

Preliminary Draft – Do not Cite
12-17-03

**Housing Wealth, Financial Wealth, and Consumption:
New Evidence from Micro Data ¹**

By

Raphael Bostic
Stuart Gabriel
Gary Painter

Lusk Center for Real Estate
Marshall School of Business and School of Policy, Planning and Development
University of Southern California
331 Lewis Hall
Los Angeles, California 90089-0626
bostic@usc.edu, sgabriel@marshall.usc.edu, and gpainter@usc.edu

December 2003

Abstract

Fluctuations in the stock market and in house values over the course of recent years have led to renewed economic policy debate as regards the effects of financial and housing wealth in the determination of household consumption patterns. This research assembles a unique matched data sample from the Survey of Consumer Finance and the Consumer Expenditure Survey to estimate the consumption effects of both financial and housing wealth. The micro-data permit numerous innovations in the assessment of wealth effects, including (1) an analysis of the impact of wealth on both durable and non-durable consumption; (2) a comparison of wealth effects as derive from gross versus after-debt measures of financial and housing wealth; and (3) an assessment of the differential wealth effects associated with owner-occupied housing and other forms of real estate asset holdings. Overall, research findings indicate relatively large housing wealth effects. The results suggest the estimation of significant coefficients in both the cases of both financial and housing wealth; the implied elasticity with respect to total consumption is .02 percent for financial assets, and .04 percent for house values. Further, house values were much more important to non-durable consumption, whereas financial assets were much more important to durable consumption. Finally, results indicate that households pay more attention to the market values of their portfolios than to their net wealth positions.

¹ This paper was prepared for presentation at the 2004 AREUEA Annual meetings. The authors thank Jane Arnold for valuable research assistance.

I. Introduction

Recent years have witnessed widespread media attention and economic policy debate as regards the consumption effects of fluctuations in household financial and housing wealth. As is well-appreciated, stock prices have evidenced pronounced volatility over the course of recent years, running up by 450 percent during 1990-2000 prior to falling back by a full one-third during the subsequent two years. The collapse of the stock market destroyed more than \$8 trillion in paper wealth and was arguably a cause of the 2001 recession. In contrast to the weakness evidenced in business investment and labor markets, house values have moved up markedly in recent years. House values approximately doubled over the decade of the 1990s; further, home equity grew by about \$2 trillion dollars during 1999-2002 to comprise more than one-half of the wealth of the typical U.S. household.² Data from the Federal Reserve Board's Survey of Consumer Finances suggest that approximately \$100 billion in home equity was extracted in both 2001 and 2002, leading many media and economic analysts to attribute a critical role to housing wealth in the support of consumption activity.³ Notably, the re-finance boom of recent years was further supported by innovations in financial and mortgage markets that enabled households to access their wealth in cheaper, faster ways.⁴ These dramatic trends spurred widespread interest in the effect of stock market and housing wealth on household consumption. This interest only grew more acute in recent years, as consumer spending remained high despite a generally weak U.S. economic performance overall.

Consumption spending, however, may vary with different forms of wealth. As described by Case, Quigley, and Shiller (2003), households may view some forms of wealth as temporary or

² According to the 1998 Survey of Consumer Finances, financial wealth is concentrated in restricted accounts. In that regard, 84 percent of total stock market wealth is held by the top income quintile in the U.S.—the vast majority of which report that changes in stock prices had no effect on their spending or savings behavior.

³ Stock market fluctuations pertain to the S&P 500, whereas housing price fluctuations pertain to the Freddie Mac Conventional Mortgage House Price Series.

⁴ See Bostic and Surette (2001) for a discussion of some of these financial and mortgage market innovations.

more uncertain. Further, households may also find it more difficult to measure or liquefy certain types of wealth. Those concerns—together with the recent dramatic rise in home equity and increased ease of extraction thereof--have led a number of researchers to investigate the evolving role of both financial and housing wealth on consumption. While a number of studies confirm the role of changes in financial wealth on household consumption decisions (e.g., Poterba and Samwick, 1995; Brayton and Tinsley, 1996; Juster et al, 1999), other studies have found that both housing and financial wealth have significant impacts on consumption, and some studies indicate that changes in housing wealth have larger effects on consumption than do changes in financial wealth (e.g., Case, Shiller, Quigley, 2003; Benjamin et al., 2002).

Past assessments of financial and housing wealth effects, however, have been constrained as regards data resources and methodology. For the most part, earlier studies (see, for example, Bhatia (1987), Hendshott and Peek (1989), Skinner (1993), Englehardt (1996), Brayton and Tinsley (1996), Case, shiller, and Quigley (2001), Lehnart (2002), Frantantoni et al (2002) and Benjamin, Chinloy, and Jud (2002)) do not derive from well-articulated micro data that allow for the identification of the household spending, financial wealth, and home equity terms. Further, those studies typically cannot distinguish between effects on durable and non-durable consumption as derive from either gross or net-of-debt measures of household wealth. Oftentimes, the research derives from aggregate time-series data that fails to directly test the behavioral linkage between portfolio allocation and individual consumption decisions; also, the macro datasets typically do not control for household demographic and economic characteristics.

This study adds to the estimation of wealth effects in a number of important ways. By combining highly-articulated micro data on household wealth from the Survey of Consumer Finances (SCF) with household consumption and demographic information from the Consumer Expenditure Survey (CEX), we develop a unique micro data set that permits a careful and nuanced investigation of the relationship between consumer spending and the various wealth measures. In contrast to prior research, we are able to disaggregate consumption spending into

durable and non-durable goods categories and test for differential wealth estimates across those categories. Previous research has focused on total consumption or food purchases, and the purchase of consumer durables may be more or less affected by changes in wealth. If a durable goods spending is predicated in part on unanticipated wealth increases, then it is possible that durable consumption may have a greater elasticity with respect to wealth than non-durable consumption. Alternatively, if durables are long term purchases they may be less affected by short-run fluctuations in wealth.

Next, we use the household balance sheet information from the SCF to estimate wealth effects across financial, housing and other forms of wealth. The SCF information on household wealth is sufficiently detailed so as to permit the separation of holdings of owner-occupied real estate from other forms of real estate and to estimate related wealth effects. While very few households hold other forms of real estate, asset values in these markets are more volatile than those of owner-occupied housing, and therefore may have a different impact on consumption.

Finally, we test whether households base their consumption decisions on the market value of their asset holdings or on those wealth measures net of debt. To our knowledge, only one prior study of consumption spending (Dvornak and Kohler, 2003) has used a measure of net wealth – in this case, home equity – to assess housing wealth effects. That analysis, however, was confined to aggregate data. Otherwise, remaining studies examine the relationship between consumption and asset market values. The estimated relationship is then taken to represent wealth effects. However, this equivalence need not hold. For example, if households view changes in asset value and wealth in different “mental account” (Shefrin and Thaler, 1988), then households may respond differently to changes in the market value of assets than in their net positions in financial or housing wealth.

Overall, research findings indicate relatively large housing wealth effects. The estimated elasticity of total consumption with respect to house values was about .04 whereas that of financial assets was about .02. Further, house values were much more important to non-durable

consumption, whereas financial assets were much more important to durable consumption. Finally, results indicate that households pay more attention to the market values of their portfolios than to their net wealth positions.

These and other issues are explored below. The following section provides a review of relevant literature. The data sources and the data matching algorithm are described in Section III. Section IV presents the statistical results, whereas Section V provides a brief conclusion.

II. Background on Financial and Housing Wealth Effects

While a number of studies have investigated the role of financial wealth or net worth on household consumption, the literature investigating the potentially separate relationship between housing wealth and consumption has grown significantly in recent years. Elliot (1980) conducted an early study on the impact of non-financial and financial wealth on consumption, and concluded that non-financial wealth had no impact on consumption. Since Elliot's work, there have been a number of studies that have investigated the role of housing wealth on consumption. They have primarily used three types of information: aggregate data at the state or national level, micro-data at the household level, and data based on refinance activity. **The literature is summarized in Table 1.**

In addition to the Elliot study, a number of studies have applied aggregate data to investigate the effect of housing wealth on consumption activity. Case, Quigley, and Shiller (2003) use both state level U.S. data and international country level data in their analysis, and find marginal propensities to consume out of financial wealth of .02, but larger marginal propensities to consume out of housing wealth (.05-.09 in the U.S. data, and .11-.17 in the international data). Dvornak and Kohler (2003) apply the same methodology to the Australian economy, and find larger effects for financial wealth (.06-.09), but smaller effects for housing wealth (.03). Benjamin, Chinloy, and Jud (2003) use similar state-level data as Quigley et al (2003) and estimate wealth effects of similar magnitudes (.08 for housing wealth, and .02 for financial wealth). Finally, Case (1992) linked the real estate price boom in the late 1980's in New England

to a substantial increase in consumption for the region.

A number of other studies have used the Panel Study of Income Dynamics (PSID) to investigate the relationship between housing wealth and household consumption spending. Owing to data limitations in the PSID, these studies are constrained to use non-durable or food measures of consumption and the period wealth supplements in the PSID to measure financial and housing wealth. Skinner (1993) found that increases in housing wealth resulted in increased consumption spending by younger households, but not by older households, who tend to be more cautious in spending those gains.⁵ Enghardt (1996) identifies the marginal propensity to consume out of housing wealth to be about .03, but finds the effect is associated only with declines in house values (i.e., house value declines lowered consumption). Lehnert (2003) finds an overall marginal propensity to consume of similar magnitude, but also observed variation in estimated results across the age distribution. He sees the largest effects for the youngest households and for those households on the verge of retirement, who may be downsizing their housing needs. The only other micro-data study that estimates a model including both the housing and financial components of wealth is Levin (1998). Levin use the Retirement History Survey to estimate his models, and found no effect of housing wealth on consumption.

While the literature on the connection between refinancing and consumption has not yet included behavioral models, the facts are compelling nonetheless. Fratantoni et al. (2002) and Canner et al. (2002) use Survey of Consumer Finance data to estimate the magnitudes of housing wealth extraction during the 2001-2002 period. They find that the median household extracted approximately \$20,000 in housing equity, and that 60 % of the extracted wealth went towards new consumption, while the remainder went towards paying off debt. In the Canner et al (2002) analysis, they find that this led to a total of \$67 billion in new consumption spending. Without a behavioral model and lacking nuanced measures of consumption, the studies conclude that it is

⁵ Skinner (1993) also found an asymmetry in effects in that households under 45 who realized declines in housing wealth increased saving by 10 cents per dollar of decline, whereas those than realized gains decreased savings by 0.4 cents per dollar of increase.

difficult to estimate a direct wealth effect. In addition, the amount of equity extracted does not signify a net addition to wealth for households. While households usually refinance when interest rates fall, and falling interest rates associated with the refinancing does increase wealth for those that refinance, a large part of the \$67 billion in new consumption represents new debt.

III. Data and Model

The mixed results cited above may owe to variability across relevant studies in data resources and method. Indeed, research on topics of spending-related wealth effects has suffered due to the lack of a single comprehensive household- or individual-level data source that includes detailed information on household asset holdings and consumption. The main shortcoming of the aggregate data used in some studies is the lack of a clear behavioral link between fluctuations in consumption and wealth. That is, it is not possible to identify whether increases in consumption expenditures are incurred by those households that experienced an increase in wealth. The PSID does not suffer from this problem, in that it is longitudinal and thus able to identify consumption and wealth changes by households and individuals. However, the PSID has limited information on both consumption and wealth and thus does not permit more nuanced analyses that may be of interest to researchers.

In this paper, we construct a more ideal dataset that links detailed individual-level consumption information with similar quality wealth data. We use data drawn from two surveys. The *Consumer Expenditure Survey (CEX)* has since 1980 collected detailed information about U.S. household expenditures.⁶ The CEX consists of two surveys. In the Diary survey, respondents track expenses on frequently purchased items such as food over a two-week period. In the Interview survey, which is conducted quarterly, respondents report on regular expenses, such as monthly bills, and major expenses of large items.

We use information obtained from the CEX's household expense diary entries and quarterly interviews to calculate a household's consumption-related expenses for a calendar year. For our

⁶ The CEX is conducted by the Bureau of Labor Statistics in the U.S. Department of Labor.

purposes, we track total expenses, as well as expenses on nondurable goods, durable goods, and food. Our CEX sample also includes collected demographic information about the households, such as the age, race, and level of education of the household head. Unfortunately, the wealth data in the CEX is somewhat limited in terms of scope and precision, and thus the CEX alone is not sufficient for our purposes.⁷

We therefore turn to a different survey that specializes in household wealth and income, the Federal Reserve Board's *Survey of Consumer Finances (SCF)*. The SCF is a triennial survey of U.S. households that provides highly detailed information on U.S. families' assets and liabilities, use of financial services, income, and housing and demographic characteristics.⁸ This survey provides far more information about a household's balance sheet and financial position than any other survey of households. It thus is an ideal instrument to address our question of how consumption varies with the market value of a household's assets as well as with the net wealth position of those households.

The particular variables of interest are the asset value and net wealth variables. Our analysis includes each household's financial assets, including liquid and semi-liquid assets and longer-term financial assets, the value of the household's home if they own it, and the value of any other real estate the household might own.⁹ We also use SCF information on consumer debt, mortgage debt, and mortgage debt associated with the other real estate in the household's portfolio to calculate the household's net wealth position. The SCF data also include demographic variables such as age, years of education, marital status, and geographic region that are important for the match procedure.

For both the CEX and SCF datasets, we use responses associated with the 1998 surveys. We

⁷ See Dynan and Maki (2001).

⁸ The SCF is sponsored by the Board of Governors of the Federal Reserve System in cooperation with the U.S. Department of the Treasury, and conducted by the Survey Research Center at the University of Michigan. The SCF employs a dual-frame sample design that overlays a standard geographically based random sample with a special sample of relatively wealthy households (Kennickell, 2000).

⁹ Liquid and semi-liquid financial assets as defined by the SCF include all financial assets other than long-term savings instruments, such as pension plans, that cannot be borrowed against.

create our ideal dataset by matching observations across the SCF and CEX. This process is described in the following section.

The Matching Procedure

Because the CEX and SCF do not survey the same households, linking the consumption data in the CEX with the detailed wealth data in the SCF requires a matching algorithm. We use a nonparametric procedure suggested by Goel and Ramalingam (1980) that first partitions both samples into cells based on individual characteristics known to be highly-correlated with variation in consumption, such as age, marital status, and education. For example, if we established 3 age groupings, 2 marital status groups, and 3 education categories, there would be 18 distinct cells that an observation could fall into.¹⁰ As a precaution, the dimensionality of these characteristics was restricted to increase the likelihood that cells were not empty for either sample.

Matching within a cell proceeded as follows. CEX observations were rank ordered by income. SCF observations were likewise ranked by income, with each SCF observation included twice to ensure that each CEX observation had a match. From this “doubled” SCF sample, a random sample was drawn of a size equal to the number of CEX observations. The two sets of rank ordered samples – the CEX sample and the randomly-drawn SCF sample – were then matched one-to-one. That is, the CEX observation with the highest income was matched to the SCF observation with the highest income, the second highest CEX income to the second highest SCF income, and so on.¹¹

This procedure could be quite sensitive to the characteristics used to partition the sample as well as the criteria used for creating the groupings within a characteristic. As a result, we repeat the process using a number of different cell selection rules to establish the robustness of our

¹⁰ In this example, the age groupings might be less than 35, 35 to 54, and older than 60; the marital status groups could be married and unmarried; and the education categories might be at most high school, at most college, and any graduate study.

¹¹ In most cases, this type of matching procedure will be comparable to other more sophisticated statistical matching techniques. For more, see Goel and Ramalingam (1980).

findings.

For this paper, we present the results for the case where the match was established using cell defined along four dimensions:

- Marital status – Married or not;
- Region – East, Central, South, and West;
- Level of schooling – Less than high school, some college, college degree or more; and
- Age – 25-35, 36-50, and 51-65;

We thus partitioned the sample into 72 cells, within which the CEX and SCF observations were matched. The sample was restricted to households whose heads were between 25 and 65 to eliminate issues regarding heterogeneous consumption during college-age years and retirement. The match process yielded a dataset with 2917 observations.

Each observation in the matched sample includes a measure of income from both the SCF and CEX. As a check of the quality of the match procedure, we compared the correlations between the two measures of income and between the income measures and variables that appear exclusively in only one of the surveys (table 2). The correlation between the two income measures is extremely high, which provides an initial hint that the procedure yielded reasonable matches. The correlations between the SCF income variable and the CEX consumption variables are stronger than the within CEX correlations, the rank ordering and their relative magnitudes remains intact, which offers an additional degree of confidence about the match's quality. This relationship is also observed regarding the SCF wealth variables, where the CEX income correlations are weaker than the SCF income correlations. The rank orderings in this case are not as consistent and the relative magnitudes vary more widely, but the significantly positive results are cause for some optimism.

The Empirical Specification

The standard approach in the literature has been to establish a relationship between the market value of assets and consumption, controlling for income. A logarithmic transformation is needed

to linearize consumption, income, and wealth, and so the standard specification has been

$$(1) \log C = f(\log Y, \log V, Z),$$

where C is consumption, Y is income, V is asset value, and Z is a vector of controls.

Using the method of Goodman and Kawai (1982), permanent income is the predicted value of a regression of household income on a set of demographic and human capital characteristics.

Our approach expands the standard methodology in two ways. First, it disaggregates asset value and evaluates the relationship between consumption and the various components of asset value. In the context of the standard methodology, this modifies equation (1), but only slightly, as the components of asset value also need to be linearized using the log transformation:

$$(2) \log C = f(\log Y, \log V_f, \log V_h, \log V_r, Z),$$

where V_f is the value of the individual's financial holdings, V_h is the value of the individual's primary residence, and V_r is the value of the other real estate assets an individual holds.

The second innovation – the introduction of debt considerations – complicates matters a bit more. The existence of negative values, which can arise if debts exceed asset value, means that our more comprehensive characterization of an individual's overall financial position can not be transformed using the log function. Fortunately, the difference of two log-normal variables is normal. Thus, if debts are distributed comparably to asset values, the difference between the asset values and debt is normally distributed and can be estimated untransformed in a standard regression framework.¹² For this portion of the analysis, we therefore estimate

$$(3) \log C = f(\log Y, V_f - D, V_h - M, V_r - M_r, Z)$$

where D represents non-real estate debt, M is the value of the mortgage on the individual's primary residence, and M_r is the total value of mortgages associated with the other real estate assets held by the individual.

¹² We thank Detlof von Winterfeldt for his verifying this point.

IV. Results

Table 3 shows the results of estimating equation 2, our variation on the standard market values approach to tackling the problem, for a sample restricted to homeowners. We restrict the sample so as to include only those households for which a consideration of home equity and other housing-related equity is likely to enter into the decision-making process.

Our results generally conform with those of the earlier literature in that total consumption is observed to be positively related to measures of financial and housing asset values. Moreover, the sensitivity of total consumption to an asset's value is larger for housing than for basic financial holdings. The results suggest the estimation of significant coefficients in both cases; the implied elasticity with respect to total consumption is .02 percent for financial assets, and .04 percent for house values. We also find a behavioral distinction in terms of nondurable consumption and durable consumption. Of our asset value measures, house value is the most significant covariate with nondurable consumption, while the value of financial holdings is found to be most strongly associated with the level of durable good consumption. In addition to greater sensitivity to financial wealth, durable good consumption is much more sensitive to changes in our permanent income measure. The relative importance of housing wealth on non-durable consumption could be due to the fact that increases in house values are thought to be more permanent, and therefore households change their routine non-durable purchasing patterns in response to such changes.

Of the control variables, we observe a monotonic relationship between the level of education and consumption that holds for all types of consumption. In addition, overall consumption is greatest for married households and for middle aged (35-49) households, and durable consumption, in particular, is much larger for these groups. These could reflect the fact that such households are more likely to be entering into homeownership and childbearing, both of which generally involve significant outlays. In support of this, the coefficient on family size was generally positive, and its lack of statistical significance could be due to collinearity among these

variables.

We next present our estimates of equation 3, in which we introduce debt and characterize a household's position in terms of net wealth. Thus, the value of financial assets is computed as net assets, house value becomes home equity, and the value of other real estate becomes other real estate equity. Table 5 shows the results of this exercise for our homeowner-only sample.

The results show that there is very little relationship between consumption and these more comprehensive measures of a household's net wealth position. In only one case—home equity for nondurable consumption—is a statistically significant relationship observed and in nearly all cases the estimated coefficients are quite small. It would appear that homeowners do not consider the debt side of their positions when making consumption decisions, which is an interesting and quite provocative finding.

The results for the entire sample are less extreme (table 6). We observe a significant relationship between consumption and home equity, with the lone exception being for durable consumption. Thus, as with the standard market values approach, housing-related wealth seems to be less of a factor for purchases of durable goods than those of nondurables. In addition, unlike the market value case, when the coefficients on the housing-related variables were much smaller for the entire sample than for the restricted sample, here the coefficients on home equity do not diminish in size.

Robustness Checks

We also conduct the analysis using the entire sample and obtain the same general outcome (table 4). A household's level of wealth is again positively associated with a household's total consumption. Perhaps not surprisingly, the estimated sensitivity of consumption to house values is considerably lower when households that do not own a home are included in the sample. Unlike the case for the homeowner-only sample, the value of financial assets always has the largest impact on consumption, regardless of whether it is for all goods, nondurable goods only, or durable goods only. Finally, various other matching rules led to similar results throughout.

V. Conclusion

This paper sought to evaluate the effects of household financial and housing market wealth on consumption spending. To do so, the analysis assembled a unique micro data set based on matched files from the Survey of Consumer Finances and the Consumer Expenditure Survey. Because we are using more detailed consumption and wealth data, we are able to conduct a more nuanced analysis of the impact of wealth effects on consumption, including the estimation of financial, housing and other real estate asset effects on both durable and non-durable spending. Further, using detailed household debt information contained in the SCF, we are able to test for differences in consumption effects associated with changes in the market value of household assets and in the net asset position of households.

Overall, research findings demonstrated an important role for both financial wealth and housing wealth in the determination of household consumption patterns. The results suggest the estimation of significant coefficients in both cases; the implied elasticity with respect to total consumption is .02 percent for financial assets, and .04 percent for house values. House values were much more important for non-durable and food consumption, and financial assets were much more important for durable consumption.

On the other hand, households appear to pay more attention to the market values of their portfolios than to their net wealth positions. This is most true when estimating the effect of net financial assets, for which there is no effect on consumption. This finding is consistent with people living at their perceived social level, regardless of the debt implications. It is also consistent with the evidence regarding the run-up in consumer debt, and the continued growth in consumption in the recent economic slow-down. At the same time, there is little difference between the estimates using home equity and those using house values. This may imply that for most households a change in house value is equivalent to a change in home equity. This would be true if a significant number of households do not respond to a change in house value by extracting home equity by refinancing or opening additional lines of credit on the home.

This study is an important first step in developing an understanding of how consumption varies with different components of a household's net worth. An important next step will be to extend this research to additional years so as to test whether the financial and housing wealth effects are variant across the business cycle. In addition, future efforts will investigate whether wealth effects differ by racial group, age, and income status, as such knowledge will benefit policy makers in crafting policy that can target groups that may be differentially affected by wealth shocks.

References

- Bostic, R. W. and B. J. Surette (2001), "Have the Doors Opened Wider? Trends in Family Homeownership Rates by Race and Income," Journal of Real Estate Finance and Economics 23 (November), 2001, 411-434.
- Dynan, K. and D. Maki (2001), "Does the Stock Market Wealth Matter for Consumption?", Working Paper, Division of Research and Statistics, Board of Governors of the Federal Reserve System, Washington, D.C,
- Goel, Prem K. and T. Ramalingam. 1980. *The Matching Methodology: Some Statistical Properties*, Lecture Notes in Statistics Series, J. Berger, et al. (Eds.), Number 52, Springer-Verlag: New York.

Table 2. Comparison of correlation coefficients for variables across the surveys

	CEX log(income)	SCF log(income)
CEX log(income)	1.0000***	0.78959***
SCF log(income)	0.78959***	1.00000***
<i>CEX consumption variables</i>		
Total consumption	0.47398***	0.56193***
Nondurable consumption	0.49107***	0.59043***
Durable consumption	0.27025***	0.31126***
Food consumption	0.34097***	0.41399***
<i>SCF wealth variables</i>		
Financial	0.18374***	0.35522***
House value	0.29145***	0.46639***
Other real estate	0.34736***	0.40520***
Total net worth	0.20409***	0.41438***

*** - $p < .001$.

Table 3. Market value regression estimates, homeowners only

Variable	Total consumption	Nondurable consumption	Durable consumption	Food consumption
Intercept	6.88584*** (0.22171)	6.70070*** (0.20737)	3.32668*** (0.50438)	6.21493*** (0.19454)
CEX Log(income)	0.25458*** (0.01961)	0.23538*** (0.01834)	0.42666*** (0.04461)	0.14242*** (0.01721)
Log(fin. assets)	0.02005** (0.00657)	0.01709** (0.00615)	0.04345** (0.01495)	0.01397* (0.00577)
Log(house value)	0.04196** (0.01635)	0.05070*** (0.01529)	0.00771 (0.03719)	0.03358* (0.01434)
Log(oth RE value)	0.00101 (0.00257)	0.00211 (0.00240)	-0.00022753 (0.00584)	0.00215 (0.00225)
LT High school	-0.28314*** (0.06687)	-0.22090*** (0.06254)	-0.68843*** (0.15212)	-0.17745** (0.05867)
College degree	0.03884 (0.03081)	0.03678 (0.02882)	0.13269 (0.07009)	0.03374 (0.02703)
Advanced degree	0.14660*** (0.04219)	0.13824*** (0.03946)	0.17064 (0.09597)	0.04157 (0.03702)
Family size	-0.00004856 (0.01137)	0.00371 (0.01063)	0.00403 (0.02586)	-0.00034672 (0.00998)
Age of 25-35	-0.05877 (0.03557)	-0.03993 (0.03327)	-0.16243* (0.08091)	-0.13016*** (0.03121)
Age of 50-65	-0.13116*** (0.03267)	-0.10567*** (0.03055)	-0.18172* (0.07431)	-0.14754*** (0.02866)
White	0.03021 (0.06914)	0.04080 (0.06467)	0.04525 (0.15730)	0.04700 (0.06067)
Black	0.04026 (0.08601)	0.01391 (0.08045)	0.12629 (0.19567)	0.02752 (0.07547)
East	0.07232 (0.04019)	0.07005 (0.03759)	-0.13686 (0.09143)	0.06358 (0.03527)
South	-0.04980 (0.03398)	-0.03365 (0.03178)	-0.11081 (0.07730)	-0.01703 (0.02981)
West	0.08391* (0.03668)	0.05635 (0.03431)	0.00389 (0.08345)	0.07696* (0.03219)
Divorced	-0.03395 (0.05466)	-0.04335 (0.05113)	-0.16233 (0.12435)	-0.11088* (0.04796)
Married	0.23311*** (0.04483)	0.17368*** (0.04193)	0.58044*** (0.10199)	0.32433*** (0.03934)
Widow	0.00053522 (0.10393)	-0.05981 (0.09722)	0.29669 (0.23645)	-0.11669 (0.09120)
Separated	-0.04221 (0.10339)	0.01610 (0.09671)	-0.15318 (0.23522)	-0.11648 (0.09073)
Observations	2001	2001	2001	2001
R-squared	0.3345	0.3284	0.2230	0.2962
Mean (dep var)	10.53	10.2	8.9	8.5

Note: Standard errors in parentheses. ***-p<.001, **-p<.01, *-p<.05.

Table 4. Market value regression estimates, full sample

Variable	Total consumption	Nondurable consumption	Durable consumption	Food consumption
Intercept	7.65663*** (0.13664)	7.59784*** (0.12644)	2.88921*** (0.38514)	6.73066*** (0.12972)
CEX Log(income)	0.20594*** (0.01324)	0.18778*** (0.01226)	0.42808*** (0.03733)	0.12228*** (0.01257)
Log(fin. assets)	0.02724*** (0.00425)	0.02665*** (0.00393)	0.04837*** (0.01197)	0.01750*** (0.00403)
Log(house value)	0.00513* (0.00237)	0.00426* (0.00220)	0.01352* (0.00669)	0.00116 (0.00225)
Log(oth RE value)	0.00472* (0.002222)	0.00531** (0.00205)	0.00098016 (0.00624)	0.00333 (0.00210)
LT High school	-0.28966*** (0.04888)	-0.24112*** (0.04523)	-0.82983*** (0.13777)	-0.08868 (0.04640)
College degree	0.03594 (0.02425)	0.03576 (0.02244)	0.04046 (0.06836)	0.01671 (0.02302)
Advanced degree	0.17063*** (0.03421)	0.17502*** (0.03166)	0.09783 (0.09643)	0.06592* (0.03248)
Family size	0.00389 (0.00865)	0.00864 (0.00800)	0.01268 (0.02437)	0.00989 (0.00821)
Age of 25-35	-0.02775 (0.02617)	0.00495 (0.02422)	-0.20470** (0.07377)	-0.09925*** (0.02485)
Age of 50-65	-0.11633*** (0.02754)	-0.08169** (0.02548)	-0.19035* (0.07762)	-0.10739*** (0.02614)
White	0.05417 (0.05161)	0.02383 (0.04775)	0.19176 (0.14546)	-0.00278 (0.04899)
Black	0.07593 (0.06072)	0.03988 (0.05618)	0.20302 (0.17113)	0.05564 (0.05764)
East	0.06361* (0.03288)	0.06912* (0.03043)	-0.17604 (0.09268)	0.04979 (0.03121)
South	-0.05258 (0.02804)	-0.04360 (0.02595)	-0.05046 (0.07904)	-0.03094 (0.02662)
West	0.10128*** (0.02918)	0.08632** (0.02700)	0.04040 (0.08226)	0.0919*** (0.02770)
Divorced	0.01570 (0.03770)	-0.01094 (0.03489)	0.08320 (0.10627)	-0.02568 (0.03579)
Married	0.29013*** (0.03243)	0.20494*** (0.03001)	0.78319*** (0.09142)	0.36868*** (0.03079)
Widow	-0.05115 (0.08314)	-0.10699 (0.07693)	0.14819 (0.23434)	-0.16240* (0.07893)
Separated	0.04053 (0.05666)	0.04916 (0.05243)	0.05191 (0.15970)	-0.00443 (0.05379)
Observations	2917	2917	2917	2917
R-squared	.3722	0.3582	0.2445	0.2834
Mean (dep var)	10.4	10.1	8.5	8.4

Note: Standard errors in parentheses. ***-p<.001, **-p<.01, *-p<.05.

Table 5. Net wealth regression estimates, homeowners only

Variable	Total consumption	Nondurable consumption	Durable consumption	Food consumption
Intercept	7.03921*** (0.19181)	6.90367*** (0.17961)	3.09602*** (0.43529)	6.33579*** (0.16811)
CEX Log(income)	0.30192*** (0.01681)	0.28441*** (0.01574)	0.49746*** (0.03814)	0.17907*** (0.01473)
Net assets	-0.00078104 (0.00184)	-0.00106 (0.00172)	0.00098698 (0.00418)	0.00076682 (0.00161)
Home equity	0.03821 (0.02330)	0.04955* (0.02181)	-0.01986 (0.05287)	0.03806 (0.02042)
Other RE equity	0.01711 (0.01102)	0.01463 (0.01032)	0.01718 (0.02500)	0.00292 (0.00966)
LT High school	-0.30976*** (0.06683)	-0.24465*** (0.06258)	-0.73753*** (0.15166)	-0.19631*** (0.05857)
College degree	0.07519* (0.03005)	0.07470** (0.02814)	0.17928** (0.06820)	0.06171* (0.02634)
Advanced degree	0.21081*** (0.04002)	0.20369*** (0.03747)	0.26118** (0.09081)	0.08895* (0.03507)
Family size	-0.00204 (0.01123)	0.00275 (0.01052)	-0.00468 (0.02549)	-0.00131 (0.00985)
Age of 25-35	-0.08977** (0.03509)	-0.07225* (0.03286)	-0.20761** (0.07962)	-0.15485*** (0.03075)
Age of 50-65	-0.10505** (0.03211)	-0.07589* (0.03007)	-0.14591* (0.07288)	-0.12408*** (0.02815)
White	0.03326 (0.06949)	0.04358 (0.06507)	0.05218 (0.15770)	0.04782 (0.06090)
Black	0.02923 (0.08638)	0.00225 (0.08089)	0.11693 (0.19603)	0.01699 (0.07571)
East	0.09571* (0.04011)	0.09496* (0.03755)	-0.11294 (0.09101)	0.07947* (0.03515)
South	-0.05098 (0.03417)	-0.03438 (0.03200)	-0.11266 (0.07754)	-0.01749 (0.02995)
West	0.10171** (0.03630)	0.07746* (0.03400)	0.00790 (0.08239)	0.09033** (0.03182)
Divorced	-0.03110 (0.05468)	-0.03958 (0.05120)	-0.17120 (0.12409)	-0.11082* (0.04792)
Married	0.25300*** (0.04488)	0.19469*** (0.04203)	0.59780*** (0.10185)	0.33752*** (0.03934)
Widow	0.02185 (0.10431)	-0.04029 (0.09768)	0.32153 (0.23672)	-0.10596 (0.09142)
Separated	-0.06408 (0.10367)	-0.00365 (0.09708)	-0.19099 (0.23527)	-0.13148 (0.09086)
Observations	2001	2001	2001	2001
R-squared	0.3277	0.3201	0.2190	0.2907
Mean (dep var)	10.5	10.2	8.9	8.5

Note: Standard errors in parentheses. ***-p<.001, **-p<.01, *-p<.05.

Table 6. Net wealth regression estimates, full sample

Variable	Total consumption	Nondurable consumption	Durable consumption	Food consumption
Intercept	7.41368*** (0.13299)	7.36598*** (0.12313)	2.36319*** (0.37313)	6.61134*** (0.12544)
CEX Log(income)	0.25448*** (0.01172)	0.23449*** (0.01085)	0.52446*** (0.03287)	0.14923*** (0.01105)
Net assets	-0.00053442 (0.00180)	-0.00076571 (0.00166)	0.00095317 (0.00504)	0.00097299 (0.00169)
Home equity	0.05234* (0.02239)	0.06366** (0.02073)	-0.01544 (0.06281)	0.04628* (0.02112)
Other RE equity	0.02154* (0.01012)	0.01880* (0.00937)	0.01400 (0.02840)	0.00580 (0.00955)
LT High school	-0.34247*** (0.04888)	-0.29185*** (0.04525)	-0.92806*** (0.13714)	-0.11978** (0.04610)
College degree	0.06689** (0.02410)	0.06611** (0.02231)	0.09802 (0.06762)	0.03546 (0.02273)
Advanced degree	0.22196*** (0.03365)	0.22406*** (0.03115)	0.20978* (0.09440)	0.09543** (0.03173)
Family size	-0.00165 (0.00868)	0.00297 (0.00803)	0.00554 (0.02434)	0.00607 (0.00818)
Age of 25-35	-0.07634** (0.02541)	-0.04078 (0.02353)	-0.30161*** (0.07129)	-0.12414*** (0.02397)
Age of 50-65	-0.08302** (0.02728)	-0.04908* (0.02526)	-0.12119 (0.07655)	-0.08982*** (0.02573)
White	0.07592 (0.05203)	0.04403 (0.04817)	0.23236 (0.14598)	0.00683 (0.04908)
Black	0.07514 (0.06131)	0.03885 (0.05676)	0.19902 (0.17202)	0.05302 (0.05783)
East	0.07421* (0.03317)	0.07927** (0.03071)	-0.15510 (0.09307)	0.05485 (0.03129)
South	-0.05218 (0.02832)	-0.04288 (0.02622)	-0.05193 (0.07945)	-0.03069 (0.02671)
West	0.10039*** (0.02945)	0.08578** (0.02726)	0.03293 (0.08262)	0.09184*** (0.02777)
Divorced	0.02088 (0.03797)	-0.00688 (0.03515)	0.09966 (0.10652)	-0.02529 (0.03581)
Married	0.33389*** (0.03185)	0.24515*** (0.02949)	0.87311*** (0.08936)	0.38855*** (0.03004)
Widow	-0.01663 (0.08369)	-0.07608 (0.07748)	0.22113 (0.23480)	-0.14678 (0.07893)
Separated	0.01358 (0.05702)	0.02406 (0.05278)	-0.00736 (0.15996)	-0.01939 (0.05378)
Observations	2917	2917	2917	2917
R-squared	0.3602	0.3453	0.2371	0.2791
Mean (dep var)	10.4	10.1	8.5	8.4

Note: Standard errors in parentheses. ***-p<.001, **-p<.01, *-p<.05.