CHANGES IN U.S. HOME EQUITY LENDING: EVIDENCE FROM THE 1989 THROUGH 2007 SURVEY OF CONSUMER FINANCES

Headnote

Building equity in the home has been an important factor of building wealth for households. This home equity is largely accepted and used as credit for households to satisfy consumer financial decisions. Home equity is commonly used as a consumer credit tool to finance existing consumer debt or finance new consumption interests. Households have taken on significantly more debt over the years according to the Federal Reserve Board's Survey of Consumer Finances (SCF). This paper explores the characteristics of this rapid expansion of using home equity to satisfy other consumer financial decisions.

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Introduction

Building equity in the home has long been an important function of wealth accumulation for US households. Home equity is a largely accepted form of collateral for credit. For many homeowners, the last decade was a time of vast amounts of borrowing against the equity in their homes.

Home equity is commonly used as a consumer credit tool to finance existing consumer debt or finance new consumption interests. However, in the event of a financial impediment to the household utilizing home equity to finance their consumption or debt, borrowers are at far greater risk of becoming

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delinquent or even defaulting on their loans. This can be devastating to any household attempting to build wealth and therefore acquire the benefits higher wealth provides.

Given the recent credit turmoil in U.S. mortgage markets, and the importance of consumer financial decisions both to the economy in general and to household net worth in particular, we use the Federal Reserve Board's Survey of Consumer Finances from 1989 to 2007 to explore changes in home equity lending.

Background

Home equity is defined as the difference between the home's market value and its outstanding mortgage debt. Home equity used for credit is one of several important ways borrowers can substitute their home equity for their consumption choices. Another important way to utilize the equity established in the home occurs when interest rates consistently fall over time. Households can then refinance their home loans for better rates allowing them to use the equity they have accumulated the tool.

If a household does not sell their home and become renters or sell their home for a more affordable option, they may seek to refinance their existing mortgage for more than loan amount. This alternative refinance loan offers the homeowner a tool for borrowing more than what the loan is worth. This then allows homeowners to finance other consumption interests or pay off other debts.

Home equity credit loans usually come in two types of forms. The first is a traditional home equity loan that typically has equal monthly payments of a principal plus interest (HEL). These loans are generally second mortgages with a fixed interest rate for the life of the loan. The second form is known as a home equity line of credit (HELOC). These loans act as a slush fund for borrowers to draw from whenever they like up to the amount of the line of credit. HELOCs are generally more flexible in their repayment timetable and the associated interest rates change with the changes in an indexed rate.

About The Survey of Consumer Finances

For our study we use the Survey of Consumer Finances (SCF). The SCF is conducted every three years to provide detailed information on the finances of U.S. families. No other study for the country collects comparable information. Data from the SCF are widely used, from analysis at the Federal Reserve and other branches of government to scholarly work at the major economic research centers and academic institutions.

To ensure the representativeness of the study, respondents are selected randomly using technical procedures that the Federal Reserve Board mandates. A strong attempt is made to select families from all economic strata.

The study is sponsored by the Federal Reserve Board in cooperation with the Department of the Treasury. Since 1992, data have been collected by the National Organization for Research at the University of Chicago (NORC).

Participation in the study is strictly voluntary. However, because only about 4,500 families are interviewed in the main study, every family selected is very important to the results. To maintain the scientific validity of the study, interviewers are not allowed to substitute respondents for families that do not participate. Thus, if a family declines to participate, it means that families like theirs may not be represented clearly in national discussions.

The confidentiality of the information provided in the study is of the highest importance to NORC and the Federal Reserve. Strenuous efforts are made to protect the privacy of participants, and in the history of the survey, there has never been a leak. The names of the participants in the survey are known only to NORC, which has more than 50 years of successful experience in collecting confidential information.

Literature Review

In the years leading up to the current recession, household leveraging increased dramatically. This unprecedented rise in household leverage in the last 25 years is most clearly seen in the years 2002 through 2007 where households doubled their debt in just 5 years (Mian and Sufi, 2009 (A)). Research on these events has been broad and particularly extensive as shown by the work of Federal Reserve Board Economist's in their research on family and household finances (Bucks, 2006 and 2009). This continuing research also demonstrated that at the same time households were experiencing increases in the amount of home secured debt, they also experienced increases in credit card balances and other lines of credit.

It is important to note that one of the more influential reasons for the expansion in household debt in the early 2000s was that mortgage credit became more easily available to new home owners during the 1990s as understood by the July 2000 Federal Reserve Bulletin (Brady, 2000). This research reviled that during the 1990s, when rising home prices and falling interest rates were the norm, households desire to convert the accumulated equity in their homes into funds for other purposes increased. This equity stripping environment was one of the major factors that caused the number of mortgage refinances to dramatically escalate.

In fact, in zip codes that had previously seen widespread loan rejection in the previous decade. Also at this time, a sharp increase in the number of mortgage defaults was seen in these previously less credit worthy areas. Mian and Sufi are two Economists with extensive research on this topic. One of their more recent

> "…central finding[s] is that a rapid expansion in the *supply* of credit to zip codes with high latent demand for mortgages is a main cause of both house price appreciation from 2001 to 2005 and the subsequent sharp increase in defaults from 2005 to 2007. The expansion in credit supply was driven by a shift in the mortgage industry towards "disintermediation", which we define as the process in which originators sell mortgages in the secondary market shortly after origination" (Mian and Sufi, 2009 (B)).

"Latent demand" is measured as a particular household receiving an acceptance on a mortgage offer where as in 1996 the household would be denied. More to the same point, these zip codes with high "1996 latent demand" experience negative income and employment growth over this time period.

House price appreciation may offer previously credit constrained borrowers a path to their more desirable level of consumption. Campbell and Cocco understand rising house prices to stimulate consumption by increasing households' perceived wealth, or by relaxing borrowing constraints (Campbell, 2007). On the other hand, house price appreciation may supply greater access to borrowing for homeowners who at the same time believe house prices will continually rise for an unrealistic amount of time in the future (Agarwal, 2007). Under these circumstances, homeowners dutifully paying their monthly mortgages can enjoy a relatively easy environment for which they can secure their debts with the equity in their home. With a strong base of equity built in the home, homeowners can then use this home equity to finance their own debt based consumption behavior. This is exactly what happened from 2001 to 2007. It is therefore important to understand the system of microeconomic household debt behavior.

To better understand the current status of home equity lending the Federal Reserve participated in a survey from May to October in the 1997 Surveys of Consumers, a monthly survey conducted by the Survey Research Center of the University of Michigan. They found that commercial banks are the main source of home equity loans, and more than ninety percent of homeowners with home equity lines of credit had secured them through a depository institution, the most frequent being commercial banks. This survey remained consistent with historical patterns, confirming that the main uses for home equity credit are to finance home improvements, and repay other debts. However this survey also presented more additional uses such as education, vehicle purchases, and vacations.

A few years later, the Federal Reserve participated in the Survey of Consumers from March through May 1999 to obtain a better understanding of how homeowners have been using refinancing to liquefy the equity in their homes, and how they have used the funds (Brady, 2000). Typically homeowners choose to refinance for several reasons such as obtaining a lower interest rate, to change the terms of their loan, and to also liquefy equity. The survey also reported the reoccurring theme of the two main uses of funds, to pay off other debts, and home improvements. Consumers also reported the use of funds on vehicle purchases, vacation, education, and medical expenses. Even though these purchases were cited by a large majority of consumers, the dollar amounts were not considered large in comparison to home improvement and debt pay-off.

Methodology

With this as our backdrop, the stage is properly set to dive deeper into exactly just what the home equity market looks like. Observing home equity loans (HEL) and home equity lines of credit (HELOC) and the characteristics of the households who use them is clearly an important goal. The purposes and sources of home equity are clearly critical to understanding why households were increasing their own leverage to this degree. We will capture the equity to value ratio that truly reveals the extent to which

consumers are making good or bad financial decisions. Finally, we will regress the relevant indicators against the equity to value ratio to observe the variables that make up the significant effects on using equity as credit.

In order to properly capture the households who are using their home equity for credit, we distilled the Survey of Consumer Finances from 1989 through 2007 to only homeowners with mortgages (i.e. households who at some time during the duration of our sample size had a home equity loan or home equity line of credit). A subset of the households did have both forms of borrowing. With this data we were able to observe the level of home equity loans (HELs) and the level of home equity lines of credit (HELOCs) (Table 1).

The Survey of Consumer Finances also has information on the source of the loan. This is important to analyze so we could better understand the characteristics of the kinds of places where loans were from. Further, by looking at the sources of loans over time, as well as the proportion, we can track the changes in which particular sources are playing an increasingly more prominent or weaker role. We created a subset of variables using the loan source information described above (Table 2). These were conventional and unconventional sources of the households' loan. Conventional loan sources are commercial banks, savings and loan banks, and credit unions. Unconventional sources were the remaining sources we included in our study such as mortgage brokers.

We also included the reasons why households took out their loans (Table 3). The purpose for a household to choose to use the equity in their home to secure credit is an important way to understand what kinds of consumer choices are being made. The decision of a household to use the equity in their home to consume something is an important one because the consequences are more or less expensive. It would be fair to assume that whatever they are consuming as a result of this loan is important to the homeowner. We therefore, not only will look at what home loans in general are used for but also what home equity loans and home equity lines of credit are used for. In the survey of consumer finances there are 51 possible options the households can respond to as the purpose of their home equity loan or home equity line of credit. To simplify the meaning and economic implications of the loan purpose list, we placed the responses into 10 buckets. These 10 buckets represent broader but significant consumer choices such as General Expenses or Home Improvement and/or Repair.

The chief variable of interest to us was the equity to value ratio of the household (ETV). We created the ETV ratio based on the equity in the home divided by the value in the home (Table 4). This ratio gives us an understanding of the true amount of wealth in the household. Using this variable to look further into the consumers' behavior of using the equity in their home to finance other consumption is at the crux of better understanding the decisions by these consumers.

After selecting more or less usual demographic variables, we made sure to select variables that would provide insight into consumer behavior that might be linked to better equity to value ratio's in the households (Table 5). These include saving habits, shopping amounts, and credit quality from 1989 through 2007. Smoking was included from 1995 through 2007 as it was first added into the survey in 1995. Income was separated into quintiles. We also included a housing tenure variable to observe the equity levels as it relates to the length of time households have owned their homes.

Our final section of analysis was done through Ordinary Least Squares regressions(Tables 6 and 7). There were two regressions alike in every way except that one of the regressions included the Smoke variable and therefore had to exclude the years preceding 1995 (Table 7). The regressions featured the ETV ratio as the dependant variable and the independent variables were those described in Table 5. These regressions were an important feature of our analysis. They allow us to determine just what characteristics play an important role in the equity to value ratio of the household. We expect that characteristics that might signal more risky behavior (such as lower credit score, or smoking) would be negatively correlated with lower ETV levels. And the characteristics that might indicate more risk adverse behavior (for example, not being delinquent on their loan) should be positively correlated with higher ETV ratios.

Results

As seen with evidence from the Survey of Consumer finances, the proportion of households with any form of home equity loan broadly increased from 21.84% in 1989 to 30.42% in 2007 (Table 1). The proportion of households with home equity lines of credit grew dramatically from 1989 through 2007. Home equity lines of credit increased from 12.75% in 1989 to a sustained level of 21.67% in 2004 and 21.72% in 2007. Home equity loans changed relatively little though out our study period. Therefore, the

general increase in home equity loans is explained by the relatively large increase in home equity lines of credit.

Table 1
Home Equity Loans and Home Equity Lines of Credit, SCF 1989-2007.

Type of Loan	1989	1992	1995	1998	2001	2004	2007
HELOC	12.75%	14.70%	11.70%	15.06%	14.31%	21.67%	21.72%
HEL	9.09%	8.28%	8.23%	10.51%	9.38%	6.44%	8.70%
Total	21.84%	22.98%	19.93%	25.57%	23.69%	28.12%	30.42%

With the emergence of home equity lines of credit playing such a major role in the loans seen throughout the early and middle 2000s, we turned our focus on just where households originate these loans. In all years commercial banks or trust companies played a consistently significant role in the source of any home equity loan (Table 2). From 1989 through 1998 we found that it was the largest role. However, from 2001 to 2007 mortgage companies and mortgage brokers quickly became a major player in the market. This source of home equity loans remained below 10% until 2001 and trended upward to its highest (35.71%) in 2007. During this time households substituted away from savings and loan institutions ("Thrifts") and finance and loan companies as well.

Table 2
Sources of Home Equity Loans and Home Equity Lines of Credit, SCF 1989-2007.

Institution	1989	1992	1995	1998	2001	2004	2007
Commercial Bank; Trust Company	44.36%	51.96%	44.57%	41.23%	44.00%	43.26%	46.17%
Mortgage Company; Mortgage Broker	8.81%	9.50%	6.48%	5.89%	26.21%	26.86%	35.71%
Savings and Loan or Savings Bank	26.69%	13.88%	15.46%	12.65%	6.84%	7.99%	5.22%
Finance or Loan Company	11.31%	10.22%	22.41%	32.75%	12.47%	13.47%	5.06%
Credit Union	4.48%	10.31%	8.82%	6.45%	10.09%	7.10%	7.26%
Prior Owner	3.02%	3.22%	1.35%	0.53%	0.40%	1.31%	0.59%
Special Federal Government Agency	1.33%	0.90%	0.92%	0.50%	0.00%	0.00%	0.00%

Households use home equity loans for a variety of reasons, from home repair to paying for educational expenses. Under some financing programs, consumers can also use home equity loans to supplement their primary mortgage. Between 1989 and 2007, more borrowers used their home equity loans for general expenses, while fewer used them for home purchases (Table 3). In contrast, more households used home equity loans for general expenses, while fewer used them for home purchases. In contrast, more households used home equity line of credit for home improvement and repair, while fewer used home equity lines of credit for professional services or education. Broadly across all years, households reasons for using the equity in their home for a loan was consistently for home improvement or repair and general expenses.

Table 3
Purpose for Taking out a Home Equity Loans and Home Equity Lines of Credit, SCF 1989-2007.

Institution	1989	1992	1995	1998	2001	2004	2007
Purchase	13.55%	11.11%	15.14%	6.14%	10.37%	10.78%	10.55%
Improvement; Repair	29.84%	32.76%	42.69%	37.92%	41.36%	40.00%	43.24%
Vehicle	10.69%	11.38%	9.99%	9.72%	10.18%	8.03%	6.81%
Appliance; Furniture	2.14%	5.33%	1.12%	2.51%	1.76%	1.18%	0.83%
Large Misc.	0.00%	1.28%	1.65%	1.81%	1.09%	0.56%	0.26%

ATV; Boats	0.00%	1.84%	1.11%	0.22%	1.93%	2.14%	1.13%
Investments	8.05%	10.55%	11.03%	9.07%	11.32%	9.25%	9.48%
Personal	2.25%	3.40%	3.11%	3.12%	3.19%	2.14%	4.93%
Education; Professional Services	8.67%	8.15%	7.90%	6.38%	6.21%	4.50%	4.02%
General Expenses	31.59%	22.40%	27.95%	25.40%	26.43%	34.23%	33.09%

For all households, the home equity to value ratio (ETV) significantly declined from 1989 to 2007 (Table 4). The decrease in ETV ratio through 2007 is due to the households tapping the equity in their homes. A decline in home values could be the cause of this downward trend in equity to value (ETV) ratios. However, home values did not experience declining values largely until 2008. This of course is after our sample and therefore not an explanation (Aizcorbe, 2003).

Table 4
Average Cumulative Equity to Value Ratio, SCF 1989-2007.

ETV Ratio	1989	1992	1995	1998	2001	2004	2007
Net equity in primary residence / Value of Primary residence	72.58%	69.03%	65.72%	63.14%	64.30%	61.69%	62.57%

Tables 6 and 7 present the results of our regressions. For our major findings we turn to our first regressions that use the SCF. Again, we would expect that risky or poor financial performance would point to lower levels of equity to value ratios in the households. Firstly, we found that the demographic variables were helpful in better understanding the households in the data.

In both regressions the age of the head of household (as the variable is defined in SCF) was monotonically increasing in positively correlated with the ETV ratio relative to the younger cohort. We would expect this to be the case as the household age increases so too should the amount of equity accumulated in the home. All the age variables were highly statistically significant at all reasonable levels significance. Race was mostly insignificant except for Blacks relative to Whites. Blacks were slightly negatively correlated with ETV ratios and this was only moderately statistically significant.

All education levels in both regressions were significant in every case except the full data set (Table 6). Here, the less than high school variable was not statically significant. But in all cases all the levels or education relative to the college or better variable, were negatively correlated to higher levels of ETV ratios. This would make sense and confirm the notion that higher education is correlated with higher incomes and therefore having a better ability to pay off their home equity loans. We then observed the income quintiles relative to the highest (i.e. 5^{th} quintile). In both regressions, the 2^{nd} income quintile was not statically significant. However, in all cases the income quintiles were monotonically and negatively decreasing relative to the highest or 5^{th} quintile. This result is as puzzling as it is unexpected to us. It is possible that households with the 5^{th} can pay off their loans easier to the 3^{rd} and 4^{th} quintiles. Reasons for this might be that the 3^{rd} and 4^{th} quintiles are households using the equity in their homes for some consumer investment now with a perceived future payoff not yet realized.

Marital status was largely insignificant in both regressions. Housing tenure was highly significant and only slightly positively correlated. We expected this to be the case as the longer the household has lived in their home we would expect the household to make positive equity progress. In the all year's regression (Table 6), having a home equity line of credit was significant but only slightly positively correlated. The other regression (i.e. the 1995 through 2007, Table 7), confirmed the previous result of a significant and positively correlated home equity line of credit result. However, with this regression we also found that of those who had a home equity loan were negatively correlated with higher ETV ratios. This could mean that those households who took out home equity loans later in the late 1990s and early 2000s were much more willing to participate in using the equity in their homes to finance their consumption choices. This finding is consistent with the notion that home equity loans became far more popular in the United States during this time (Brady, 2000).

We turned our attention to the credit risk measures of the regressions. Good credit quality was found to be significant and positively correlated with a greater ETV ratio (Table 6 and 7). In both regressions if you received your loan from a conventional mortgage company, the household was significantly negatively related to a better ETV ratio. This might not be so surprising if we remember that the bulk of the loans in general are from these types of firms. Delinquency was moderately to highly significant in relationship to the ETV ratio in both regressions. They were uniformly negative which we would expect as households with lower ETV ratios have lower incentives to invest in their loan on time. But the direction could easily go the other way as well. For whatever reason, if the household becomes delinquent, the natural outcome is to lower the ETV ratio for that household.

Saving habits of almost any kind were positive and generally significant in both regressions as well (Table 6 and 7). Across both regressions shopping little to none for their loan was positive and significant. While shopping moderately was moderately significant and negatively relative to shopping lots. In the 1995 to 2007 regression (Table 7), we find the smoking variable was insignificant and only slightly negative in relation to the ETV ratio. Although many of these specific results are inconclusive, we still observe that saving habits by consumers is an important and significant indicator of a better ETV ratio.

Finally, we find that no matter what purpose the household was using the home equity loan or home equity line of credit for they were all greatly statistically significant and negatively related to the ETV ratio. The most negatively related were purposes for investment or capital and personal or general expenses in the 1989 to 2007 regression (Table 6). As for the 1995 to 2007 regression, investment or capital and vehicle played the largest role (Table 7). We would expect these results, as the very nature of the loan being established with the equity in the home. These results point to the validity of the ETV ratio as a strong indicator of credit decisions by households.

Conclusions

Building equity in the home has been an important factor of building wealth for households. This home equity is largely accepted and used as credit for households to satisfy consumer financial decisions. The incidence of home equity lending has, as we have shown, increased over the years. Consumers have received their loans from many different sources. Indeed, consumers have in recent years also used the equity in their homes to finance many different financial purposes. Finally we have observed that ETV ratio's in households have steadily declined in recent years. A general equity loss is an important observable fact given the consumer financial implications. Our study tracked the levels of these financial equity decisions over time and demonstrated trends and indicators that point to the characteristics of households with lower ETV ratios.

The results show that higher ETV ratios are found among old consumers with good credit quality and have owned with house longer. Saving in any form by the consumer is also positively correlated with a higher ETV ratio. These kinds of consumer behaviors therefore help the household to build wealth. To a large extent, this is important to consumers as they engage in making financial decisions to better position themselves for financial success.

In contrast, the decline in equity in the home of a consumer is a concern. We have shown that young, non-higher educated and delinquent households have consistently and significantly lower ETV ratios. These consumers then do not have the advantages that come along with greater wealth in the household. Logically, promoting financial education is a clear and fundamental way to address consumers who might wrong foot themselves with bad financial decisions.

Table 5
Descriptions and sample statistics of variables, 1989-2007 SCF.

Variable	Measurements	Freq / %
Number of Observations	Unweighted, all 5 implicates	100,760
ETV Ratio	Mean	0.635
	Median	0.681
	Min	-75.72
	Max	1.00
Year	1989	11,285
	1992	13,310
	1995	14,960
	1998	14,465
	2001	15,155
	2004	15,745
	2007	15,840
Age	Mean	52.77
	Median	51
	Min	18
	Max	95
Age Buckets	Less than 35	0.134
	35 to less than 55	0.439
	55 to less than 65	0.171
	Greater than/equal to 65	0.256
Race	White	0.825
	Black	0.090
	Hispanic	0.053
	Other	0.032
Income	Mean	74453.08
	Median	46000
	Min	-1000000
	Max	182,000,000
Education	Less than high school	0.153
	High school	0.285
	Some college	0.221
	Greater than or equal to college	0.562
Income Quintiles	1st Quintile	0.114
	2nd Quintile	0.159
	3rd Quintile	0.196
	4th Quintile	0.246
	5th Quintile	0.285
Gender - Married	Female	0.213
	Male	0.787

	Single Female	0.211
	Single Male	0.134
	Married	0.655
Housing	Own home	0.926
	Home equity loan	0.060
	Home equity line of credit	0.130
	Conventional loan source	0.364
Housing Tenure (2008 is year zero)	Mean	23.851
	Median	21
	Min	0
	Max	88
Usage of HEL or HELOC (Of those with a HEL or HELOC)	Home improvements	0.434
	Investment or capital	0.085
	Personal / general expenses	0.081
	Home purchase / construction	0.104
	Education / professional expenses	0.052
	Vehicle	0.221
	All other	0.022
Risk based behavior	Good credit quality	0.939
	Delinquent greater than or equal to 2 months	0.038
	Delinquent less than 2 months	0.127
	Smoke (1995-2007)	0.143
Saving behavior	Save 1 family members income	0.048
	Spend regular income, save other income	0.106
	Save regularly	0.846
Loan shopping behavior	Shop little or none	0.235
	Shop moderate	0.487
	Shop lots	0.278

Table 6
OLS Regression Results, SCF 1989-2007.

Variable	Coefficient	Prob. Sig.

Number of observations = 100,760		
Intercept	0.309	0.000
Equity Risk Measures Related to ETV ratio		
Household Information		
Age		
18-34	Base	Base
35-54	0.161	0.000
55-64	0.248	0.000
65 & over	0.285	0.000
Race		
White	Base	Base
Black	-0.021	0.023
Hispanic	-0.009	0.421
All other races	0.017	0.128
Education		
Less than high school	-0.005	0.540
High school	-0.017	0.004
Some college	-0.022	0.000
College and greater	Base	Base
Income		
1st quintile	0.028	0.004
2nd quintile	0.002	0.773
3rd quintile	-0.037	0.000
4th quintile	-0.045	0.000
5th quintile	Base	Base
Marital status		
Married	-0.000	0.992
Single female	0.006	0.470
Single male	Base	Base
Household Tenure	0.007	0.000
Have a Home Equity Loan	0.003	0.798
Have a Home Equity Line of Credit	0.078	0.000
Credit Risk Measures		
Good credit quality	0.163	0.000
Conventional mortgage company	-0.090	0.000
Unconventional mortgage company	Base	Base
Delinquent on loan greater than 2 months	-0.068	0.000
Delinquent on loan less than 2 months	-0.015	0.068
Not Delinquent on loan	Base	Base
Save 1 family members income	0.016	0.226
Spend regular income, save other income	0.036	0.000
Save regularly	Base	Base
Shop little or none for loan	0.035	0.000
Shop moderately for loan	-0.009	0.061
Shop lots for loan	Base	Base
Purposes for home equity loan		
Home improvements	-0.132	0.000
Investment or capital	-0.465	0.000
Personal / general expenses	-0.328	0.000

Home purchase / construction	-0.194	0.000
Education / professional expenses	-0.149	0.000
Vehicle	-0.244	0.000
All other	Base	Base
Years		
1989	-0.079	0.000
1992	-0.134	0.000
1995	-0.099	0.000
1998	-0.073	0.000
2001	-0.040	0.000
2004	-0.028	0.000
2007	Base	Base

Table 7
OLS Regression Results, SCF 1995-2007.

OLS Regression Results 1995-2007		
Variable	**Coefficient**	**Prob. Sig.**
Number of observations = 76,165		
Intercept	0.422	0.000
Equity Risk Measures Related to ETV ratio		
Household Information		
Age		
18-34	Base	Base
35-54	0.161	0.000
55-64	0.262	0.000
65 & over	0.296	0.000
Race		
White	Base	Base
Black	-0.050	0.000
Hispanic	-0.007	0.285
All other races	0.006	0.393
Education		
Less than high school	-0.018	0.001
High school	-0.026	0.000
Some college	-0.036	0.000
College and greater	Base	Base
Income		
1st quintile	0.015	0.013
2nd quintile	-0.007	0.143
3rd quintile	-0.053	0.000
4th quintile	-0.058	0.000
5th quintile	Base	Base
Marital status		
Married	0.000	0.957
Single female	0.001	0.764
Single male	Base	Base

Household Tenure	0.007	0.000
Have a Home Equity Loan	-0.054	0.000
Have a Home Equity Line of Credit	0.041	0.000
Credit Risk Measures		
Good credit quality	0.064	0.000
Conventional mortgage company	-0.104	0.000
Unconventional mortgage company	Base	Base
Delinquent on loan greater than 2 months	-0.088	0.000
Delinquent on loan less than 2 months	-0.020	0.000
Not Delinquent on loan	Base	Base
Save 1 family members income	0.024	0.003
Spend regular income, save other income	0.031	0.000
Save regularly	Base	Base
Shop little or none for loan	0.019	0.000
Shop moderately for loan	-0.025	0.000
Shop lots for loan	Base	Base
Smoke regularly	-0.004	0.216
Purposes for home equity loan		
Home improvements	-0.106	0.000
Investment or capital	-0.314	0.000
Personal / general expenses	-0.151	0.000
Home purchase / construction	-0.185	0.000
Education / professional expenses	-0.143	0.000
Vehicle	-0.217	0.000
All other	Base	Base
Years		
1995	-0.105	0.000
1998	-0.072	0.000
2001	-0.038	0.000
2004	-0.028	0.000
2007	Base	Base

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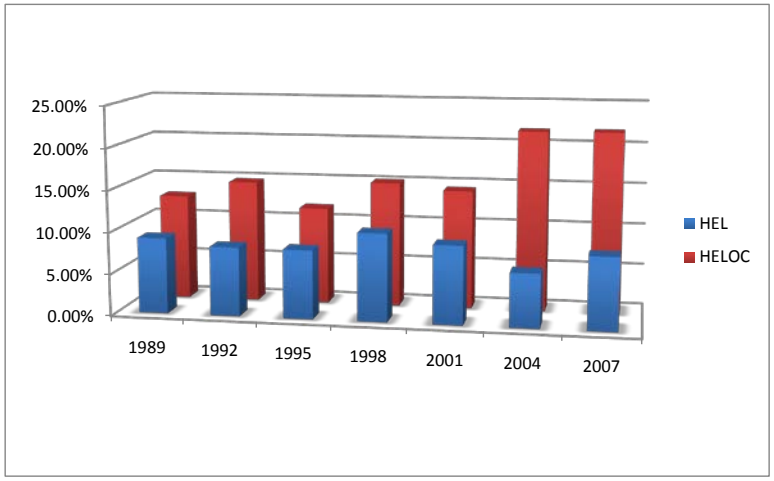
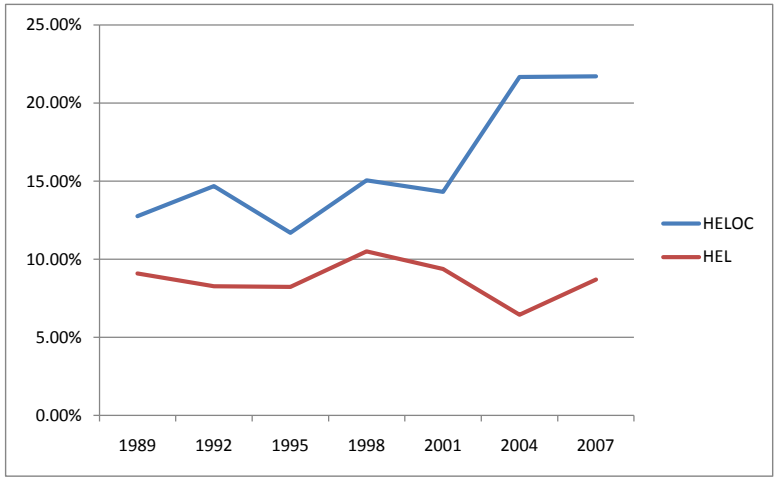
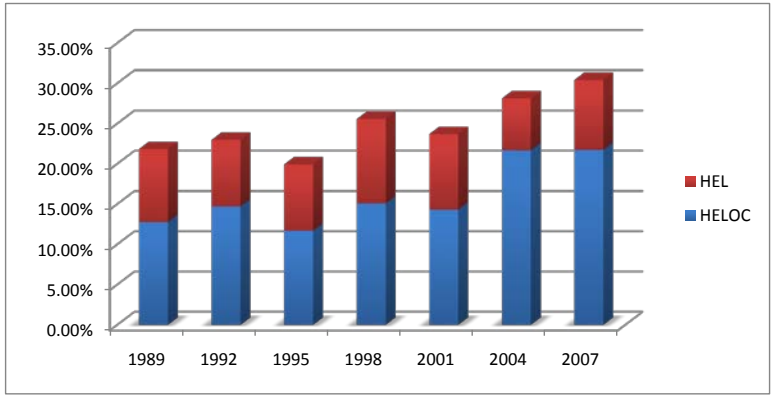
Tables for Home Equity Lending project

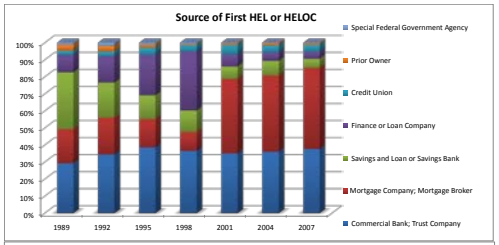
What proportion of home owners have home equity loans?

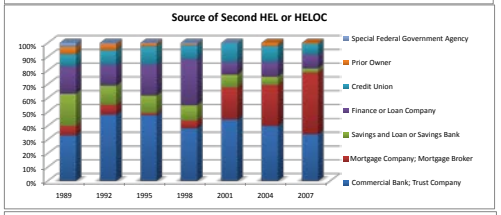
Type of Loan	1989	1992	1995	1998	2001	2004	2007
HELOC	12.75%	14.70%	11.70%	15.06%	14.31%	21.67%	21.72%
HEL	9.09%	8.28%	8.23%	10.51%	9.38%	6.44%	8.70%
Total	21.84%	22.98%	19.93%	25.57%	23.69%	28.12%	30.42%











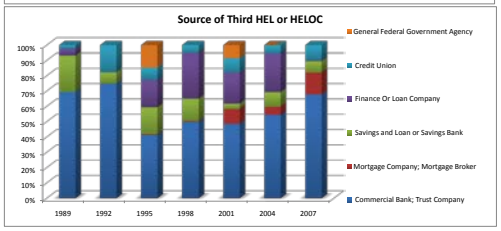


Table Source of First HEL or HELOC

Institution	1989	1992	1995	1998	2001	2004	2007
Commercial Bank; Trust Company	27.60%	32.44%	36.47%	35.55%	33.58%	34.81%	36.92%
Mortgage Company; Mortgage Broker	18.87%	20.31%	15.67%	10.76%	41.90%	43.42%	46.55%
Savings and Loan or Savings Bank	31.49%	19.37%	13.22%	12.27%	6.96%	8.25%	5.22%
Finance or Loan Company	9.61%	14.45%	22.38%	33.63%	6.54%	4.71%	4.07%
Credit Union	2.27%	2.63%	4.10%	3.71%	5.71%	4.15%	4.11%
Prior Owner	3.42%	3.08%	1.63%	0.60%	1.09%	1.44%	1.07%
Special Federal Government Agency	1.08%	1.84%	1.06%	0.69%			

Table Source of Second HEL or HELOC

Institution	1989	1992	1995	1998	2001	2004	2007
Commercial Bank; Trust Company	30.68%	46.97%	43.85%	37.89%	43.17%	38.20%	33.44%
Mortgage Company; Mortgage Broker	6.44%	6.84%	1.33%	5.50%	22.41%	28.41%	44.24%
Savings and Loan or Savings Bank	21.40%	13.50%	11.45%	10.82%	8.92%	5.70%	2.98%
Finance or Loan Company	18.41%	14.64%	20.69%	33.23%	8.90%	10.36%	10.02%
Credit Union	8.20%	10.49%	12.05%	10.10%	13.47%	10.96%	7.74%
Prior Owner	4.99%	4.49%	2.02%	0.91%	0.04%	2.31%	0.66%
Special Federal Government Agency	2.73%	0.74%	0.33%	0.74%			

Table Source of Third HEL or HELOC

Institution	1989	1992	1995	1998	2001	2004	2007
Commercial Bank; Trust Company	69.09%	69.13%	40.16%	43.92%	47.23%	50.56%	64.71%
Mortgage Company; Mortgage Broker			0.52%	0.51%	9.54%	4.91%	13.66%
Savings and Loan or Savings Bank	23.76%	6.82%	17.11%	12.93%	3.39%	8.89%	7.07%
Finance Or Loan Company	4.47%	0.12%	17.49%	26.36%	19.71%	23.41%	0.69%
Credit Union	2.40%	16.36%	7.68%	4.55%	9.25%	5.18%	9.38%
Prior Owner	0.26%	1.64%					
Special Federal Government Agency			1.09%				

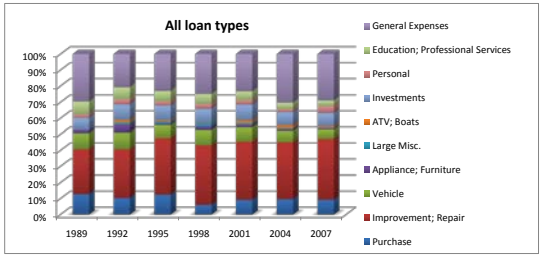
Table Source of HEL or HELOC Cummulative

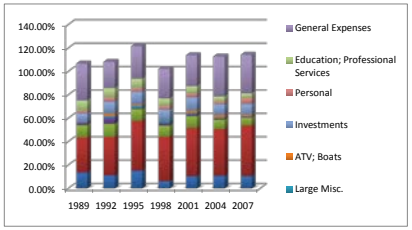
Institution	1989	1992	1995	1998	2001	2004	2007
Commercial Bank; Trust Compan	0.276	0.3244	0.3647	0.3555	0.3358	0.3481	0.3692
Mortgage Company; Mortgage B	0.1887	0.2031	0.1567	0.1076	0.419	0.4342	0.4655
Savings and Loan or Savings Ban	0.3149	0.1937	0.1322	0.1227	0.0696	0.0825	0.0522
Finance or Loan Company	0.0961	0.1445	0.2238	0.3363	0.0654	0.0471	0.0407
Credit Union	0.0227	0.0263	0.041	0.0371	0.0571	0.0415	0.0411
Prior Owner	0.0342	0.0308	0.0163	0.006	0.0109	0.0144	0.0107
Special Federal Government Age	0.0108	0.0184	0.0106	0.0069			
Table Source of Second HEL or HELOC							
Commercial Bank; Trust Compan	0.306769	0.469655	0.438458	0.378946	0.431709	0.382045	0.334383
Mortgage Company; Mortgage B	0.06436	0.068442	0.013279	0.055018	0.224104	0.284116	0.442393
Savings and Loan or Savings Ban	0.213996	0.134968	0.114516	0.108171	0.08919	0.056983	0.029787
Finance or Loan Company	0.184115	0.146443	0.206914	0.332266	0.088958	0.103586	0.100242
Credit Union	0.081984	0.104906	0.12053	0.101026	0.134697	0.109631	0.077351
Prior Owner	0.049853	0.044908	0.020158	0.009053	0.000357	0.023118	0.006607
Special Federal Government Age	0.027305	0.007379	0.003347	0.00741			
Table Source of Third HEL or HELOC							
Commercial Bank; Trust Compan	0.690896	0.691305	0.401575	0.439214	0.472252	0.505563	0.647073
Mortgage Company; Mortgage B			0.005187	0.0051	0.095355	0.04908	0.136629
Savings and Loan or Savings Ban	0.237577	0.068215	0.171135	0.129264	0.033929	0.088894	0.070699
Finance Or Loan Company	0.044662	0.001196	0.174922	0.26363	0.197068	0.234108	0.006933
Credit Union	0.02397	0.16357	0.076767	0.045506	0.092526	0.051787	0.093799
Prior Owner	0.002607	0.016441					
Special Federal Government Age			0.010906				

Institution	1989	1992	1995	1998	2001	2004	2007
Commercial Bank; Trust Company	44.36%	51.96%	44.57%	41.23%	44.00%	43.26%	46.17%
Mortgage Company; Mortgage Broker	8.81%	9.50%	6.48%	5.89%	26.21%	26.86%	35.71%
Savings and Loan or Savings Bank	26.69%	13.88%	15.46%	12.65%	6.84%	7.99%	5.22%
Finance or Loan Company	11.31%	10.22%	22.41%	32.75%	12.47%	13.47%	5.06%
Credit Union	4.48%	10.31%	8.82%	6.45%	10.09%	7.10%	7.26%
Prior Owner	3.02%	3.22%	1.35%	0.53%	0.40%	1.31%	0.59%
Special Federal Government Agency	1.33%	0.90%	0.92%	0.50%	0.00%	0.00%	0.00%

Aggergated all Loan Types

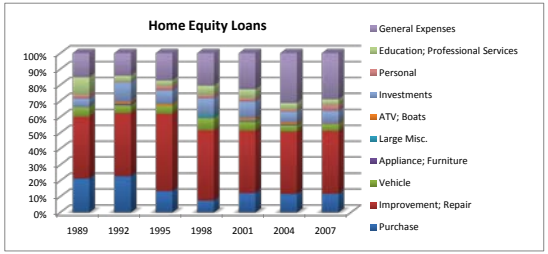
	1989	1992	1995	1998	2001	2004	2007
Purchase	13.55%	11.11%	15.14%	6.14%	10.37%	10.78%	10.55%
Improvement; Repair	29.84%	32.76%	42.69%	37.92%	41.36%	40.00%	43.24%
Vehicle	10.69%	11.38%	9.99%	9.72%	10.18%	8.03%	6.81%
Appliance; Furniture	2.14%	5.33%	1.12%	2.51%	1.76%	1.18%	0.83%
Large Misc.	0.00%	1.28%	1.65%	1.81%	1.09%	0.56%	0.26%
ATV; Boats	0.00%	1.84%	1.11%	0.22%	1.93%	2.14%	1.13%
Investments	8.05%	10.55%	11.03%	9.07%	11.32%	9.25%	9.48%
Personal	2.25%	3.40%	3.11%	3.12%	3.19%	2.14%	4.93%
Education; Professional Services	8.67%	8.15%	7.90%	6.38%	6.21%	4.50%	4.02%
General Expenses	31.59%	22.40%	27.95%	25.40%	26.43%	34.23%	33.09%

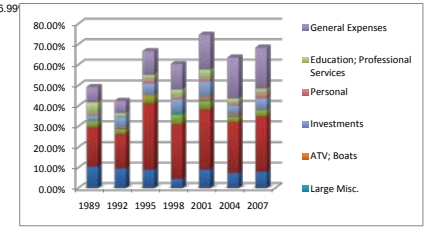




Aggergated all HEL

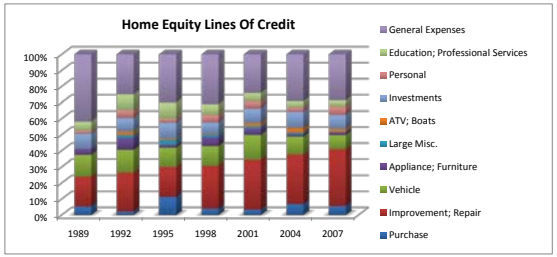
	1989	1992	1995	1998	2001	2004	2007
Purchase	10.48%	9.66%	8.92%	4.47%	9.04%	7.39%	8.00%
Improvement; Repair	19.11%	16.83%	32.38%	26.68%	29.22%	24.82%	26.97%
Vehicle	2.94%	2.10%	3.47%	4.66%	4.07%	2.53%	2.75%
Appliance; Furniture	0.00%	0.36%	0.02%	0.14%	0.19%	0.39%	0.00%
Large Misc.	0.00%	0.09%	0.00%	1.10%	0.56%	0.07%	0.12%
ATV; Boats	0.00%	0.52%	0.71%	0.03%	1.19%	0.75%	0.32%
Investments	2.60%	5.05%	5.57%	6.19%	7.75%	4.27%	5.48%
Personal	1.14%	0.13%	1.77%	1.20%	1.44%	0.90%	2.54%
Education; Professional Services	5.49%	1.68%	2.32%	3.53%	4.15%	2.53%	2.23%
General Expenses	7.45%	6.03%	11.48%	12.38%	16.99		

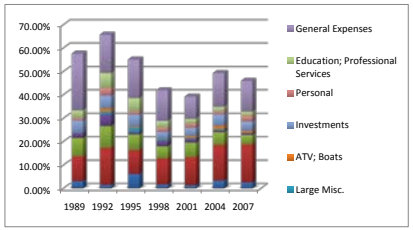




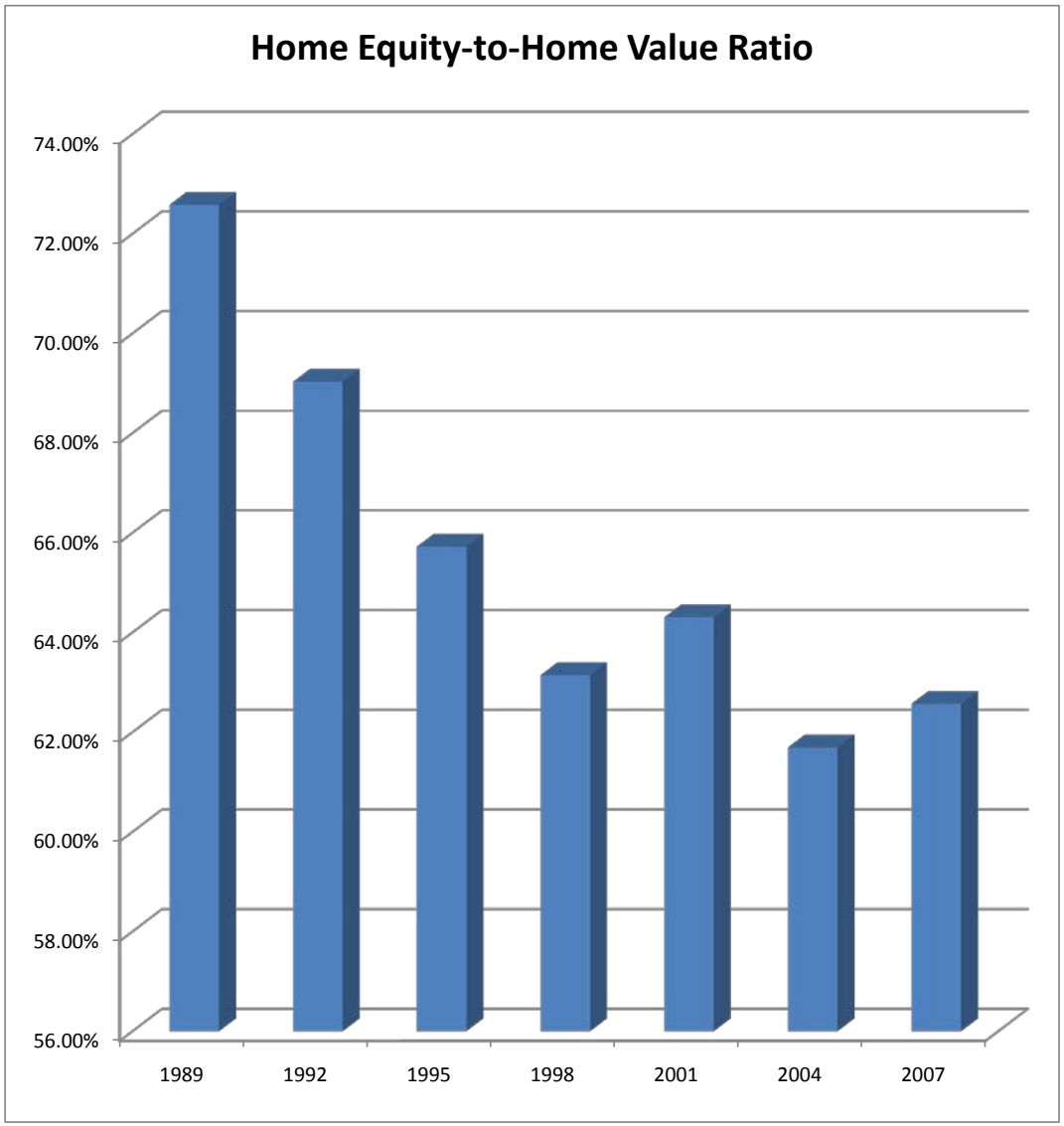
Aggergated all HELOCs

	1989	1992	1995	1998	2001	2004	2007
Purchase	3.07%	1.45%	6.22%	1.67%	1.32%	3.39%	2.55%
Improvement; Repair	10.73%	15.93%	10.31%	11.24%	12.14%	15.18%	16.27%
Vehicle	7.75%	9.28%	6.52%	5.06%	6.10%	5.51%	4.06%
Appliance; Furniture	2.14%	4.97%	1.10%	2.37%	1.57%	0.79%	0.83%
Large Misc.	0.00%	1.19%	1.65%	0.72%	0.53%	0.49%	0.14%
ATV; Boats	0.00%	1.33%	0.40%	0.18%	0.75%	1.40%	0.81%
Investments	5.45%	5.50%	5.45%	2.89%	3.57%	4.98%	4.00%
Personal	1.11%	3.26%	1.34%	1.92%	1.75%	1.24%	2.40%
Education; Professional Services	3.18%	6.46%	5.57%	2.85%	2.06%	1.97%	1.79%
General Expenses	24.14%	16.38%	16.47%	13.02%	9.44%	14.39%	13.19%





	1989	1992	1995	1998	2001	2004	2007
Net equity in primary residence / Value of Primary residence	72.58%	69.03%	65.72%	63.14%	64.30%	61.69%	62.57%
Minimum ETV Value	-200.00%	-164.00%	-321.60%	-278.57%	-255.20%	-448.89%	-317.30%



Variable	Measurements	Freq / %
Number of Observations	Unweighted, all 5 implicates	100,760
ETV Ratio	Mean	0.635
	Median	0.681
	Min	-75.72
	Max	1.00
Year	1989	11,285
	1992	13,310
	1995	14,960
	1998	14,465
	2001	15,155
	2004	15,745
	2007	15,840
Age	Mean	52.77
	Median	51
	Min	18
	Max	95
Age Buckets	Less than 35	0.134
	35 to less than 55	0.439
	55 to less than 65	0.171
	Greater than/equal to 65	0.256
Race	White	0.825
	Black	0.090
	Hispanic	0.053
	Other	0.032
Income	Mean	74453.08
	Median	46000
	Min	-1000000
	Max	182,000,000
Education	Less than high school	0.153
	High school	0.285
	Some college	0.221
	Greater than or equal to college	0.562
Income Quintiles	1st Quintile	0.114
	2nd Quintile	0.159
	3rd Quintile	0.196
	4th Quintile	0.246
	5th Quintile	0.285
Gender - Married	Female	0.213
	Male	0.787
	Single Female	0.211
	Single Male	0.134
	Married	0.655
Housing	Own home	0.926
	Home equity loan	0.060
	Home equity line of credit	0.130
	Conventional loan source	0.364
Housing Tenure	Mean	23.851
(2008 is year zero)	Median	21
	Min	0
	Max	88
Usage of HEL or HELOC	Home improvements	0.434
(Of those with a HEL or HELOC)	Investment or capital	0.085
	Personal / general expenses	0.081
	Home purchase / construction	0.104
	Education / professional expenses	0.052
	Vehicle	0.221
	All other	0.022
Risk based behavior	Good credit quality	0.939
	Delinquent greater than or equal to 2 months	0.038
	Delinquent less than 2 months	0.127
	Smoke (1998-2007)	0.143
Saving behavior	Save 1 family members income	0.048
	Spend regular income, save other income	0.106
	Save regularly	0.846
Loan shopping behavior	Shop little or none	0.235
	Shop moderate	0.487
	Shop lots	0.278

OLS Regression Results 1989-2007

Variable	coefficient	Prob. Sig.
Number of observations = 100,760		
Intercept	0.309	0.000
Equity Risk Measures Related to ETV ratio		
Household Information		
Age		
18-34	Base	Base
35-54	0.161	0.000
55-64	0.248	0.000
65 & over	0.285	0.000
Race		
White	Base	Base
Black	-0.021	0.023
Hispanic	-0.009	0.421
All other races	0.017	0.128
Education		
Less than high school	-0.005	0.540
High school	-0.017	0.004
Some college	-0.022	0.000
College and greater	Base	Base
Income		
1st quintile	0.028	0.004
2nd quintile	0.002	0.773
3rd quintile	-0.037	0.000
4th quintile	-0.045	0.000
5th quintile	Base	Base
Marital status		
Married	-0.000	0.992
Single female	0.006	0.470
Single male	Base	Base
Household Tenure	0.007	0.000
Have a Home Equity Loan	0.003	0.798
Have a Home Equity Line of Credit	0.078	0.000
Credit Risk Measures		
Good credit quality	0.163	0.000
Conventional mortgage company	-0.090	0.000
Unconventional mortgage company	Base	Base
Delinquent on loan greater than 2 months	-0.068	0.000
Delinquent on loan less than 2 months	-0.015	0.068
Not Delinquent on loan	Base	Base
Save 1 family members income	0.016	0.226
Spend regular income, save other income	0.036	0.000
Save regularly	Base	Base
Shop little or none for loan	0.035	0.000
Shop moderately for loan	-0.009	0.061
Shop lots for loan	Base	Base
Purposes for home equity loan		
Home improvements	-0.132	0.000
Investment or capital	-0.465	0.000
Personal / general expenses	-0.328	0.000
Home purchase / construction	-0.194	0.000
Education / professional expenses	-0.149	0.000
Vehicle	-0.244	0.000
All other	Base	Base
Years		
1989	-0.079	0.000
1992	-0.134	0.000
1995	-0.099	0.000
1998	-0.073	0.000
2001	-0.040	0.000
2004	-0.028	0.000
2007	Base	Base

OLS Regression Results 1995-2007

Variable	coefficient	Prob. Sig.
Number of observations = 76,165		
Intercept	0.422	0.000
Equity Risk Measures Related to ETV ratio		
Household Information		
Age		
18-34	Base	Base
35-54	0.161	0.000
55-64	0.262	0.000
65 & over	0.296	0.000
Race		
White	Base	Base
Black	-0.050	0.000
Hispanic	-0.007	0.285
All other races	0.006	0.393
Education		
Less than high school	-0.018	0.001
High school	-0.026	0.000
Some college	-0.036	0.000
College and greater	Base	Base
Income		
1st quintile	0.015	0.013
2nd quintile	-0.007	0.143
3rd quintile	-0.053	0.000
4th quintile	-0.058	0.000
5th quintile	Base	Base
Marital status		
Married	0.000	0.957
Single female	0.001	0.764
Single male	Base	Base
Household Tenure	0.007	0.000
Have a Home Equity Loan	-0.054	0.000
Have a Home Equity Line of Credit	0.041	0.000
Credit Risk Measures		
Good credit quality	0.064	0.000
Conventional mortgage company	-0.104	0.000
Unconventional mortgage company	Base	Base
Delinquent on loan greater than 2 months	-0.088	0.000
Delinquent on loan less than 2 months	-0.020	0.000
Not Delinquent on loan	Base	Base
Save 1 family members income	0.024	0.003
Spend regular income, save other income	0.031	0.000
Save regularly	Base	Base
Shop little or none for loan	0.019	0.000
Shop moderately for loan	-0.025	0.000
Shop lots for loan	Base	Base
Smoke regularly	-0.004	0.216
Purposes for home equity loan		
Home improvements	-0.106	0.000
Investment or capital	-0.314	0.000
Personal / general expenses	-0.151	0.000
Home purchase / construction	-0.185	0.000
Education / professional expenses	-0.143	0.000
Vehicle	-0.217	0.000
All other	Base	Base
Years		
1995	-0.105	0.000
1998	-0.072	0.000
2001	-0.038	0.000
2004	-0.028	0.000
2007	Base	Base