

Which Consumers Are Using Home Equity Lines of Credit?

The latter half of 1990 through early 2000 saw record number of individuals become homeowners. Favorable tax advantages on mortgage payments due in large part to the passage of the Tax Reform Act of 1986, and a decrease in the cost of borrowing allowed consumers to build equity through homeownership. One byproduct of homeownership provides consumers a mechanism to borrow capital against their home's equity in the form of a Home Equity Line of Credit (HELOC). This alternative instrument of borrowing proved cheaper compared to other, more traditional, consumer credit alternatives. The relative ease of borrowing capital against home equity has led to anxiety that HELOC's may be increasing used by individuals least able to tolerate increased credit and interest rate risk. Data gleaned from the Survey of Consumer Finances indicate that characteristics of HELOC borrowers looked very similar through the latter half of 1990s into early 2000. Contrary to current beliefs that consumers who are financially vulnerable to credit and interest rate risk are utilizing home equity lines of credit, our study empirically supports that older, more educated, and wealthier households were more likely to use HELOC's, then younger, less educated, and lower wealth households. Additionally, our study reveals that households, which comparison shop for interest rate prices and have an optimistic view of the economy, are more likely to receive better loan pricing.

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Introduction

The rapid rise in housing prices over the past five years has led many homeowners to borrow against their home equity (Freeman, 2002). Collectively, increasing house prices, decreasing costs of borrowing, payment flexibility, and homeowner tax advantages for has made borrowing against home equity lines of credit (HELOCs) attractive to consumers (Canner, Durkin & Luekett, 1998). U.S. home equity debt increased to a record high of \$415 billion in the second quarter of 2004, and is forecasted to reach \$500 billion by the end of the year (Myron, 2004). Public policy and financial services institutions are concerned that consumers are using HELOCs to finance a life style beyond their means (Simon, 2004; Melia, 2004).

Currently, with a HELOC a homeowner can borrow up to 10 percent against the equity in their home, and repay the loan back to them with interest. Repayment rates are usually tied to prime rate and typically adjust on a monthly basis. HELOC's provide an attractive alternative to individuals unable to obtain other types of credit, especially to low income and wealth-constrained borrowers Canner, Durkin and Luekett (1998).

Recent policy concerns about adverse economic factors, or sudden household shocks' regarding their baring on those already financially stretched has come to the forefront of public debate.

The question is whether HELOC borrowers are using this method of obtaining credit due constraints from other avenues, or whether higher income and wealthy consumers are utilizing HELOCs as a means to obtain low cost funds and benefit from tax advantages.

The purpose of this paper is to explore possible changes in financial characteristics of HELOC borrowers during the real estate boom of the late 1990s. The paper utilizes the Survey of Consumer Finances collected by the Federal Reserve Board in 2001, 1998, and 1995.

Literature Review

Prior work is fairly limited in predicting which factors make consumers more likely to use HELOCs. The current literature is dominated by descriptive studies stating facts and trends (Brady, Canner & Maki 2000; Canner, Fergus, & Luekett, 1988; Canner, Luekett, & Durkin, 1989; Canner & Luekett, 1994; Canner, Durkin, & Luekett 1998). Few studies investigate causal relationships between variables that predict HELOC use by consumers (Chen & Jensen 1985; Salandro & Harrison 1997).

Descriptive studies reveal that recent increases in the popularity of HELOCs and other forms of home-equity debt could be a substitutive effect resulting from pricing of other types of debt (Maki, 2001; Stango, 1999; Silvia & Whall, 1989).

The Tax Reform Act of 1986 – initiated a change in public policy whereby consumer preferences shifted from conventional debt instruments to home mortgage credit. Tax deductions for home-ownership and home-equity interest made mortgage and home-equity loans more desirable than other credit products. HELOC's became preferred debt instruments due in part to their tax benefits, payment flexibility, and lower interest rates. One major drawback to HELOCs is their monthly variable interest rate adjustment which poses a risk to consumers in the form of losing their home-equity in case of default.

Canner, Durkin and Luckett (1998) hypothesize that households that hold HELOCs typically own more expensive homes, have higher incomes, and have substantially more built in equity than do other homeowners. This hypothesis is supported by industry statistics, when the American Bankers Association posted figures showing that less than 1 percent of HELOC borrowers default on such loans. The lowest percentage among all categories of credit surveyed.

Following trend analysis reveals great sensitivity of home-equity credit to market conditions. A correlation exists between an expanding housing market (1991-1993) and borrowing against home-equity. The opposite can be seen during recessions (1990-1991), which have dampening effects on home-equity borrowing (Canner, Durkin & Luckett 1998).

Prior studies on predictors of home equity loans consumption utilize life-cycle hypothesis to explain consumers' propensity to use home equity as a means to fund current consumption (Chen & Jensen, 1985)

Using the Consumer Credit Survey from 1977, the authors afore mentioned concluded that older homeowners are less likely to use home equity to fund consumption than younger homeowners. Additionally their results support the direct relations among life cycle changes, income, net worth and propensity to use home-equity loans. Due to major tax changes initiated in 1986, this work may be outdated and lacking in relevance now. Furthermore, this study aggregates HELOCs and traditional home-equity loans (HELs) - as by represented second or third mortgages into a single variable, which may hide specific aspects of HELOC borrowers.

Salandro and Harrison (1997) investigated comparatively home-equity lines of credit against other lines of credit to identify consumer factors that affects propensity to borrow among these alternatives. Their results, based on Survey of Consumer Finance data from 1989 and 1992, indicate that propensity to use HELOCs is influenced by the percent equity in the home, income level, net worth, age of the borrower and credit price. Additionally, they suggest that as economic conditions reveal increasingly more information about the advantages and disadvantages of HELOCs, their use will increase among all categories of consumers.

Further investigation is needed into determining which consumers are more likely to utilize HELOC,s. Currently very little academic work has been reported on this subject, and existing work focused mostly on socio-economic status and life cycle changes of HELOC borrowers. Expanding to include other demographic variables such as expectations of future interest rates, economic conditions, creditworthiness, attitudes about credit, and the existence of a minimal financial safety net may illuminate further the socio-demographic profile of the HELOC users.

Conceptual Framework

The extant literature centered its arguments on the life-cycle hypothesis framework to explain HELOC use (Chen & Jensen 1985; Salandro & Harrison 1997). This theory argues that consumers attempt to smooth consumption across their lifetime (Ando & Mondigliani 1963; Mondigliani & Brumberg 1954). It is suggested that younger consumers utilize more various forms of credit due to their lower income compared to their consumption needs; in effect they are borrowing in the present against their future income. Education, which increases the slope of the earnings path over time, is likely to increase use of HELOCs, particularly among younger households who have not yet reached their peak saving years. Given the tax advantages of HELOCs, households with higher incomes will also be more likely to leverage lower-cost debt instruments. If in fact younger consumers have lower levels of home-equity accumulated compared to other age categories, the Life Cycle Hypothesis can be amended when considering HELOCs. Consequently, younger people may be less likely to use HELOCs than any other age categories because of the limited levels of home-equity.

Increased subprime lending during the time of this study may cater to younger consumers, or those with relatively low incomes, limited equity and /or poor credit history (Canner, Durkin, & Luckett 1998).

Thus, from existing theory, it is hard to determine whether younger households borrow to smooth consumption, or older households, have greater home equity to borrow in regard to HELOCs

Education is shown to be related to a steeper earnings path and thus may be associated with increased HELOC debt. However, less educated consumers are being targeted by subprime lenders. Given its tax advantages, one may expect that higher income households will be more attracted to HELOCs, however higher rates of homeownership among lower-income households may have opened the HELOC market to greater proportions of lower socioeconomic status households.

Further, the life-cycle hypothesis includes implicitly consumer's expectations by accounting for future expected income across the lifespan. This approach implies that consumers will smooth out consumption based on their expected lifetime stream of income. However, the theory doesn't explain how the expectations are formed, but it accounts for them in predicting consumption-saving behavior. Therefore, expectations about the evolution of interest rate and the U.S. economy would influence the attractiveness of debt instruments, particularly those with variable interest rates. Consumers expecting lower future interest rates and better economic conditions in the near future should be more likely to use a HELOC.

Furthermore, consumers covered by a social safety net, maintain disability insurance or are receiving pensions or covered by a union or an employee association can bear greater interest rate risk, and are more likely to borrow in the present against future income streams thereby accepting higher leverage in their portfolios.

Moreover, the neoclassical demand theory suggests that consumers react to prices. Higher prices generate lower quantity demanded. The contractual obligations spelled out in a loan are proxies for loan price. Consumers with elevated debt levels would be more likely to use HELOCs because of their cost effectiveness. Therefore interest rate, repayment amount, and debt service ratio could be proxies for HELOC's price. Empirical findings support neoclassical demand hypothesis in the case of mortgage borrowing Dhillon, Shilling, and Sirmans (1987). They found that mortgage demand depends on mortgage interest rate. Therefore it is hypothesized that consumers with higher debt levels are more likely to have a HELOC.

Family resource management theory (Deacon & Firebaugh, 1988) suggests that household resource management depends on demands and resources. In the case of managing household financial resources, the effort spent on searching for alternative investment vehicles, or sources of credit, would serve as a supplementary resource in the managerial process. Households spending more time shopping for loans and investment alternatives are better able to make informed decisions. Considering that a HELOC is often a cheaper and a better alternative to other sources of credit, it is logical that consumers who engage in greater shopping effort for investments and credit alternatives are more likely to have a HELOC than other categories of consumers.

Finally, the theory of planned action (TPA) suggests that intention to consume and ultimately consumption are positively affected by consumer's attitudes toward the product or service (Ajien & Fishbein, 1980). The theory hypothesizes that attitude is a consistent predictor of behavior only when (1) the attitude is strong and clear, (2) the attitude is relevant to the behavior called for by the situation at hand, (3) the attitude and the behavior have strong links to the same additional component of the attitude structure (either cognitions or affective responses), and (4) the attitude is important to the individual (Zimbardo & Leippe 1991, p.192). Therefore, consumers holding positive attitudes toward credit are more likely to have a HELOC.

Additionally, TPA hypothesizes that consumers and consumption are also influenced by perceived behavioral constraints. In the case of HELOCs, previous rejection for credit could act as a negative behavioral constraint. From a lenders perspective, a consumer previously turned down for credit could be an indicator of higher risk to loan repayment. Higher educational attainment, race and employment status act as positive social influences among groups using these criteria.

Equation (1) summarizes the earlier stated hypotheses in a mathematical format. The dependent variable is the use of a HELOC.

$$\log\left(\frac{\pi_i}{1-\pi_i}\right) = \alpha_0 + \alpha_1 HOME EQ + \alpha_2 Income1 + \alpha_3 Income2 + \alpha_4 Income3 + \alpha_5 Income5 + \alpha_6 Income6 + \alpha_7 NetWorth1 + \alpha_8 NetWorth2 + \alpha_9 NetWorth3 + \alpha_{10} NetWorth5 + \alpha_{11} NoHighSch + \alpha_{12} HighSch + \alpha_{13} College + \alpha_{14} Age1 + \alpha_{15} Age2 + \alpha_{16} Age3 + \alpha_{16} Age5 + \alpha_{17} Age6 + \alpha_{18} R'sDisabilityIns + \alpha_{19} R'sSpouseDisabIns + \alpha_{20} R'sUnion + \alpha_{21} R'sSpouseUnion + \alpha_{22} Pension + \alpha_{23} TunedCredit + \alpha_{24} FutureIntr + \alpha_{25} USEcon + \alpha_{26} LowShopInv + \alpha_{27} HighShopInv + \alpha_{28} LowShopCredit + \alpha_{29} HighShopCredit + \alpha_{30} PozCreditAtt + \alpha_{31} NegCreditAtt + \alpha_{32} HighDebtR + \alpha_{33} LowDebtR + \alpha_{34} LowMedDebtR + \alpha_{35} HighMedDebtR + \varepsilon_i \quad (1)$$

Where:

- π_i - the probability of having a HELOC,
- HOMEEQ* – het quantity of home-equity accumulated,
- Income_i*, (*i* = 1,...6) – the income categories in percentiles (*i* = 1 for 0-20 percentiles, *i* = 2 for 21-40 percentiles, ..., *i* = 5 for 81-90 percentiles, and *i* = 6 for 91-100),
- NetWorth_i*, (*i* = 1,...5) – the networth quintiles (*i* = 1 for 0-25 quintile category, *i* = 2 for 26-50 quintile, ..., *i* = 5 for 76-90 quintile, and *i* = 6 for 91-100 quintile),
- NoHighSch* – the category of consumers with no high school diploma,
- HighSch* – the category of consumers with high school diploma,
- College* – the category of consumers holding a college degree,
- Age_i*, (*i* = 1,...6) – the age categories (*i* = 1 for age < 35 year old, *i* = 2 for age 35-44 years, ..., *i* = 5 for 65-74 years old, and *i* = 6 for age > = 75 years),
- R'sDisabilityIns* – the disability insurance category,
- R'sSpouseDisabIns* – the respondent's spouse has disability insurance category,
- R'sUnion* – coverage by a union or other employee association,
- R'sSpuseUnion* – respondent spouse has union/employee association coverage,
- Pension* – at least one person in the household receives pension,
- TurnedCredit* – the respondent was turned down from credit in the past five years,
- FutureIntr* – the category of consumers expecting high future interests,
- USEcon* – the category of consumers expecting better U.S. economy in the near future,
- LowShoppingInv* – the category of consumers making low effort to shop for investment alternatives,
- HighShoppingInv* – the consumers that shops a lot for investment categories,
- LowShopCredit* – the consumers putting low effort to shop for credit alternatives,
- HighShopCredit* – the consumers that put high effort to shop for credit alternatives,
- PozCredit Att* – the consumers holding positive attitudes about credit,
- NegCredit Att* – the consumers holding negative attitudes about credit,
- LowDebtR* – debt service ratio less or equal to .10,
- HighDebtR* – debt service ration greater than .36
- LowMedDebtR* – debt service ratio greater than .10, but less than .20,
- HighMedDebtR* – debt service ratio greater than .30, but less or equal to .36.
- ε_i - the random error.

Methods

HELOC borrower characteristics were drawn from three cross-sectional Survey of Consumer Finances (SCF) data sets - 1995, 1998, and 2001. The analyses provided are based on five implicates provided by SCF for each year of data collection. The samples are limited to respondents owning a house. All dollar values are updated to 2001 levels using CPI for urban consumers. Descriptive statistics are weighted according to SCF recommendations. Two levels of analysis are reported in this study: 1) a descriptive analysis involving all three data sets, 1995, 1998, 2001; and 2) a causal analysis using the model described by relation (1) that uses only the SCF data from 2001.

Data set collection used for descriptive analyses provides across time changes in the socio-economic profile of HELOC consumers. Descriptive and causal analyses were performed in testing the advanced hypotheses. Results shown in Table 1 support the financial industry claims about the increasing popularity of HELOC products among homeowners.

Table 1.
HELOCs as Proportion of Total Home Ownership

Year	2001	1998	1995
HELOC Percentage (number of HELOCs/total homeowners)	13% (401/3167)	12% (357/3014)	10% (310/3136)

Note: the results are based on five implicates

Findings

The descriptive results are summarized in Tables 2 and 3. The data shows that in 2001, among HELOC users, almost 75 percent are in the ages between 35 and 64. In 2001, only 11 percent of HELOC users are younger than 35 years and 14 percent were older than 65. These proportions stayed almost constant in 1995 and 1998 with slight variations in 1998.

Further, in 2001, 75 percent of HELOC users were from income categories above 60th percentile and 86 percent were in networth categories above the 50th percentile. These proportions were unchanged between 1995 and 2001, with the exception of minor reductions in 1998. Moreover, 70 percent of HELOC users have some college or college degrees in 2001, roughly the same as in 1998 and 1995. The data from Table 3 indicates that on average HELOC user holds higher equity in their home than non-users, \$160,491 vs. \$115,603 in 2001. These differences are maintained from 1995 up to 2001. The data from Table 2 further reveals that whites make-up over 80% of HELOC users.

Descriptive data from Table 2 shows an increasing proportion of HELOC users expecting higher future interest rates from 56 percent in 1995 to 66 percent in 2001. In contrast, the proportion of HELOC users expecting lower interest rates is very low and decreased from 7.14 percent in 1995 to 5.7 percent in 2001. Additionally, the proportion of HELOC users expecting a better US economy was fairly constant at around 25 percent from 1995 to 2001, with only a slight decrease in 1998. Those expecting a worse U.S. economy rose from 19.5 in 1995 up to 30.31 in 2001.

The descriptive statistics indicate an increasing proportion of workers among HELOC users, from 81.37 percent in 1995 up to 86.46 percent in 2001. Among those working and HELOC users, there is an increasing proportion of self-employed consumers, from 14 percent in 1995 up to 24.22 percent in 2001. This trend could suggest a deviation of debt drawn from HELOCs toward business purposes.

The same data reveal that, among HELOC users, almost half have disability insurance. This proportion was almost unchanged from 1995 up to 2001. In contrast, one could observe among HELOC users an increasing proportion of spouse/partner disability protection, from 17.94 percent in 1995 up to 21.97 in 2001. At the same time, union or employee association protection coverage decreased among HELOC users. The proportion of respondents protected by a union/employee association decreased from 18.27 percent in 1995 to 15.7 in 2001. This same decreasing trend could be observed for union/employee association protection of the spouse, from 11.21 percent in 1995 to 7.8 percent in 2001 and, also a slight decrease among HELOC users who receive pension, from 18.29 percent in 1995 to 17.07 percent in 2001.

These results may reflect an overall reduction in the proportion of workers in unions and receiving defined benefit plans from their employers.

The descriptive data reveals a large proportion of HELOC consumers were never refused for credit and trend up from 86.24 percent in 1995 up to 90.37 percent in 2001. These results do not suggest an increase in the use of home equity loans by financially unstable households during this time period.

A decreasing proportion of people possess a positive attitude about credit. In 1995, 36.47 percent of HELOC users held positive attitudes about credit contrasted in 2001 where 17.53 percent of HELOC users held positive attitudes. Proportionally, more people have positive attitudes toward credit among HELOC users than among on-users. Among HELOC users an increasing proportion of people put greater effort into shopping for investment alternatives an increase from 36.13 percent in 1995 to 40.68 percent in 2001. The proportion of HELOC users shopping for credit alternatives increased from 42.24 percent in 1995 up to 45.96 percent in 2001.

Table 2.
Descriptive Statistics

SCF-Year	1995		1998		2001	
Have HELOC	Yes	No	Yes	No	Yes	No
Education						
No high school diploma	2.4	18.11	6.64	14.39	6.33	14.87
High school diploma	24.4	32.69	25.63	32.58	21.61	31.78
Some college	21.28	17.37	15.43	18.36	15.75	17.33
College degree	51.91	31.84	52.29	34.66	56.31	36.03
Income percentile categories						
0-20 (Income 1)	1.39	13.17	4.93	12.3	3.37	13.06
21-40 (Income 2)	4.52	18.4	11.16	17.69	9.97	17.85
41-60 (Income 3)	15.61	19.48	12.82	21.08	11.8	20.45
61-80 (Income 4)	29.91	23.4	27.61	23.47	26.46	24.04
81-90 (Income 5)	19.26	12.75	18.52	12.69	24.05	11.95
90-100 (Income 6)	29.31	12.8	24.96	12.77	24.35	12.65
Net worth quintiles						
0-25 (Networth 1)	3.56	5.44	0.94	5.83	2.22	5.69
26-50 (Networth 2)	8.95	26.13	16.41	26.43	11.61	27.49
51-75 (Networth 3)	27.41	34.69	36.52	33.35	28.34	34.44
76-90 (Networth 4)	31	20.56	24.73	20.85	31.93	19.71
91-100 (Networth 5)	29.08	13.18	21.4	13.54	25.9	12.67
R's Age						
< 35 (Age 1)	11.55	14.76	6.69	14.5	11.01	13.69
35-44 (Age 2)	25.83	22.77	25.86	23.26	23.4	22.21
45-54 (Age 3)	30.11	19.98	32.02	20.32	28.19	22.58
55-64 (Age 4)	17.28	15.73	20.57	14.98	23.32	15.4
65-74 (Age 5)	10.26	15.19	8.92	14.38	11.54	13.29
>= 75 (Age 6)	4.96	11.58	5.94	12.56	2.54	12.57
Race						
White	88.18	84.33	88.23	83.82	89.86	82.67
African American	4.77	8.76	6.14	8.54	4.88	9.67
Asian	5.03	2.99	2.95	2.59	3.08	2.07
Hispanic	2.02	3.92	2.68	5.05	2.18	5.59
Working status						
Work for someone else	67.38	56.62	67.07	55.5	62.24	57.71
Self-employed	13.99	11.65	17.39	13.39	24.22	12.59
Retired/disabled/not working	18.63	31.73	15.54	31.11	13.54	29.7
R's disability insurance						
Yes	48.2	34.15	46.71	31.5	48.6	33.37
No	51.8	65.85	53.29	68.5	51.4	66.63
R's spouse disability insurance						
Yes	17.94	16.15	20.85	14.77	21.97	16.03
No	82.06	83.85	79.15	85.23	78.03	83.97
R's union coverage						
Yes	18.27	15.47	17.45	14.17	15.7	13.07
No	81.73	84.53	82.55	85.83	84.3	86.93

Table 2.
Descriptive Statistics (Continuation)

SCF-Year	1995		1998		2001	
Have HELOC	Yes	No	Yes	No	Yes	No
R's spouse union coverage						
Yes	11.21	7.04	10.65	6.92	7.8	6.28
No	88.79	92.96	89.35	93.08	92.2	93.72
Pension						
Yes	18.29	19.75	13.46	19.22	17.07	18.95
No	81.71	80.25	86.54	80.78	82.93	81.05
Credit worthiness - turned down from credit						
Yes	13.76	16.92	16.52	18.22	9.63	15.97
No	86.24	83.08	83.48	81.78	90.37	84.03
Expectations - future interests						
Higher	56	62.36	59.54	63.28	66.1	63.22
Lower	7.14	7.71	5.7	5.28	5.7	7.76
About the same	36.86	29.92	34.76	31.44	28.8	29.02
Expectations - future U.S. economy						
Better	26.89	25.37	22.82	21	25.39	27.45
Worse	19.5	23.33	27.18	27.2	30.31	31.2
About the same	53.61	51.3	50	51.8	44.3	41.35
Credit attitudes						
Positive	36.47	31.62	35.94	25.09	27.53	26.23
Neutral	34.06	36.55	39.74	38.44	43.78	42.05
Negative	29.48	31.83	24.32	36.47	28.69	31.72
Shopping effort for investment alternatives						
Low	25.02	34.44	31.13	32.06	27.52	33.06
Medium	38.85	35.16	38.68	35.31	31.8	33.95
High	36.13	30.4	30.19	32.63	40.68	32.99
Shopping effort for credit alternatives						
Low	16.9	25.35	19.38	26.22	14.2	27.14
Medium	40.86	39.68	44.65	37.92	39.84	35.93
High	42.24	34.97	35.97	35.86	45.96	36.93

Finally, data from Table 3 reveals that HELOC users hold an average or median higher debt service ratio than non-users. For 2001, HELOC users held an average debt service ratio of 23% vs. a debt service ratio of 21% held by non-users. The median values are even more suggestive about existing differences between HELOC users and non-users.

Results from the logit model analysis are presented in Table 4. This statistical test uses 2001 SCF data. Consumers from income categories above the 60 percentile are more likely to have a HELOC than lower income categories. Also, consumers from wealth categories higher than 50 percentile are more likely to have a HELOC. Age categories suggest a curvilinear effect on propensity to use HELOCs. People in the age category between 55 and 64 are more likely than any other age category to have a HELOC.

Descriptive statistics reveal that HELOC users hold higher levels of home-equity. However, the logit testing shows those consumers from a particular demographic group having lower levels of home-equity are more likely to use HELOCs.

Logit analysis results indicate that respondents having disability insurance, or having a spouse/partner with disability insurance are more likely to have a HELOC. Additionally, respondents covered by a union or employee association are more likely to have a HELOC. Families receiving a pension are more likely to have a HELOC. Logit results show that consumers predicting a better future U.S. economy are less likely to have a HELOC.

Consumers with high debt service ratios (greater than .36) are more likely to have a HELOC than any other categories and groups which put greater effort or less effort into shopping for investment alternatives are less likely than those spending moderate effort to have a HELOC. Alternatively, consumers that put both higher and lower shopping-effort into shopping for credit alternatives are more likely to have a HELOC. Consumers holding positive attitudes toward credit and consumers holding negative attitudes toward credit are more likely to have a HELOC.

Finally, results indicate that consumers/families with high debt service ratio (greater than .36) are 24 percent more likely than those with debt levels between .20 and .30 to have a HELOC. The findings from Table 4 show that all other debt service ratio categories of consumers are less likely to hold a HELOC.

Table 3.
Descriptive Statistics for The Continuous Variables

SCF - Year	1995		1998		2001	
Have HELOC	Yes	No	Yes	No	Yes	No
HH size (Avg.)	2.88	2.65	2.88	2.68	2.9	2.63
HH size (Median)	3	2	3	2	3	2
Debt service ratio (Avg.)	0.24	0.23	0.26	0.23	0.23	0.21
Debt service ratio (Median)	0.19	0.15	0.19	0.16	0.19	0.15
Income (Avg.)	\$100,340	\$60,759	\$103,692	\$68,609	\$120,683	\$82,400
Income (Median)	\$67,483	\$42,621	\$70,643	\$45,256	\$80,177	\$49,340
Networth (Avg.)	\$602,171	\$330,105	\$565,138	\$425,727	\$812,930	\$525,547
Networth (Median)	\$240,795	\$114,601	\$214,559	\$135,983	\$360,601	\$155,600
Home equity (Avg.)	\$120,295	\$82,695	\$116,475	\$93,461	\$160,491	\$115,603
Home equity (Median)	\$86,687	\$55,480	\$80,547	\$59,866	\$91,000	\$67,000
Liquid Assets (Avg.)	\$18,598	\$18,808	\$23,878	\$21,857	\$35,746	\$29,327
Liquid Assets (Median)	\$4,623	\$2,890	\$6,204	\$4,472	\$9,400	\$5,000

Conclusions

Our results indicate that the propensity to use a HELOC increases with the improvement of the socio-economic status. Empirical evidence shows that the majority of HELOC consumers are older, employed, and from income and wealth categories above 50th percentile. Among HELOC users, there is a slight upward trend in the proportion of consumers who expect an improvement in the U.S. economy in the near future, and those putting high levels of effort into shopping for credit alternatives.

Collectively our evidence counters current concerns that HELOC consumers are financially vulnerable and susceptible to market changes or that they are obtaining home equity credit through subprime markets. Further investigation is required to identify the profile of consumers who default on HELOCs.

These results do not indicate changes in the way consumers are choosing to spend money borrowed against their home equity using HELOCs. Home improvement, child education, and business financing (Broderick, 2002) are common ways of increasing future consumption through the use of a HELOC. Significant amounts of money may also be used to eliminate high-interest installment and credit card debt (Maki, 2001). Consumers may also be increasing present consumption through HELOCs by using loan proceeds to buy a car or boat, finance debt consolidations, or finance vacations. There is also some evidence that consumers are increasingly attracted to HELOCs as a means of investing money secured by home-equity in the stock market. According to a recent Federal Reserve Study by National Association of Securities Dealers (NASD) the proportion of securities financed with home-equity secured money increased from 2% in 1999 up to 11% in 2002. This same source suggests that the average amount of money secured by home-equity invested in the stock market increased to over \$24,000 (Findeisen, 2004). This type of behavior leverages the portfolios of families and increases exposure to market changes, and sudden household shocks.

Compared to previous work, this study brings new topics for discussion about consumers' expectations, attitudes, creditworthiness, and shopping efforts for credit alternatives in relation to HELOC use.

Table 4.
Logit Regression Estimators

Parameter	Estimate	Standard Error	Point Estimate	Pr > ChiSq
Intercept	-1.9518	0.1506		<.0001*
income1 (0-20 %)	-0.4738	0.1824	0.623	0.0094*
income2 (21-40 %)	-0.1393	0.1228	0.870	0.2566
income3 (41-60 %)	-0.3519	0.1057	0.703	0.0009*
income5 (81-90 %)	0.3616	0.0881	1.436	<.0001*
income6 (91-100 %)	0.1493	0.0887	1.161	0.0921**
wealth1 (0-25 %)	-0.4716	0.2208	0.624	0.0327*
wealth2 (26-50 %)	-0.5959	0.1133	0.551	<.0001*
wealth4 (76-90 %)	0.5333	0.0833	1.705	<.0001*
wealth5 (91-100 %)	0.5149	0.0950	1.673	<.0001*
no high school dipl.	-0.1228	0.1427	0.884	0.3893
high school dipl.	-0.0220	0.0935	0.978	0.8143
college education	0.2091	0.0788	1.233	0.0079*
asian	-0.1348	0.1562	0.874	0.3879
black	-0.5319	0.1445	0.588	0.0002*
hispanic	-0.7435	0.1859	0.475	<.0001*
not working/other	-0.6746	0.2435	0.509	0.0056*
retired	-0.1593	0.1094	0.853	0.1454
self-employed	0.1069	0.0322	1.113	0.0009*
age1 (< 35)	-0.3251	0.1170	0.722	0.0054*
age2 (35-44)	-0.2860	0.0798	0.751	0.0003*
age3 (45-54)	-0.1200	0.0698	0.887	0.0855**
age5 (65-74)	-0.1688	0.0959	0.845	0.0783**
age6 (>=75)	-1.0750	0.1622	0.341	<.0001*
R's disability	0.3706	0.0571	1.449	<.0001*
R's spouse disability	0.1464	0.0684	1.158	0.0324*
R's union	0.1726	0.0897	1.188	0.0543**
R's spouse union	-0.1231	0.1080	0.884	0.2547
pension	0.3347	0.0872	1.397	0.0001*
credit down	-0.2984	0.0896	0.742	0.0009*
high future interests	0.0229	0.0530	1.023	0.6660
better US economy	-0.1468	0.0587	0.863	0.0124*
low shopping invst.	-0.2438	0.0715	0.784	0.0006*
high shopping invst.	-0.1757	0.0598	0.839	0.0033*
low shopping credit	0.1315	0.0674	1.141	0.0511**
high shopping credit	0.2046	0.0631	1.227	0.0012*
positive credit att.	0.3185	0.0664	1.375	<.0001*
negative credit att.	0.2626	0.0616	1.300	<.0001*
home-equity	-1.08E-7	2.835E-8	1.000	0.0001*
high debt serv. ratio	0.2163	0.0946	1.241	0.0222*
low debt serv. ratio	-1.0491	0.0802	0.350	<.0001*
low-med dbt. serv. r	-0.4622	0.0787	0.630	<.0001*
high-med dbt. serv. r	-0.0139	0.1225	0.986	0.9098

* significant at $p < .05$ level

** significant at $p < .10$ level

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