity constraints into the standard theory.

The buffer stock theory of saving is an extension of the standard intertemporal utility maximization theory, in which uncertainty about future income plays an important role. Buffer stock theory posits that consumers hold assets mainly to shield their consumption against unpredictable fluctuations in income (Carroll, Hall, and Zeldes 1992). Buffer-stock saving behavior can emerge from the standard dynamic optimization framework when consumers facing substantial income uncertainty are both impatient and prudent. Impatience makes consumers want

to spend down their assets, or even borrow against future income to finance current consumption, if income is certain. On the other hand, prudent consumers have a precautionary saving motive and are reluctant to draw down assets too far. This tension will imply the existence of a target wealth stock. If wealth is below the target, prudence will dominate impatience and the consumer will try to save; while if wealth is above the target, impatience will dominate, and consumers will plan to dissave. When consumers' uncertainty about future income increases, their target buffer-stock increases, and they increase their saving to build up wealth toward the new target.

People who use credit cards can be characterized as convenience users, who use the cards simply as a payment mechanism, or revolvers, who do not pay off their balances in full each month, and therefore "revolve" the debt (Kim and DeVaney 2001). Credit card revolvers are more likely to be impatient than convenience users, because they are actively borrowing, and, furthermore, they are borrowing at high interest rates. If those revolvers are also prudent, they would save at the same time to reach a target level at which they feel financially secure, at the cost of paying interest charges to credit card companies. For those who also consider available credit as a form of buffer stock, their target saving level may be adjusted according to their available credit line. Uncertainty would create or increase prudence among credit card users. Therefore, revolvers facing uncertainty about future income or other factors that would cause variation in their future consumption might want to save more than revolvers facing little uncertainty.

Deaton's saving theory with liquidity constraints adds a borrowing restriction to the standard intertemporal theory (Deaton 1991). Liquidity constraints mean that borrowing is not allowed or at least cannot exceed some fixed limit. A weak notion of liquidity constraints includes the situation where consumers can borrow only at high interest rates (Browning and Lusardi 1996).

Deaton assumes that consumers are prudent and have a precautionary demand for saving, and that the rate of time preference is larger than the real interest rate, which means consumers are impatient. Precautionary motives interact with liquidity constraints because the inability to borrow when times are bad provides an additional motive for accumulating assets when times are good, even for impatient consumers.

Based on Deaton's definition and the weak notion of liquidity constraints, it may be more appropriate to refer to liquidity constraints as credit constraints, due to the inability of the consumer to borrow or to borrow over a certain amount. Also, if the interest rate for borrowing is much higher than the interest rate for saving, it may reduce the consumers' willingness to borrow. Credit constraints are very relevant for impatient consumers who are willing to borrow (Browning and Lusardi 1996). Therefore, liquidity constraints should be a relevant factor to consider for credit card revolvers.

Based on simulations of both the buffer-stock theory and the theory with liquidity constraints for multiperiod utility, with the presence of uncertainty or/and liquidity constraints, impatient consumers would restrict their borrowing and save more than the optimal amount suggested by the certainty equivalent model. Carroll and Kimball (2001) present a theoretical explanation for why the existence of uncertainty or liquidity constraints or both would cause consumers to save more than the amount that the standard theory suggests. Furthermore, they show the important effect of future uncertainty or future liquidity constraints on current saving decisions.

Intuitively, prudence makes consumers under uncertainty save more to reduce the risk of a consumption drop. Constrained consumers have less flexibility in responding to shocks than unconstrained consumers, because they cannot spread out the effects of the shocks over time. Risk then has a bigger negative effect on expected utility for constrained consumers than for unconstrained consumers. The precautionary saving motive is increased by the desire to reduce the probability that the constraints will bind in the event of shocks. Both current liquidity constraints and future liquidity constraints increase the precautionary saving motive, because additional saving can reduce the probability that the constraints will bind in the future.

Theoretically, concavity of the consumption function causes prudence, which leads to precautionary saving motives, and under which consumers save more than the amount suggested by a standard consumption theory without uncertainty or liquidity constraints. Concavity of the consumption function can be induced or intensified by uncertainty or liquidity constraints.

We expect precautionary saving motives and expectation of future income declines to be positively related to the likelihood of being a revolver with enough liquid assets to pay off the credit card balance. Furthermore, we expect precautionary saving motives and factors related to uncertainty, including expectation of future income to decline, expectation of future economy to get worse, and fair or poor health condition, and factors related to liquidity constraints, including being turned down for credit before and high credit card utilization ratio, to be positively related to the level of revolver's liquid assets; while factors related to buffers for consumption shock, including health insurance coverage, cash value life insurance coverage, and spouse/partner working full time, to be negatively related to the level of revolver's liquid assets.

Based on the theories discussed above, we expect that if financial planners serve the interests of their clients, use of financial planners should be related to a lower likelihood of carrying a credit card balance, and revolvers who use financial planners should have lower levels of liquid assets than otherwise similar revolvers who do not use financial planners. If, however, the agency problem is important, then the opposite patterns are possible.

There are challenges in conducting an empirical study identifying whether financial planners serve the interests of their clients, even though anecdotal evidence is available. Rutherford et al. (2005) noted the lack of empirical studies on the question of whether an agency problem exists in the real estate brokerage market, and there is also a lack of studies on the question of whether there is an agency problem with financial planners. The present study investigates one part of financial planning advice, whether planners seem to have given appropriate advice on efficient credit card management, in terms of paying off credit card balances when there are sufficient liquid assets. Since credit card revolvers are paying interest rates much higher than the typical interest rates paid on liquid assets such as money market accounts, they should try to pay off or pay down their credit card balance using their holdings in monetary accounts. Given this and the fact that many credit card revolvers have substantial amounts of liquid assets (Laibson, Repetto, and Tobacman 2000; Gross and Souleles 2002), the saving behavior of credit card revolvers is of particular interest.

In order to study the effect of using financial planners on the saving behavior of credit card revolvers, we create two models. Model 1 explores what factors are related to carrying credit card balances among households with liquid assets in excess of one month's income. This model analyzes the effects of uncertainty, liquidity constraints, household characteristics, and use of financial planners on being a financially sufficient credit card revolver. Model 2 further analyzes the effects of uncertainty, liquidity constraints, household characteristics, and use of financial planners on the level of liquid assets, among households with credit card balances (revolvers).

Methodology

Data

This study uses data from the 2001 Survey of Consumer Finances (SCF), which contains information on 4,442 U.S. households. The SCF asks a series of questions related to credit cars and also provides comprehensive and detailed information about financial assets, socioeconomic information, demographic characteristics, and attitudes regarding financial issues, all of which are important to this study.

All descriptive analyses in this study are weighted using the SCF final nonresponse-adjusted sampling weights to produce point estimates that are representative of the U.S. population. Based on discussion by Deaton (1997), the multivariate analyses are not weighted. All five implicates are used for this study.

Sample

The samples for the two empirical models are different. Model 1 explores the factors associated with the likelihood of being financial sufficient revolvers instead of being financially sufficient convenience users, therefore, the empirical analysis focuses on financially sufficient credit card users. The sample for testing the hypotheses is limited to active users of major credit cards who also have liquid assets in excess of one month's income. In the 2001 SCF, 0.5% of households with credit cards report an interest rate of zero.[3] Since consumers with zero interest rates on credit cards would be rational to revolve, households with zero interest rates are excluded from the analyses. Only 4.3% of credit card users in 2001 have interest rates of 3% or less. The after-tax interest rates on liquid accounts are very likely less than the interest rates on credit card accounts, and low interest rates on credit cards are usually introductory rates and usually expire in a several months. Therefore, credit card users with non-zero but low interest rates are included. The analysis for Model 1 includes 1,579 financially sufficient credit card users, including 928 convenience users and 651 revolvers.

Model 2 examines the effect of uncertainty, liquidity constraints, and use of financial planners on the level of credit card revolver's liquid saving. Therefore, the sample for the multivariate analysis is limited to credit card revolvers. Households with zero interest rates are excluded from the analyses, because consumers with zero interest rates on credit cards would be rational to revolve and accumulate liquid assets. As a result, there are 1,723 credit card revolvers in the sample. The households in the sample represent about 58% of active bank card users, and about 39% of all American households.

Model 1: Likelihood of Being Financially Sufficient Revolvers

Logistic regression is used to determine the factors affecting the likelihood that a financially sufficient credit card user is a revolver. Logistic regression is appropriate given that the dependent variable is dichotomous.

Rubin's (1987) repeated-imputation inference (RII) techniques are used for more valid inference (Montalto and Yuh 1998).

Dependent Variable for Model 1. Holding certain types of financial assets while also revolving credit card debt may be considered rational under some circumstances. For example, restrictions on withdrawals from retirement accounts, or tax benefits for retirement saving may result in households having both high retirement saving levels and credit card debt. Households may also hold stocks and bonds simultaneously with credit card debt if the rate of return on the investments exceeds the interest rate charge on the credit card balance. Even if the rate of return does not exceed the interest charge, investors may be reluctant to sell investments due to loss aversion (Thaler 1999). Individuals may also hold some level of liquid assets for cash transactions. However, it seems puzzling for credit card revolvers to hold large amounts of liquid assets. One month's income is considered more than typically needed for monthly cash transactions (Gross and Souleles 2002). Given the above considerations, for purposes of our primary empirical work, we focus on credit card revolvers' liquid assets and define financially sufficient revolvers as revolvers with liquid assets in excess of one month's income.

The dependent variable for Model 1 is a dichotomous variable, and is coded as 1 if the credit card user has liquid assets in excess of one month's income and carries a balance on credit cards (financially sufficient revolvers), and 0 if the credit card user has liquid assets in excess of one month's income and carries zero balance on credit cards (financially sufficient convenience users).

Explanatory Variables for Model 1. Explanatory variables include use of financial planners for credit advice and use of financial planners for saving advice. There are also variables related to precautionary saving motives: directly indicated precautionary saving motives, ability to borrow from friends/relatives, subjective emergency funds, expectation of future income; variables related to mental accounting: number of liquid accounts, saving motives for commitments, saving motives for children's education, saving motives for investment, ownership of mortgage, ownership of other consumer loans; and other control variables: credit attitude, bankruptcy history, household annual income, general financial assets, age, household type, number of children under age 16, educational attainment, and race/ethnicity.

Definitions and measurements of these variables are described in appendix A.

Model 2: Level of Precautionary Saving

An ordinary least squares regression is used to test the effects of uncertainty, liquidity constraints, and use of financial planners on the level of precautionary saving held by households. Rubin's (1987) repeated-imputation inference (RII) techniques are used for more valid inference (Montalto and Yuh 1998).

Dependent Variable for Model 2. The dependent variable for Model 2 is the log of the ratio of liquid (monetary) assets to household monthly income.

There is no universal agreement on the appropriate measure of wealth to be considered as precautionary saving. Theoretically, precautionary saving is the amount in excess of the optimal saving level under the standard model of saving without uncertainty and liquidity constraints (Carroll and Kimball 2001). Liquid assets may correspond most closely to precautionary saving, as they are most readily and risklessly converted to cash (Starr-McCluer 1996; Bi and Montalto 2004).

The ratio of liquid (monetary) assets to household monthly income is used as a measure of the level of liquid saving. This ratio is similar to the liquidity ratio which is defined as liquid assets divided by monthly expenditure. In empirical studies of emergency funds, this ratio of liquid assets to household monthly income is commonly used as a proxy for the liquidity ratio to indicate the adequacy of household emergency fund holdings. A ratio, instead of the absolute amount of liquid assets, is chosen to measure the level of accumulated liquid assets. The ratio measurement gives a relative evaluation of the level of liquid saving, since it relates the household's liquid financial assets to the household's spending, as income is commonly used as a proxy for expenditure in emergency funds research. The absolute amount of liquid assets itself may not fully reflect the saving relative to needs.

If the monthly income of credit card users is below the household poverty threshold, the household's poverty threshold is used to replace monthly income to calculate the ratio. The dependent variable attempts to measure the accumulated precautionary saving relative to needs. For households with very low income the income level is likely to underestimate need, and therefore the household poverty threshold is used to indicate a minimum level of need.

The distribution of the ratio of liquid assets to monthly income is clustered at small values with relatively large values more sparsely distributed. This violates the assumption of OLS that the distribution of the error term is an independent identical normal distribution. A logarithmic transformation of the ratio will stretch out the difference between small values of the ratio clustered at the lower tail of the distribution, and compress the values at the upper

tail (Cohen, et al. 2003). After transforming the ratio into the logarithmic form, the distribution of the error terms is more likely to satisfy the assumption. For households reporting zero liquid assets, the value of 1 is assigned to make the logarithmic transformation possible.

Explanatory Variables for Model 2. Explanatory variables include use of financial planners for credit advice and use of financial planners for saving advice. There are also variables for precautionary saving motives; variables associated with uncertainty: expectation of future income, health condition of household members, expectation of future economy; variables associated with borrowing constraints: borrowing constraint experience, credit card utilization ratio, interest rate on the credit card balance; variables associated with buffers for consumption shocks: health insurance coverage, life insurance coverage, working status of the spouse/partner, amount of other financial assets; and other control variables: age, education, race/ethnicity, eligibility for Medicaid, and risk tolerance.

Definitions and measurements of these variables are described in Appendix B.

Results

Descriptive results for financially sufficient credit card users and logistic regression results for the likelihood of being financially sufficient revolvers are presented, then descriptive statistics for all revolvers and all convenience users, and the OLS regression results for the level of precautionary saving are presented.

Model 1: The Likelihood of Being Financially Sufficient Revolvers

Descriptive Statistics for Financially Sufficient Credit Card Users. Table 1 presents the descriptive statistics for financially sufficient convenience users and financially sufficient revolvers. The average balance carried by financial sufficient revolvers is $3,348. On average, revolvers are younger, have more children of age 16 and under, and have lower annual income and less financial assets, compared to convenience users. A higher percentage of convenience users have a Bachelor's degree or above compared to revolvers.

Results of Logistic Regression for Model 1. Table 2 presents the logistic regression results of the likelihood of being a financially sufficient revolver. After controlling for family life cycle factors, other socioeconomic and demographic variables, precautionary saving motives, having other debt, number of liquid accounts, using financial planners for saving/investment advice, and credit attitude are statistically significant in the model.

Financially sufficient households seeking help from financial planners for saving/investment advice have 1.5 times the odds of being revolvers as otherwise similar households that do not seek help from financial planners for saving/investment advice. However, whether or not the household uses a financial planner for credit/borrowing advice does not have a significant effect. Not surprising, compared to those who think credit is a bad idea, credit card users who think credit is a good idea are more likely to revolve.

Model 2: Level of Precautionary Saving

Descriptive Statistics of the Sample Characteristics. Table 3 presents the characteristics of 1,723 revolvers who were paying non-zero interest rates on their credit card balance in 2001. The characteristics of active convenience users are also presented in Table 4 for comparison. On average, revolvers held $3,874 in credit card debt and $13,015 in liquid assets, while convenience users held significantly larger amount of liquid assets, $68,746, and indicated a larger amount of precautionary saving need in case of emergency, $47,914, compared to revolvers. The average amount of household financial assets other than liquid assets was $70,576 for revolvers and $352,635 for convenience users, and the variances was very large for both groups.

The percent of revolvers was significantly lower than the percent of convenience users using financial planners for saving or investment advice, 20% and 23% respectively. The percentages using financial planners for credit or borrowing advice were lower for both groups compared to the percentages seeking help for saving or investment advice. About 10% of revolvers and 12% of convenience users used financial planner for credit or borrowing purposes.

Results of OLS Regression for the Level of Precautionary Saving. The following explanatory variables have significant effects on revolvers' levels of accumulated precautionary saving: directly indicated precautionary saving motives, health condition, being turned down for credit before, credit card utilization ratio, health insurance coverage, cash value life insurance coverage, the level of other financial assets, eligibility for Medicaid, using financial planners for saving or investment advice, being a saver, age of the respondent, being Black, and the interactions between utilization ratio no less than 0.9 and saving behavior, between cash value life insurance coverage and saving behavior, and between not willing to take risk and saving behavior.

297

Using a financial planner for saving and investment advice has a positive effect on the level of precautionary saving. A revolver seeking saving or investment advice from financial planners has a predicted liquidity ratio 46% higher than the ratio for an otherwise similar revolver not using a financial planner for saving or investment purposes.[4] The causality is unclear, though. The result could be due to the fact that revolvers with more liquid assets are more likely to use financial planners, or it could be due to the fact that financial planners focus more on building up liquid assets for their clients than on considering the overall saving and borrowing practice of their clients. The effect of using financial planners for credit or borrowing advice was not statistically significant.

Table 1
Descriptive statistics for financially sufficient convenience users and revolvers. (Mean (Standard Error) for continuous variables; column percents for categorical variables)

	Convenience Users (N=928)	Revolvers (N=651)
Bank card balance	---	$3,348
Explanatory Variables		
Precautionary saving motives		
Directly indicated motives *	22.07%	26.30%
Subjective emergency funds ($) ***	52,558 (101,713)	18,697 (30,187)
Ability to borrow from friends/relatives ***	85.68%	78.10%
Expectation of future income		
Constant, sure	39.36%	36.19%
Growth, sure	15.76%	15.14%
Decline, sure	23.11%	21.06%
Not sure	21.78%	27.60%
Other obligations		
Saving motives for commitments *	4.96%	2.82%
Have mortgage ***	49.55%	58.89%
Have other consumer loans ***	26.84%	57.48%
Saving motives for children's education		
Have motive and children of age 17-22	0.85%	1.81%
Have motive but no child of age 17-22	10.75%	8.78%
No such saving motive	88.40%	89.41%
Saving motives for investment	0.82%	1.53%
Number of liquid accounts	3.33 (0.68)	3.38 (0.81)
Use of financial planners		
For saving/investment advice	23.14%	25.31%
For credit/borrowing advice	11.98%	14.62%
Credit attitude		
Good	23.69%	31.62%
Neutral	42.98%	45.23%
Bad	33.33%	23.15%
Bankruptcy	2.92%	6.14%
Family life cycle variables		
Age (Mean) ***	55.42 (6.06)	48.34 (7.20)
Age ***		
Under 35	10.42%	19.79%
35 to 44	18.94%	24.55%
45 to 54	20.37%	24.10%
55 to 64	16.65%	14.91%
65 and over	33.62%	16.65%
Explanatory Variables	Convenience Users (N=928)	Revolvers (N=651)
Household type **		
Legally married couple	66.49%	59.27%

Male head, not legally married	15.15%	17.03%
Female head, not legally married	18.36%	23.70%
Number of children of age 16 and under ***	0.46 (0.33)	0.54 (0.44)
Other socioeconomic and demographic variables		
Gross Annual Income (Mean, $) ***	112,692 (149,510)	60,233 (32,679)
Gross Annual Income ***		
<= $13,000	14.74%	21.47%
$13,001 ~ $25,000	25.84%	30.48%
$25,001 ~ $42,000	20.14%	22.29%
$42,001 ~ $67,000	11.67%	13.35%
> $67,000	27.60%	12.42%
General financial assets (Mean, $) ***	514,493 (687,592)	156,812 (367,101)
General financial assets ***		
<= $20,000	10.42%	32.67%
$20,001 ~ $60,000	16.86%	24.34%
$60,001 ~ $150,000	20.95%	19.65%
$150,001 ~ $370,000	23.37%	15.02%
> $370,000	28.40%	8.31%
Education ***		
Less than high school	6.43%	8.85%
High school graduate	21.60%	29.00%
Some college	22.19%	26.14%
Bachelor's degree	28.46%	21.56%
Graduate school	21.32%	14.44%
Race/Ethnicity ***		
White	92.56%	78.68%
Black	1.93%	13.72%
Hispanic	2.02%	5.13%
Other	3.50%	2.46%

Sources: 2001 Survey of Consumer Finances. Statistics derived from weighted analyses of data pooled from all five implicates.

* Significant at $p \leq 0.05$; ** Significant at $p \leq 0.01$; *** Significant at $p \leq 0.001$
Note: Chi-square test is used for categorical variables, and t-test is used for continuous variables.

Table 2
Logistic regression of the likelihood of being financially sufficient revolvers.

Explanatory Variables	Point Estimates	P-value	Odds Ratio
Use of financial planners			
For saving/investment advice	**0.4232**	0.0138	1.522
For credit/borrowing advice	-0.0523	0.8009	0.950
Precautionary Saving Motives			
Directly indicated motives	**0.2649**	0.0500	1.300
Subjective emergency funds	**-0.0008**	0.0231	0.999
(in $1,000)			
Ability to borrow from friends/relatives	**-0.3914**	0.0332	0.676
Expectation of future income (Reference Group = Constant, sure)			
Growth, sure	0.1214	0.5237	1.128
Decline, sure	-0.010	0.9622	0.990
Not sure	0.0791	0.6592	1.083
Other obligations			
Saving motives for commitments	-0.5771	0.1562	0.566
Have mortgage	**0.5416**	0.0002	1.713
Have other consumer loans	**0.9728**	<0.0001	2.638
Saving motives for children's education (Reference Group = No Such Saving Motive)			
Have motive and children of age 17-22	0.4551	0.3627	1.568
Have motive but no child of age 17-22	-0.2401	0.3060	0.789
Saving motives for investment	0.7090	0.1565	2.027
Number of liquid accounts	**0.0917**	0.0099	1.095
Credit attitude (Reference Group = Bad)			
Good	**0.5901**	0.0007	1.803
Neutral	0.2728	0.0793	1.313
Bankruptcy	0.3632	0.2426	1.437
Family life cycle variables			
Age (Reference Group = 45 to 54)			
Under 35	-0.0537	0.8303	0.948
35 to 44	0.0165	0.9328	1.015
55 to 64	-0.1789	0.4263	0.836
65 and over	-0.4221	0.0597	0.655
Household type (Reference Group = Legally married couple)			
Male head, not legally married	-0.0957	0.6325	0.909
Female head, not legally married	-0.0470	0.8201	0.953
Number of small children	-0.0963	0.2551	0.908

Explanatory Variables	Point Estimates	P-value	Odds Ratio
Other socioeconomic and demographic variables			
Gross Annual Income (Reference Group = $45,000 ~ $64,999)			
< $25,000	0.1003	0.7645	1.103
$25,000 ~ $44,999	0.1077	0.6988	1.109
$65,000 ~ $99,999	-0.0195	0.9490	0.978
>=$100,000	**-0.7536**	0.0018	0.470
General financial assets (Reference Group = $60,000 ~ $149,999)			
< $20,000	**1.2160**	<0.0001	3.344
$20,000 ~ $59,999	0.3131	0.1988	1.362
$150,000 ~ $369,999	-0.2597	0.2830	0.771
>= $370,000	**-0.7355**	0.0012	0.479
Education (Reference Group = High School Graduate)			
Less than high school	0.0434	0.8869	1.045
Some college	0.1386	0.4803	1.148
Bachelor's degree	-0.1035	0.6143	0.902
Graduate school	-0.2134	0.3373	0.808
Race/Ethnicity (Reference Group = White)			
Black	**1.8651**	<0.0001	6.447
Hispanic	**1.2103**	0.0037	3.371
Other	0.0469	0.8979	1.050

Note: Bolded estimated coefficients are significant at an alpha level of 0.05.

N=1579, of which 928 are financially sufficient convenient users, and 651 are financially sufficient revolvers.
Source: 2001 Survey of Consumer Finances. Statistics derived from an unweighted analysis of data pooled from all five implicates with RII techniques.

Table 3
Descriptive statistics for credit card revolvers and convenience users. Mean (Standard Error) for continuous variables; column percents)

	Convenience Users (N=1263)	Revolvers (N=1723)
Bank card balance	---	$3,874
Liquidity ratio ***	9.67 (6.94)	2.72 (6.43)
Liquid assets ($) ***	68,746 (141,407)	13,015 (42,180)
Subjective liquidity ratio ***	6.76 (8.96)	3.86 (9.35)
Subjective precautionary saving ($) ***	47,914 (103,044)	14,175 (32,190)
Explanatory Variables		
Precautionary saving motives	32.83%	35.43%
Use of financial planners		
For saving advice *	23.23%	19.85%
For credit advice	11.96%	9.88%
Variables related to uncertainty		
Expectation of future income ***		
Constant, sure	38.53%	33.78%
Growth, sure	16.57%	15.63%
Decline, sure	22.42%	19.55%
Not sure	22.47%	31.04%
Expectation of future economy		
Better economy	27.60%	28.26%
Same economy	41.66%	41.15%
Worse economy	30.74%	30.59%
Health conditions ***		
Excellent health	28.39%	22.61%
Good health	50.21%	50.77%
Fair health	17.18%	21.12%
Poor health	4.21%	5.51%
Variables related to liquidity constraints		
Being turned down before ***	9.64%	34.68%
Line of credit utilization ratio		
Utilization ratio < 0.5	---	69.38%
Utilization ratio 0.5-0.9	---	22.83%
Utilization ratio ≥ 0.9	---	7.80%
Interest rate on balance (%) ***	14.63 (1.67)	14.27 (2.72)
Variables related to buffers for consumption shock		
Complete health insurance coverage ***	93.58%	83.21%
Having cash value life insurance	34.73%	31.58%
Working status of spouse/partner ***		
Spouse/Partner working full time	29.25%	39.01%
Spouse/Partner working part time	12.53%	8.14%
Spouse/Partner not working	29.03%	17.09%
Single male headed household	11.93%	12.32%
Single female headed household	17.27%	23.45%
Other control variables		
Other financial assets ($) ***	352,635 (555,796)	70,576 (186,632)
Eligible for Medicaid ***	2.71%	5.98%
Saver ***	77.63%	58.36%

Explanatory Variables	Convenience Users (N=1263)	Revolvers (N=1723)
Risk tolerance ***		
High risk tolerance	5.16%	4.70%
Above average risk tolerance	26.18%	20.53%
Average risk tolerance	45.56%	41.24%
Not willing to take risk	23.10%	33.53%
Age ***	53.7 (6.0)	44.8 (6.9)
Education ***		
Less than high school	5.93%	9.05%
High school	22.55%	34.02%
Some college	21.08%	29.23%
Bachelor's degree	29.02%	18.22%
Advanced degree	21.42%	9.48%
Race/Ethnicity ***		
White	91.31%	75.51%
Black	3.12%	14.81%
Hispanic	2.52%	7.38%
Other	3.05%	2.29%

* Significant at $p \leq 0.05$; ** Significant at $p \leq 0.01$; *** Significant at $p \leq 0.001$
Note: Chi-square test is used for categorical variables, and t-test is used for continuous variables.

Table 4

OLS regression on the level of precautionary saving for credit card revolvers (N=1723).

Variables	Coefficient	p-value	Marginal effect
Intercept	-0.007	0.9992	
Use of financial planners			
For credit/borrowing advice	0.106	0.5475	1.112
For saving/investment advice	**0.376**	0.0058	1.456
Precautionary saving motives	**0.250**	0.0172	1.284
Variables related to uncertainty			
Expectation of future income (Reference group = Constant, sure)			
Sure about income growth	-0.160	0.2689	0.852
Sure about income decline	-0.048	0.7435	0.953
Not sure about income	-0.184	0.1264	0.832
Expectation of future economy (Reference group = Better economy)			
Same economy	0.082	0.4839	1.085
Worse economy	0.156	0.2091	1.169
Health condition (Reference group = Excellent health)			
Good health	**-0.261**	0.0275	0.770
Fair health	**-0.396**	0.0081	0.673
Poor health	**-0.637**	0.0109	0.529
Variables related to liquidity constraints			
Being turned down before	**-0.393**	0.0007	0.675
Utilization ratio (Reference group = Utilization ratio < 0.5)			
Utilization ratio 0.5-0.9	**-0.338**	0.0007	0.713
Utilization ratio > 0.9	**-1.279**	<0.0001	0.278
Interest rate on balance	-0.016	0.1075	0.984
Variables related to buffers for consumption shock			
Health insurance coverage	**0.326**	0.0262	1.385
Having cash value life insurance	0.146	0.2092	1.157
Working status of spouse/partner (Reference group = Spouse/Partner working full time)			
Spouse working part time	0.172	0.3522	1.188
Spouse not working	0.006	0.9668	1.006
Single male headed household	0.116	0.4616	1.123
Single female headed household	-0.023	0.8674	0.977
Other control variables			
Log of other financial assets	**0.157**	<0.0001	1.170
Eligible for Medicaid	**-0.608**	0.0062	0.544
Risk tolerance (Reference group = Average risk tolerance)			
High risk	0.117	0.6067	1.124
Above average risk	-0.161	0.2063	0.851
No risk	-0.065	0.5880	0.937
Age of head	**-0.041**	0.0411	0.960
Age squared	**6.760E– 4**	0.0010	1.001
Education (Reference group = High school)			
Less than high school	-0.276	0.1640	0.759
Some college	0.104	0.4030	1.110
Bachelor's degree	0.141	0.3198	1.151
Advanced degree	0.217	0.1960	1.242
Race/Ethnicity (Reference group = White)			
Black	-0.260	0.0742	0.771
Hispanic	-0.240	0.2450	0.787
Other	-0.209	0.5396	0.811
Adjusted R^2	0.259		

Note: Bolded estimated coefficients are significant at an alpha level of 0.05.

Source: 2001 Survey of Consumer Finances. Statistics derived from an unweighted analysis of data pooled from all five implicates with RII techniques.

Summary and Implications

The behavior of simultaneously holding liquid assets and credit card debt looks puzzling because the cost of borrowing is higher than the return of saving. No previous study has carefully analyzed such behavior in terms of credit card debt. The main purpose of this paper was to explore the effect of using a financial planner on credit card revolvers' behavior of holding substantial levels of liquid assets. This research includes two models. In Model 1, a sample of financially sufficient credit card users (credit card revolvers and convenience users holding liquid assets more than one month's income) is selected, and factors associated with the likelihood of being financially sufficient revolvers are investigated. Results from this model indicate the positive effect of using financial planners for saving or investment advice and support precautionary saving motives as explanations for the behavior of simultaneously saving and borrowing. Therefore, based on a precautionary saving model, Model 2 further explores how use of financial planners and factors related to precautionary saving affect the level of liquid assets held by credit card revolvers, using a sample of all revolvers. Results suggest that using financial planners for saving or investment advice and precautionary saving motives are positively related to the level of revolver's liquid assets.

Households using financial planners are expected to have their assets and credits managed wisely and efficiently. However, using financial planners for saving or investment advice increases the likelihood of revolving. Furthermore, revolvers using financial planners for saving or investment advice have higher levels of precautionary saving than otherwise similar revolvers who do not use financial planners. One explanation for these results could be that these households may be more aware of emergency fund guidelines, compared to those not seeking advice from financial planners. Emergency fund guidelines given by financial planners in practice usually suggest holding liquid assets equal to two and a half to three months of living expenses (Greninger, Hampton, Kitt, and Achacoso 1996). These guidelines do not consider the position of household debt related to the liquidity guidelines, other than keeping debt payments relative to income below safe levels. Another possible explanation for this result could be that perhaps households experiencing difficulty managing their portfolio of assets and debts, including credit card debt and other debts, seek help from financial planners for saving or investment advice in an attempt to improve their financial situation. Or revolvers with more financial assets are more likely to use services from financial planners. However, these alternate explanations are weakened by the facts that the level of other financial assets is controlled in Model 2 and the results from Model 1 suggest that among all financially sufficient credit card users, consumers that use financial planners for saving or investment advice are less likely to pay their credit card balance in full.

Financial planners might focus more on helping their clients to build up financial assets, regardless of whether the clients best interests would be served by paying off credit card debt, since many of the financial planners are paid by commissions on products, and they might receive no income from advising the client to pay off a credit card balance. According to a survey by the Financial Planning Association (FPA) for the first quarter of 2000, more than two-thirds of FPA's members are compensated by commissions and nearly one-fifth are compensated solely by commissions (Winograd 2000). This compensation approach may create a conflict of interest, because financial planners have the incentive to recommend their clients to build up assets without considering their debt repayment, in order to sell financial products that might not be in the best interest of the client. According to FPA, another common compensation approach is to charge fees for assets under management. This arrangement can also encourage the planner to keep as much money in saving accounts as possible, even when some of that money is needed to pay down debts. Based on these practices and our empirical results, it is possible that there is an agency problem in financial planning.

<u>Implications</u>

The use of financial planners is found to be positively related to the likelihood of being a financially sufficient revolver and to the level of precautionary saving. This finding is worth the attention of consumer researchers and educators. The results of this study have important implications for financial planning, consumer education, and public policy, and also provide suggestions for future research.

<u>Implications for Financial Advisors and Educators</u>. Households using financial planners for saving/investment advice are more likely to engage in the less economically efficient practice of borrowing at a high price and lending at a low reward. If these households are influenced by the advice for emergency funds, it might suggest considering lines of credit when making recommendations for emergency funds. Given the prevalence and ease of using credit nowadays, especially through credit cards, lines of credit could be an efficient buffer stock. However, not many households really consider this as a component of their emergency funds (Bi and Montalto 2004). Some education regarding alternative forms of emergency funds, such as line of credit from credit cards and

home equity line of credit, may be beneficial to many revolvers. In addition, financial planners or advisors should be encouraged to evaluate their clients' financial situation comprehensively and to provide advice accordingly. Financial planners or advisors should evaluate whether households should pay off their credit card debt first or should consider precautionary saving on a case by case basis. Financially sufficient revolvers could be better off by retiring their credit card debt using their available liquid assets or other assets, and using that credit line again in case of emergencies.

Optimal financial planning and actual financial practice may not be consistent partly due to precautionary saving motives. Some households may choose not to repay credit card debt using their accumulated liquid assets because they are afraid that they will never have enough saving for other purposes once they use their saving for credit card debt, since a credit card account without a balance may encourage impulsive buying for some card holders. Therefore, it is important to help households set up some feasible saving systems and plans. For example, financial educators can show households the calculation of accumulated money by saving a small amount everyday, and illustrate the cost of revolving.

Implications for Public Policy. Interest charged for credit card debt is substantial compared to the interest earned on liquid assets. The SCF does not contain a measure of financial knowledge, therefore, the results of this study cannot provide information on whether understanding the price of credit card debt affects revolvers' saving behavior. However, consumers might be more likely to make efficient decisions if the cost of credit card balances is provided on credit card statement in dollar amounts, since consumers are likely to have better ideas of the price of revolving if the cost is illustrated in dollar amount instead of annual interest rate (APR). For example, information on how long it will take for the card user to pay off the balance if only the minimum payment is made every month would be useful information to include in the monthly statement. Also, some credit card companies encourage their customers to make only the minimum payment by setting this as the default when making online payments. Regulations requiring credit card companies to change the default payment option or to increase the minimum payment requirement might be beneficial to consumers.

Definitions Of Explanatory Variables For Logistic Regression Of The Likelihood Of Being Financially Sufficient Revolvers

Explanatory Variables	Definition
Precautionary Saving Motives	
Directly indicated motives X3006, X3007, X7513, X7514, X7515, X6848	=1 if the respondent indicates saving motives for emergencies, illness or unemployment =0 otherwise
Subjective emergency funds (in $1,000) X7187	Continuous variable, the amount of savings the respondent thinks the family needs to have for emergencies and other unexpected things that may come up
Ability to borrow from friends/relatives X6443	=1 if the household can get financial assistance of $3000 or more from friends or relatives who do not live together =0 otherwise
Expectation of future income	X7364, X7586
Constant, sure	=1 if the respondent expects the total family income will go up about the same as prices, and has a good idea about family's income in the next year =0 otherwise
Growth, sure	=1 if the respondent expects the total family income will go up more than prices, and has a good idea about family's income in the next year =0 otherwise
Decline, sure	=1 if the respondent expects the total family income will go up less than prices, and has a good idea about family's income in the next year =0 otherwise
Not sure	=1 if the respondent does not have a good idea about family's income in the next year =0 otherwise
Other obligations	
Saving motives for commitments X3006, X3007, X7513, X7514, X7515, X6848	=1 if the respondent indicates saving motives for commitments and bills =0 otherwise
Have mortgage MRTHEL	=1 if the respondent has mortgage =0 otherwise
Have other consumer loans INSTALL	=1 if the respondent has car loans, education loans, or other consumer installment loans =0 otherwise
Saving motives for children's education	X3006, X3007, X7513, X7514, X7515, X6848
Have motive and children of age 17-22	=1 if respondent indicates such saving motive and has children of age 17-22 =0 otherwise
Have motive but no child of age 17-22	=1 if respondent indicates such saving motive but does not have children of age 17-22 =0 otherwise
No such saving motive	=1 if respondent does not indicates such saving motive =0 otherwise

Definitions Of Explanatory Variables For Logistic Regression Of The Likelihood Of Being Financially Sufficient Revolvers

Saving motives for investment X3006, X3007, X7513, X7514, X7515, X6848	=1 if respondent indicates saving motives for investment reasons =0 otherwise
Number of liquid accounts X3502, X3702, X3802	Continuous variable, total number of checking accounts, saving accounts, and money market accounts
Use of financial planners	
For saving/investment advice X7112-7121, X6865-6869	=1 if the household uses financial planners for saving/investment advice =0 otherwise
For credit/borrowing advice X7101-7110, X6849, X6861-6864	=1 if the household uses financial planners for credit/borrowing advice =0 otherwise
Credit attitude	X401
Good	=1 if respondent thinks credit is a good idea =0 otherwise
Neutral	=1 if respondent thinks credit is good in some ways and bad in others =0 otherwise
Bad	=1 if respondent thinks credit is a bad idea =0 otherwise
Bankruptcy X6772	=1 if the household has filed bankruptcy before =0 otherwise
Family life cycle variables	
Age	X14
Under 35	=1 if the head is under 35 years old =0 otherwise
35 to 44	=1 if the head is 35 - 44 years old =0 otherwise
45 to 54	=1 if the head is 45 - 54 years old =0 otherwise
55 to 64	=1 if the head is 55 - 64 years old =0 otherwise
65 and over	=1 if the head is 65 years old and over =0 otherwise
Household type	X7372, X8021
Legally married	=1 if the respondent's current legal marital status is married =0 otherwise
Male head, not legally married	=1 if the respondent's current legal marital status is not married and the respondent is male =0 otherwise
Female head, not legally married	=1 if the respondent's current legal marital status is not married and the respondent is female =0 otherwise
Number of children age 16 and under	Continuous variable, number of children of age 16 or under in the household
Other socioeconomic and demographic variables	
Gross Annual Income	household's before-tax total income in 2000
< = $13,000	=1 if yes, =0 otherwise
$13,001 ~ $25,000	=1 if yes, =0 otherwise
$25,001 ~ $42,000	=1 if yes, =0 otherwise

Definitions Of Explanatory Variables For Logistic Regression Of The Likelihood Of Being Financially Sufficient Revolvers

$42,001 ~ $67,000	=1 if yes, =0 otherwise
> $67,000	=1 if yes, =0 otherwise
General financial assets	Same as variable FIN defined in the SCF
< = $20,000	=1 if yes, =0 otherwise
$20,001 ~ $60,000	=1 if yes, =0 otherwise
$60,001 ~ $150,000	=1 if yes, =0 otherwise
$150,001 ~ $370,000	=1 if yes, =0 otherwise
> $370,000	=1 if yes, =0 otherwise
Education	X5901,X5902, X5904, X5905
Less than high school	=1 if the highest educational attainment achieved by the head is less than high school =0 otherwise
High school graduate	=1 if the highest educational attainment achieved by the head is high school =0 otherwise
Some college	=1 if the highest educational attainment achieved by the head t is some college =0 otherwise
Bachelor's degree	=1 if the highest educational attainment achieved by the head is a Bachelor's degree =0 otherwise
Graduate school	=1 if the highest educational attainment achieved by the head is less than high school =0 otherwise
Race/Ethnicity	X6809
White	=1 if the respondent is White =0 otherwise
Black	=1 if the respondent is Black/African-American =0 otherwise
Hispanic	=1 if the respondent is Hispanic/Latino =0 otherwise
Other	=1 if the respondent is Asian, American Indian/Alaska native, native Hawaiian/Pacific Islander, or other =0 otherwise

Definitions Of Explanatory Variables For Ols Regression Of The Level Of Precautionary Saving	
Explanatory variables	**Definition**
Precautionary saving motives X3006, X3007, X7513, X7514, X7515, X6848	=1 if the respondent indicates saving motives for emergencies, illness or unemployment =0 otherwise
Variables related to uncertainty	
Expectation of future income	X7364, X7586
Constant, sure	=1 if the respondent expects the total family income will go up about the same as prices, and has a good idea about family's income in the next year =0 otherwise
Growth, sure	=1 if the respondent expects the total family income will go up more than prices, and has a good idea about family's income in the next year =0 otherwise
Decline, sure	=1 if the respondent expects the total family income will go up less than prices, and has a good idea about family's income in the next year =0 otherwise
Not sure	=1 if the respondent does not have a good idea about family's income in the next year =0 otherwise
Expectation of future economy	X301
Better economy	=1 if the responder expects the economy over the next five years to perform better than it has over the last five years =0 otherwise
Same economy	=1 if the responder expects the economy over the next five years to perform as the same as it has over the last five years =0 otherwise
Worse economy	=1 if the responder expects the economy over the next five years to perform worse than it has over the last five years =0 otherwise
Health conditions	X6030, X6124
Excellent health	=1 if both the respondent and the spouse/partner, if present, in excellent health condition =0 otherwise
Good health	=1 if either the respondent or the spouse/partner, if present, in good health condition =0 otherwise
Fair health	=1 if either the respondent or the spouse/partner, if present, in fair health condition =0 otherwise
Poor health	=1 if either the respondent or the spouse/partner, if present, in poor health condition =0 otherwise
Variables related to liquidity constraints	
Being turned down before	=1 if the household has been turned down any request for credit or not given as much credit as

Definitions Of Explanatory Variables For Ols Regression Of The Level Of Precautionary Saving	
Explanatory variables	**Definition**
X407, X409	the household applied for, or the household did not apply for credit because they thought they might be turned down in the past five years =0 otherwise
Utilization ratio of credit line from credit cards	X413, X414
Utilization ratio < 0.5	=1 if the ratio of credit card debt to line of credit from credit cards < 0.5 =0 otherwise
Utilization ratio 0.5-0.9	=1 if $0.5 \leq$ the ratio of credit card debt to line of credit from credit cards < 0.9 =0 otherwise
Utilization ratio $\geq$ 0.9	=1 if the ratio of credit card debt to line of credit from credit cards $\geq$ 0.9 =0 otherwise
Interest rate on balance (%) X7132	The interest rate on the credit card with the largest balance
Variables related to buffers for consumption shock	
Complete health insurance coverage X6306, X6329, X7397	=1 if every member in the household is covered by government or private insurance =0 otherwise
Having cash value life insurance X4006	=1 if the household has cash value life insurance =0 otherwise
Working status of spouse/partner	X4700, X5111, X8021
Spouse working full time	=1 if the respondent has a full-time working spouse/partner =0 otherwise
Spouse working part time	=1 if the respondent has a part-time working spouse/partner =0 otherwise
Spouse not working	=1 if the respondent has a spouse/partner not working =0 otherwise
Single male headed household	=1 if the respondent is unmarried/unpartnered male =0 otherwise
Single female headed household	=1 if the respondent is unmarried/unpartnered female =0 otherwise
Other control variables	
Other financial assets	Log of the amount of directly held stocks, bonds, mutual funds, and assets in retirement accounts
Eligible for Medicaid X6303	=1 if anyone in the household is eligible for Medicaid =0 otherwise
Saver X7508-7510	=1 if the household spent less than their income in the past year =0 otherwise
Use of financial planners	
For credit advice	=1 if the household uses financial planner for credit/borrowing advice

Definitions Of Explanatory Variables For Ols Regression Of The Level Of Precautionary Saving	
Explanatory variables	**Definition**
X7101-7110, X6849, X6861-6864	=0 otherwise
For saving advice X7112-7121, X6865-6869	=1 if the household uses financial planner for saving/investment advice =0 otherwise
Risk tolerance	X3014
High risk tolerance	=1 if the respondent and the spouse/partner, if present, are willing to take substantial financial risk when they save or make investments =0 otherwise
Above average risk tolerance	=1 if the respondent and the spouse/partner, if present, are willing to take above average financial risk when they save or make investments =0 otherwise
Average risk tolerance	=1 if the respondent and the spouse/partner, if present, are willing to take average financial risk when they save or make investments =0 otherwise
Not willing to take risk	=1 if the respondent and the spouse/partner, if present, are not willing to take any financial risk when they save or make investments =0 otherwise
Age	Age of the head, X14
Education	X5901,X5902, X5904, X5905
Less than high school	=1 if the highest educational attainment achieved by the head is less than high school =0 otherwise
High school	=1 if the highest educational attainment achieved by the head is high school =0 otherwise
Some college	=1 if the highest educational attainment achieved by the head is some college =0 otherwise
Bachelor's degree	=1 if the highest educational attainment achieved by the head is a Bachelor's degree =0 otherwise
Advanced degree	=1 if the highest educational attainment achieved by the head is a graduate school degree =0 otherwise
Race/Ethnicity	X6809
White	=1 if the respondent is White =0 otherwise
Black	=1 if the respondent is Black/African-American =0 otherwise
Hispanic	=1 if the respondent is Hispanic/Latino =0 otherwise
Other	=1 if the respondent is Asian, American Indian/Alaska native, native Hawaiian/Pacific Islander, or other =0 otherwise

References

Bi, Lan. 2004. Can Mental Accounting Explain the Credit Card Puzzle? – A preliminary study. Proceedings of the Association for Financial Counseling and Planning Education, 109-117.

Bi, Lan and Catherine P. Montalto. 2004. Emergency Funds and Alternative Forms of Saving. Financial Services Review, 13 (2), 93-109.

Braze, D. 2005. 9 Ways to Pay It Off. The Motley Fool, fool.com.

Browning, Martin and Annamaria Lusardi. 1996. Household Saving: Micro Theories and Micro Facts. Journal of Economic Literature, 34 (4), 1797-1855.

Carroll, Christopher. 1992. The Buffer-Stock Theory of Saving: Some Macroeconomic Evidence. Brookings Papers on Economic Activity, 1992 (2), 61-156.

Carroll, Christopher and Miles Kimball. 2001. Liquidity Constraints and Precautionary Saving. NBER Working Paper No. 8496.

Certified Financial Planner Board of Standards. 2005. Practice Standards 400 Series. Retrieved from, http://www.cfp.net/learn/standards400.asp

Chang, Y. Regina, Sherman Hanna and Jessie X. Fan. 1997. Emergency Fund Levels: Is Household Behavior Rational? Financial Counseling and Planning, 8(1), 47-55.

Cohen, Jacob, Patricia Cohen, Stephen G. West and Leona S. Aiken. 2003. Applied Multiple Regression/Correlation Analysis for the Behavioral sciences. 3rd Ed. Mahwah, N.J. : L. Erlbaum Associates.

Dalton, Michael A., James F. Dalton, Randal R. Cangelosi, Randall S. Guttery, and Scott A. Wasserman. 2001. Personal Financial Planning: Theory and Practice. St. Rose, LA: Dalton Publishing.

Deaton, Angus. 1991. Saving and Liquidity Constraints. Econometrica, 59 (5), 1221-1248.

Deaton, Angus. 1997. The Analysis of Household Surveys: A Microeconometric Approach to Development Policy. Johns Hopkins University Press: Baltimore, MD.

DeVaney, Sharon. 1997. Using Financial Ratios. In E.T. Garman and J.J. Xiao (Eds.) The Mathematics of Personal Finance. Houston, TX: Dame Books.

Durkin, Thomas A. 2000. Credit Cards: Use and Consumer Attitudes, 1970–2000. Federal Reserve Bulletin, 623-634.

Elmerick, Stephanie A., Catherine P. Montalto, and Jonathan J. Fox. 2002. Use of Financial Planners by U.S. Households. Financial Services Review, 11(3), 217-213.

Greninger, Sue A., Vickie L. Hampton, Karrol Kitt, and Joseph Achacoso. 1996. Ratios and Benchmarks for Measuring the Financial Well-Being of Families and Individuals. Financial Services Review, 5(1), 57-70.

Gross, David B. and Nicholas S Souleles. 2002. Do Liquidity Constraints and Interest Rates Matter for Consumer Behavior? Evidence from Credit Card Data. Quarterly Journal of Economics, 117, 149-185.

Hurst, Erik. and Paul Willen. 2004. Social Security and Unsecured Debt. NBER Working Paper No. 10282.

Johnson, Dixie P. and Richard Widdows. 1985. Emergency Fund Levels of Households. In K. Schnittgrund (Ed.), Proceedings of the American Council on Consumer Interests 31th Annual Conference, 235-241.

Kim, Haejeong and Sharon A. DeVaney. 2001. The Determinants Of Outstanding Balances Among Credit Card Revolvers. Financial Counseling and Planning, 12 (1), 67-77

Laibson, David, Andrea Repetto and Jeremy Tobacman. 2000. A Debt Puzzle. NBER Working Paper No. w7879.

Montalto, Catherine P. and Yoonkyung Yuh. 1998. Estimating Nonlinear Models with Multiply Imputed Data. Financial Counseling and Planning, 9(1), 97-101.

Rattiner, Jeffrey H. 2005. 'Fiduciary': One Word, Many Views. Journal of Financial Planning, November, http://www.fpanet.org/journal/articles/2005_Issues/jfp1105-art1.cfm?&.

Rutherford, R.C., T. M. Springer, and A. Yavas. 2005. Conflicts Between Principals and Agents: Evidence from Residential Brokerage. Journal of Financial Economics, 76, 627-665.

Rubin, Donald B. 1987. Multiple Imputation for Nonresponse in Surveys. New York: John Wiley & Sons.

Spencer, Heather L. and Jessie Fan. 2002. Savers, Debtors, and Simultaneous Debtors and Savers. <u>Financial Counseling and Planning</u>, 13(2), 25-35.

Starr-McCluer, Martha. 1996. Health Insurance and Precautionary Savings. <u>The American Economic Review</u>, 86(1), 285-295.

Thaler, Richard H. 1999. Mental Accounting Matters. <u>Journal of Behavioral Decision Making</u>, 12, 183-206.

Winograd, Jeffrey L. 2000. Flight to Fees Not Taking Off. Financial Planning. Retrieved from http://www.financial-planning.com/pubs/fpi/20000703103.html, on August 22, 2005.

<u>Endnotes</u>

[1] Statistician, Ph.D., Epsilon.

[2] Professor, Department of Consumer Sciences, The Ohio State University

[3] The SCF variable for the credit card interest rate is X7132. Interviewers are instructed to prove with one or more of the following questions:

What interest rate do you pay on the card where you have the largest balance?
What is the interest rate on the card you got most recently?
What interest rate do you pay on this card?
[Interviewer: we want to know the rate that r pays on new balances]

[4] The marginal effect of a dichotomous variable, holding other variables constant:

$$\text{Log (ratio1}| X_i = 1) - \text{Log (ratio2}| X_i = 0) = b_i$$

$$\text{Log}\left(\frac{\text{ratio1} | Xi = 1}{\text{ratio0} | Xi = 0}\right) = b_i$$

$$\frac{\text{ratio1} | Xi = 1}{\text{ratio0} | Xi = 0} = e^{bi}$$

$$(\text{ratio1}| X_i = 1) = e^{bi} (\text{ratio0}| X_i = 0)$$