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Price Expectations and Households' Demand for Financial Assets

ABSTRACT: This paper is an attempt to measure the effect of price expectations on the level and distribution of household saving, using both cross-section and time series data. The former are survey data on saving based on households' answers to questions about their anticipations of saving over various time periods. ¶ Two effects of inflation on saving have been suggested. The traditional one is a shift from fixed to variable dollar assets as a way of avoiding the depreciation of purchasing power of fixed dollar assets. It is conceivable that this shift reduces total financial saving. Another effect, suggested by high saving rates in 1966–1969, is that inflation heightens uncertainty, which leads to an increase in saving, at least temporarily, even in fixed dollar assets. ¶ The time series results indicate clearly that increases in the proportion of households expecting inflation lead to increases in total saving, and particularly in the net acquisition of financial assets. Cross-section results were weak and inconclusive, with few statistically significant coefficients on price expectations variables, and those mainly for households of moderate wealth. In these equations there was some indication that expectations of more rapid inflation were associated with heavier investment in financial assets, particularly in common stock.

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[1] INTRODUCTION

With the inflationary excesses that began in 1965 acting as a prime mover, the last few years have witnessed considerable rekindling of interest in the effects of price expectations on economic behavior. For the most part, however, the recent empirical research in this area has focused on aggregate data and has been concerned primarily with the impact of price expectations on market rates of interest[1] and changes in money wages.[2] The effects of price expectations on consumption and saving, on the other hand, has received relatively little attention,[3] especially at the micro level, and this paper is addressed to this void.

More specifically, the primary purpose of this paper is to investigate whether it is possible to discern an empirical relationship between individually held price expectations and decisions of households to hold particular types of assets. To this end, I have analyzed aggregate time series data from the National Income Accounts and the Flow of Funds and two bodies of micro household data, each involving several thousand households and each containing fairly detailed information on price expectations.

The micro data are based on the well-known Consumers Union panel study of the late 1950's and the Consumer Anticipations Survey conducted by the U.S. Bureau of the Census during the late 1960s.[4] The year of reference is 1959 for the CU sample and 1967 for the CAS sample. In addition to reasonably detailed breakdowns of household balance sheets, both of these sets contain data on income and family characteristics together with explicit information on price expectations. Although the price expectations data refer only to the long term, they are especially detailed in the CU sample. Respondents were questioned regarding their expectations of changes in the level of consumer prices for five, ten, and twenty years in the future. CAS respondents, on the other hand, were asked about their expectations only for the following year.

The price expectations data from both household samples have been taken at face value, and there has been no effort either to "explain" the price expectations themselves or to assess, except in a general way, their plausibility or reliability. To do so, though clearly of interest in its own right, is outside the scope of the present task; the hypothesis throughout is that households take seriously the expectations they express, whatever these are and whether or not they appear to be reasonable to an outsider.

The format of the paper is as follows: The next section discusses the effects that price expectations might be expected to have on a household's saving and the composition of its portfolio. Particular attention is given to the traditional view that expectations of inflation lead to a substitution of present consumption for future consumption, and therefore to reduced current saving, and to the contrary view, long espoused by George Katona of the Survey Research Center at the University of Michigan, that expectations of inflation are associated with increased uncertainty about the future, which in turn leads to increased current saving.

Section 3 is concerned with specification of the model to be analyzed. The model utilized is based on an underlying stock adjustment process in which saving (or one of its components) is related to the household's existing stock of assets, as well as to income, various demographic characteristics, and, of course, to price expectations. The stock of assets and income are both disaggregated, although the extent to which this disaggregation can be carried out varies between the data sets. The two micro data sets are described in Section 4.

Sections 5 and 6 present the empirical results, the results from the micro data sets in Section 5 and the time series results in Section 6. Finally, an overall assessment of the results and some suggestions for future research are presented in Section 7.

[2] THEORETICAL CONSIDERATIONS

In analyzing the effect of price expectations on a household's saving, there are two separate questions to be kept in mind: (1) the impact of price expectations on the overall amount saved,[5] and (2) the impact of price expectations on the composition of saving and, through saving and asset price changes, on the composition of the household's balance sheet. The assumption is that the household strives to structure its portfolio so that yields (including nonmonetary returns and with allowance for risk) on different assets are equal on the margin. The rational household, then, will rearrange its portfolio whenever there is a change in its price expectations, because yields are, in general, not affected uniformly by inflation. Indeed, it is quite possible that a household will restructure its portfolio substantially even though the impact of inflation on the overall level of saving is nil. Moreover, we also should expect the impact of price expectations to vary, even for the same dependent variable, depending on the time period over which the expectations are measured and, for short time periods, depending on whether price changes are expected to be permanent or only temporary. If prices are expected to rise and soon thereafter to fall, current saving should be stimulated, whereas the opposite should be the case if the higher prices are expected to persist.

The existing literature on the effects of price expectations on saving —which is surprisingly not very extensive—is ambiguous and, in some instances, contradictory. An old and traditional idea is that anticipated inflation will induce a shift from money, savings accounts, and bonds to real assets, including equity. The likely effect on the overall amount saved, however, is much less clearcut. Economists typically take the view that an expected price rise will lead to increased consumption, and thus to reduced saving, as present goods are substituted for future goods, although the assumption usually implicit is that the expected price rise had not been previously anticipated. For price inflation that is fully anticipated should not have any impact on real economic decisions, because all impacts will have been fully discounted and embodied in current prices, interest rates, etc.

Differing from this traditional view is one that is rooted more in psychology and sociology than in economics, but which is increasingly gaining a following among economists, the view that an increase in prices (anticipated or not) will lead to a reduction in spending and an increase in (financial) saving.[6] The argument is usually phrased in terms of the impact on rising prices on consumer confidence: Expected inflation leads to a decrease in the confidence with which the future is approached, which in turn leads to an increase in saving.[7] Because it has a strong theoretical foundation[8] in addition to being well established empirically,[9] the second part of the K-J argument (i.e., that saving is negatively related to uncertainty about the future) evokes little controversy.

However, the circumstances surrounding the survey-based finding that rising prices stir pessimism are much less clear. Juster and Wachtel (1972a) suggest that the connection is to consumer expectations of future real income. In particular, they argue (pp. 86–87):

> Historically, high inflation rates tend to be associated with a relatively high variance in the rate of inflation. If consumers commonly believe that the rate of increase in nominal income will be less variable than the rate of increase in prices, the expectation of rising prices will generate greater dispersion of expectations about real income. A wider dispersion may not have symmetrical effects on behavior, in that the prospect of declining real income may carry more weight on consumer decisions than the prospect of rising real income, even though the two are regarded as equally probable. In short, consumers may be much more concerned that price inflation will erode their real income than pleased that rising nominal incomes will outweigh rising prices. If so, the appropriate reaction to inflationary expectations would be to curtail spending in an attempt to guard against declining real income, thus, as a corollary, raising the saving rate.

Despite surface appearances, the traditional and K-J views of expected inflation and saving are not necessarily in conflict. For once uncertainty (especially with regard to the stream of future income) is admitted into the traditional model, the K-J positive relationship between saving and expected inflation emerges almost as a matter of course. Readers interested in details are referred to the papers cited in Footnote 8.

In approaching the analysis, a reasonable attitude to adopt is that price expectations are actually described by a probability distribution and that the information a household provides is its "best" guess of what prices will do during the period of reference.[10] Moreover, it also is plausible to assume that the extent to which price expectations actually influence a household's decisions will depend on the confidence with which the expectations are held. In particular, it is much more likely that expectations will be a factor in decisions if they are held with a great deal of confidence rather than with little confidence.

To formalize this reasoning, let us suppose that the household bases its saving decisions on an assumed price level p^*, which it defines as a weighted average of its best-guess future price level p^e and the current price level p, viz:

$$(1)\quad p^* = g(\sigma^2)p^e + [1 - g(\sigma^2)]p$$

where g is an inverse function of σ^2, the variance of the distribution describing the expectations. In particular, we shall assume $0 < g(\sigma^2) < 1$ with $g'(\sigma^2) < 0$, $g(0) = 1$, and $g(\infty) = 0$. Thus p^* will be close to the value of p^e for σ^2 small, but close to the value of p for σ^2 large.[11] Implementation of this model requires, of course, knowledge of σ^2. Although neither of the micro data sets to be analyzed provides information about σ^2 directly, some weak, though usable, information can be adduced in both samples.[12]

As was mentioned at the beginning of this section, we should expect the impact of price expectations to be different depending on the length of the period over which the expectations are measured and whether price increases are expected to be permanent or temporary. The traditional view—i.e., that expected inflation leads to a movement away from money and fixed dollar assets—seems most relevant to long periods and to price changes that are expected to be permanent, whereas the K-J view seems more relevant to short-run expectations and to price changes that are expected to be temporary. As has already been mentioned, the price expectations in the CU sample pertain to periods of five, ten, and twenty years, whereas in the CAS sample they are confined to twelve months. (The time series expectations also refer to a period of twelve months.) This being the case, it is tempting to view the results with the CU sample as testing the traditional thesis and the results with the CAS sample as testing the K-J thesis.

[3] A STATE ADJUSTMENT MODEL OF SAVING

The point of departure for the model that underlies the empirical analysis is to assume that saving is determined by the interaction of the tastes of the household, a collection of objective quantities (such as income, prices, and the rate of interest) generated by the market, and a set of state variables to be described below.[13] In symbols, we can write

(2) $s = \theta(x_1, \ldots x_m, w_1, \ldots, w_n)$

where s denotes saving, $x_1, \ldots, x_m$ are m objective market quantities, and $w_1, \ldots, w_n$ are n state variables. It is assumed for now that the tastes of the household are reflected in the parameters of θ.

The state variables encompass a variety of phenomena, some objective and some subjective. The former will include items from the household's balance sheet—stocks of durable goods and housing, saving accounts, level of consumer debt, etc.[14] These quantities are all concrete in interpretation, cardinally measurable (at least in principle), and in general are determined by saving decisions in the past, current market conditions, and possibly the mere passage of time. The subjective state variables, on the other hand, will also reflect past decisions but in addition will collate the household's evaluation of the future as characterized (say) in expectations of income and prices and the confidence with which the future is approached. The past makes its appearance in these state variables in the form of inertia (or habit formation), which, as is well-known, characterize important segments of consumption, particularly expenditures on services.[15]

The objective state variables will change:

1. In response to current saving as assets are bought and sold and liabilities increase or decrease;
2. With the passage of time through depreciation and technological obsolescence; and
3. In response to inflation, changes in the market rate of interest, and changes in the earning capacity of physical assets.

In contrast, the subjective state variables that reflect habit formation will alter in response to:

1. Current consumption of nondurables and services;
2. Current depreciation of physical assets; and
3. The dissipation of habits.

How the remaining subjective state variables (i.e., those representing the household's evaluation of the future) vary through time, however, is clearly much more speculative.

The objective state variables and the subjective state variables that do not incorporate expectations summarize the influence of the past and of the objective present on the household's saving decisions, whereas the state variables reflecting expectations provide links to the future. The household is assumed to adjust its saving in such a way as to bring its state variables, all except those reflecting expectations,[16] into desired relationships with its current and prospective income. As yields and expectations change, the household will not only adjust the amount it saves, but also will alter the composition of its portfolio.

In order to illustrate the ideas involved, let us consider a model in which saving (s) is linearly related to the existing level of wealth (w), a state variable representing the accumulated effects of past expenditure (h), income (x), the rate of interest (r), income expectations (x^e), price expectations (p^*), and general consumer confidence (q).

$$(3) \quad s = \alpha + \beta_1 w + \beta_2 h + \gamma_1 x + \gamma_2 r + \lambda_1 x^e + \lambda_2 p^* + \lambda_3 q$$

In terms of our earlier classification of variables, x and r represent objective market quantites, w represents an objective state variable, and h, x^e, p^*, and q denote subjective state variables. The state variables w and h represent legacies from past saving and consumption decisions, respectively, whereas, x^e, p^*, and q embody subjective evaluations of the future. (It is assumed, of course, that x^e, p^*, and q pertain to some definite time period.) We naturally expect β_1 to be negative and γ_1 and λ_1 to be positive. The parameters γ_2 and λ_3 can be of either sign, and, as we have already pointed out, the same is true of λ_2, depending on (1) the length of the horizon, (2) whether price changes are expected to be permanent or temporary, and (3) the relationship between p^* and q.[17] Finally, because consumption, on balance, is subject to habit formation[18] and because saving is the complement of consumption, we expect β_2 to be negative.

Assume, next, that at any point in time w and s change according to

$$(4) \quad \dot{w} = s - \delta_1 w_d$$

$$(5) \quad \dot{h} = c - \delta_2 h$$

where w_d represents the portion of w subject to depreciation, c denotes consumption ($=x - s$), and δ_1 and δ_2 represent the (constant exponential) depreciation rates for w_d and h, respectively. The determinants of the rates of change for x^e and q are of little interest for present purposes. Finally, in line with the preceding section, p^* will be assumed to be determined according to

$$(6) \quad p^* = g(\sigma^2)p^e + [1 - g(\sigma^2)]p$$

where p^e, p, g, and σ^2 are as defined in Equation 1.

Long-run equilibrium in this model, corresponding to steady state values of x, r, x^e, p^*, and q, is defined by the conditions $\dot{w} = s = 0$. In long-run equilibrium, the state variables w and s will be in desired relationships with income, and s and c, from expressions 4 and 5, will be given by

$$(7) \quad \hat{s} = \delta^1\hat{w}_d$$

$$(8) \quad \hat{c} = \delta_2\hat{h}$$

where the carets denote long-run equilibrium values. Expectations affect the steady state values of saving and consumption only through their effects on the equilibrium relationships of w_d and s to income. Changes in expectations cause these equilibrium relationships to alter, and this in turn leads to changes in saving. This result is of some importance, because it means that the effects of *changes in expectations* are in fact reflected in the *levels of expectations taken in conjunction with the levels of the state variables w_d and h.*

Let us now turn to the model that has been estimated in the empirical work. In general form, this model can be written as

$$(9) \quad S = \alpha + \beta'Y + \gamma'A + \lambda'E + \xi'D + \epsilon$$

where S denotes saving (or one of its components), Y, A, and E are vectors representing income from different sources (or from prior years); components of the household's balance sheet, and expectations, respectively; D is a vector of demographic characteristics, ϵ is a random error term, and α, β, γ, λ, and ξ are parameters (or vectors of parameters) to be estimated.

The major difference between this model and the one represented in Expression 3 involves the disaggregation of wealth and income. The disaggregation of wealth follows from the desire to analyze adjustments in the composition of the household's balance sheet as well as saving in toto, whereas the disaggregation of income is inspired by the findings reported in Taylor (1971). However, the extent to which these disaggregations can be effected varies with the data set. For the CAS sample, income is reported by type—wages and salaries, business income, rent, interest and dividends, gifts and inheritance, social security, and pensions—and for households with more than one member in the labor force, there is a further disaggregation of wages and salaries by recipient. The CU sample does not break down income by type but does distinguish between the earnings of husband and wife, and unlike the CAS sample, it includes data on family income, both before and after taxes, for several years prior to the year of reference.[19] Capital gains also are treated separately. The CU sample contains very detailed information on the composition of the household's balance sheet, particularly with regard to holdings of financial assets. The CAS sample, on the other hand, is much less detailed and complete in this respect and, apart from housing, provides only indirect information on stocks of real assets.

Moving on to price expectations, respondents in both the CU and CAS samples were presented with intervals of price changes and asked to indicate the one within which their expectations fell, unless they were too uncertain even to guess, in which case the question went unanswered. Because they were obtained only in terms of intervals, the price expectations have been included in the models for both data sets through a set of dummy variables.[20] Introducing the price expectations data into the model in this manner makes it unnecessary to assume explicit and essentially arbitrary values for the open-ended classes; an added benefit is that it automatically allows for possible nonlinearity in the effect of price expectations.[21]

Since neither of the micro data sets contains direct information[22] on the variance of a household's price expectations, it has not been possible to employ the mechanism for p^* specified in Expression 6. However, in addition to being asked about price expectations, respondents in the CU survey also were invited to assess their financial prospects "over the next few years." A possible response to this question was "too uncertain to say." Not unreasonably, it might be argued that uncertainty regarding price expectations share some common causes (whatever these are), so that the answer "too uncertain to say" about financial prospects provides some indirect information on the variance of the household's price expectations. This information has been introduced into the model for the CU sample by defining a dummy variable,[23]

$$d = \begin{cases} 1 & \text{if (regarding its financial prospects, the household was) too uncertain to say} \\ 0 & \text{otherwise} \end{cases}$$

which was then incorporated into the coefficient on price expectations (λ^*, say) according to

$$(10) \quad \lambda^* = \lambda_0^* + \lambda_1^* d.$$

In line with the reasoning leading to Expression 6, the sign of λ_1^* should be opposite that of λ_0^*.

For the two micro data sets, the demographic characteristics in D are all represented by dummy variables, which is tantamount to assuming that demographic factors affect intercepts, but not slopes. Although these factors—age, education, and family size, in particular—are frequently interesting in their own right, their inclusion in the present context is primarily for purposes of control.[24]

[4] DESCRIPTION OF THE MICRO DATA SETS

A. CAS sample

The Consumer Anticipations Survey is a relatively recent panel survey of some 3,300 middle-to-high-income households that was conducted by the U.S. Bureau of the Census in collaboration with the National Bureau of Economic Research.[25] The first of the five waves of interviews that comprise the survey was begun in mid-May 1968 and reinterviews were held in November 1968, May 1969, November 1969, and October 1970. The survey is a nonrandom chunk sample and was conducted in three cities: Boston, Minneapolis, and San Jose, California. The census tracts within which the households in the survey reside are all middle-to-high rent, which means that households as a group are in the upper halves of the distributions of income, wealth, and education. The sample is thus especially appropriate for the analysis of saving.

My intent at the outset was to use all five waves of interviews. However, the second, fourth, and fifth interviews were not so extensive as the first and third, especially with regard to the receipt of income, and, as I was particularly interested in employing a model in which income is disaggregated as to source, I reluctantly decided to base the analysis on the first interview alone.[26]

The period of reference for the dependent variables is the calendar year 1967. Stocks of assets refer to the beginning of the period, as measured at the end of 1966.[27] For some categories of assets, households were provided a list of dollar intervals and asked to indicate the interval within which their situations fell. In these cases, geometric means of interval end points were used for point estimates. With respect to the period of reference, a serious problem (unfortunately) involves the data for price expectations, for the period of reference for these is the twelve months beginning in May (June in some cases) 1968. This being the case, it has been necessary to assume that the price expectations for this period stand as a good proxy for those held a year earlier.

The particular data set that is utilized contains 2,876 households, all consisting of a married couple residing in an urban area (no farm families are included). Equations have been estimated for the sample as a whole and with the 2,876 households grouped into three asset categories as follows:

Group	Assets	Households
1	under $25,000	1,537
2	$25,000–$75,000	1,072
3	over $75,000	206

Since data on household net worth are not available for this sample, the grouping has been based on a total of assets defined as the sum of savings accounts, government bonds, the market value of housing (including vacation homes) less mortgage debt outstanding, and the market value of common stock.[28]

The price expectations of the households in the CAS sample are broken down as follows:

TABLE 1 Distribution of Price Expectations, One-Year Horizon, CAS Sample

	Proportion of Households			
Prices Expected:	Entire Sample	Asset Class 1	Asset Class 2	Asset Class 3
To increase less than 2%	0.084	0.086	0.078	0.107
To increase 2-4%	0.451	0.449	0.461	0.403
To increase 5–10%	0.226	0.221	0.232	0.238
To increase more than 10%	0.101	0.101	0.096	0.112
Too uncertain to say	0.138	0.143	0.133	0.140

The "typical" household expected, correctly as it turned out, rates of inflation approximating 2–4 per cent per year. However, a fair proportion of the households, 14 per cent, was unprepared to express any expectations at all. It also is particularly interesting that the distribution of expectations is virtually invariant across asset classes.

B. Consumers Union Sample

Like the CAS sample, the CU sample is nonrandom and is based on the extensive survey of some 15,000 of its members by the Consumers Union in the late 1950s.[29] The particular data set analyzed here contains 4,227 households, all residing in an urban area, with both husband and wife present. Since members of Consumers Union tend to be above average with respect to income, wealth, and education, the households included in this data set are similar to those in the CAS data set.

The period of reference for the dependent variables in this data set is the calendar year 1959. All stocks, both real and financial, are measured at the end of 1958. As with the CAS sample, equations have been estimated for the sample as a whole and with the households grouped according to three asset classes. The grouping is on the basis of the household's net worth at the end of 1959 as follows:

Group	Net Worth	Households
1	under $25,000	2,074
2	$25,000–$75,000	1,614
3	over $75,000	539

As with the CAS sample, it is useful to provide for the CU sample as well a breakdown of price expectations across households. This is done for five-year expectations in Table 2.

TABLE 2 Distribution of Price Expectations, Five-Year Horizon, CU Sample

	Proportion of Households			
Prices Expected:	Entire Sample	Asset Class 1	Asset Class 2	Asset Class 3
To fall	0.023	0.021	0.025	0.028
To remain the same	0.041	0.370	0.336	0.334
To increase less than 5%	0.311			
To increase 5–10%	0.385	0.500	0.536	0.525
To increase 10–15%	0.130			
To increase 15–25%	0.049	0.059	0.058	0.069
To increase 25–40%	0.010			
To increase more than 40%	0.001	0.001	0.001	0.002
Too uncertain to say	0.050	0.039	0.044	0.042

As with the CAS sample, the "typical" household had expectations that correctly anticipated the inflation that actually occurred over the period involved.[30] Moreover, we again find the distribution of price expectations to be largely the same across wealth classes.

[5] EMPIRICAL RESULTS I: CAS AND CU DATA SETS

Equations have been estimated for the following categories of household saving and investment:

CAS data set

1. ΔSA: additions to savings accounts
2. ΔGB: net purchases of government bonds
3. ΔCS: net purchases of common stock
4. IP: investment in real property

5. $S1$: $\Delta SA + \Delta GB$
6. $S2$: $\Delta SA + \Delta GB + \Delta CS$
7. $S3$: $\Delta SA + \Delta GB + \Delta CS + IP$

CU data set

1. ΔDD: additions to demand deposits
2. ΔSA: additions to savings accounts
3. ΔFA: net purchases of financial assets
4. ΔNW: change in net worth.

Because of the large number of predictors in the equations, the majority of which are dummy variables representing demographic characteristics, the equations are tabulated in full in Appendix A and only the coefficients for the price expectations variables are presented here in the text.

Let me begin with the predictors other than price expectations. However, to comment in detail on the importance of these other variables would inject a detracting digression, and I shall simply list their main features:[31]

1. The strongest variables statistically are almost invariably existing holdings of assets, savings accounts, and government bonds in the CAS equations[32] and various categories of financial assets in the CU equations. The effect of existing assets on household investment, especially financial investment, is for the most part strongly negative, thus indicating the presence of substantial stock adjustment, which, of course, is hardly surprising.
2. Income also is usually a strong predictor, especially in the CAS equations wherein family income is disaggregated as to type and wage and salary income is further disaggregated according to recipient. Realized capital gains show up fairly strongly in the equations for both data sets, as do unrealized capital gains on real estate in the CAS equations. In particular, the latter appear to substitute quite strongly for other forms of saving.
3. Of the demographic factors analyzed, family size shows up strongly in the CAS equations and age of head of household in the CU equations. Education is of some importance in the CU equations, but its contribution is relatively minor in the CAS equations. Finally, for neither data set is occupation of much consequence.

The coefficients for the price expectations variables for the CAS equations are tabulated in tables 3 and 4. The coefficients in Table 3 are from the equations estimated from the entire sample of 2,876 households, whereas the coefficients in Table 4 are from the equations estimated for each of three asset classes, the asset classes being those defined near the end of Section 4.

TABLE 3 Coefficients for Price Expectations Variables, CAS Data Set*

Dependent Variable	*PE1*	*PE3*	*PE4*	*PE5*
ΔSA	348.63	98.66	336.62	36.42
ΔGB	14.42	13.89	43.83	13.76
ΔCS	−494.18	75.07	234.66	−107.97
IP	−311.14	−300.83	−181.52	261.32
S1	366.26	69.71	262.70	12.92
S2	−133.19	133.95	490.66	−102.07
S3	413.68	−144.48	355.31	259.96

Definitions of variables:

SA:	holdings of savings accounts
GB:	holdings of government bonds
ΔCS:	net purchases of common stock
IP:	investment in real property
S1:	$\Delta SA + \Delta GB$
S2:	$\Delta SA + \Delta GB + \Delta CS$
S3:	$\Delta SA + \Delta GB + \Delta CS + IP$
PE1:	prices expected to change ≤ 2%
PE2:	prices expected to change 2–4%
PE3:	prices expected to change 5–9%
PE4:	prices expected to change ≥ 10%
PE5:	too uncertain to say

*Numbers in the table represent deviations from the coefficient for *PE2*.

Since price expectations are represented in the equations as dummy variables, the coefficients of these variables, as noted in Footnote 21, can only be estimated in terms of deviations from one another. The equations have been estimated with *PE5*, too uncertain to guess, as the excluded category, but the coefficients in tables 3 and 4 are expressed as deviations from the coefficient of *PE2*.[33] This makes the results easier to interpret since the expectations of the households in this category (inflation of 2–4 per cent) were in fact realized.

The results in Table 3 present a mixed picture. On the one hand:

1. The coefficients for *PE1*, *PE3*, and *PE4* in the equation for ΔCS —being negative, positive, and positive, respectively, and increasing in magnitude—imply that higher expected inflation leads to increased investment in common stock, which is in keeping with the traditional notion that common stock is a good hedge against inflation.
2. The coefficients for *PE5*, being positive in the equations for *SA*, *GB*, *IP*, *S1*, and *S3*, are consistent with the Katona-Juster view that lack of confidence in the future leads households to increase saving.[34]

TABLE 4 Coefficients for Price Expectations Variables, CAS Data Set* (households grouped by asset class)

Dependent Variable	Asset Class	*PE*1	*PE*3	*PE*4	*PE*5
	1	−77.00	28.73	−38.73	51.46
Δ*SA*	2	550.06	264.69	320.65	−321.82
	3	1754.31	327.38	1505.62	1113.65
	1	5.36	3.49	40.10	5.86
Δ*GB*	2	−25.57	−31.90	−48.42	−40.77
	3	136.86	88.64	−63.65	437.50
	1	−105.41	−35.84	−24.81	−37.38
Δ*CS*	2	−631.67	142.00	1008.05	−283.69
	3	4205.31	1221.02	−1896.17	−3089.25
	1	−19.41	−363.96	271.92	−95.08
IP	2	103.93	81.14	−140.50	−166.99
	3	−6917.61	−2095.08	−3434.69	2581.90
	1	186.35	32.23	−70.63	57.34
*S*1	2	524.36	232.77	272.33	−362.58
	3	1890.11	415.92	1660.27	1551.09
	1	−177.08	−3.61	−95.43	20.96
*S*2	2	−107.31	375.01	1280.39	−646.27
	3	−2314.21	1637.00	−454.27	−1538.16
	1	−196.48	−367.57	176.49	−75.11
*S*3	2	−3.37	356.15	1139.89	−813.26
	3	9231.82	−458.15	−3888.95	1043.74

*Numbers in the table represent deviations from the coefficient for *PE*2. Variables are as defined in Table 1.

On the other hand, it seems implausible that the coefficients for *PE*1, *PE*3, and *PE*4, all taken as derivations from *PE*2, ever will have the same sign, since this implies a marked and unusual nonlinearity in the effect of price expectations. However, this is the case in the equations for *SA*, *GB*, *IP*, *S*1, and *S*3.

The central message of the results in Table 4, in which the CAS households are grouped according to wealth, is that the effects of price expectations are not uniform with respect to wealth. For there are substantial differences, not only in magnitude, but also in sign, in the coefficients for each component of investment across the three wealth classes.[35] Moreover, even within wealth classes, grouping does not clarify the results very much, if at all. There remain many instances in which *PE*1, *PE*3, and *PE*4 all have the same sign, and the sign of *PE*5 now varies with the level of wealth. Indeed, the view that uncertainty of the future and saving are positively related receives unequivocal support only in the equations for households with assets in excess of $75,000.

As mentioned in Footnote 21, the significance of the price expectations dummy variables (taken as a group) can be tested through an analysis of covariance. Equations are estimated with the dummy variables excluded and with them included. An F test is then performed on the resulting reduction in the unexplained sum of squares. The results from this test for the seven CAS equations, with households grouped according to wealth, are presented in Table 5. The numbers in this table are the F ratios for testing the hypothesis that the coefficients of the price expectations dummy variables listed in Table 4 are significantly different from zero as a group.

The only equations with F ratios significant at the 0.05 level are for ΔCS and $S2$ for households having assets between $25,000 and $75,000. Price expectations are totally devoid of consequence for households having assets under $25,000 (not one equation for these households has an F ratio exceeding 1) and are only mildly important for households with assets in excess of $75,000 (the F ratio for IP for these households is significant at the 0.10 level). For reasons that I will go into in the concluding section, I find none of these results especially implausible. Indeed, the significant F ratio in the equation for ΔCS strikes me as quite an encouraging result.[36]

Let us now turn to the CU data set. The results for this sample are tabulated in the same way as for the CAS sample in that the coefficients for only the price expectations variables are given here in the text and results are presented for households grouped according to net worth as well as for the entire sample. The relevant tables are tables 6 and 7 and tables A-3 and A-4. Tables 6 and 7 follow tables 3 and 4, whereas tables A-3 and A-4 contain the estimated equations in full and thus parallel tables A-1 and A-2.

As already mentioned, the most important conceptual difference (with regard to the price expectations data) between the CU and CAS samples is that, whereas price expectations in the CAS sample refer to a single period of twelve months, the data in this sample refer to multiple periods of five,

TABLE 5 F Ratios Associated with Test of Hypothesis that Price Expectations Are a Significant Predictor in CAS Equations

Asset Class	Equation						
	ΔSA	ΔGB	ΔCS	IP	$S1$	$S2$	$S3$
Under $25,000	0.25	0.95	0.38	0.65	0.09	0.28	0.48
$25,000–$75,000	1.50	0.68	2.73*	0.10	1.42	2.91*	1.78
Over $75,000	0.66	0.72	1.24	2.00	0.73	0.56	1.40

NOTES: 1. Equation headings are as defined in Table 3.
2. An asterisk denotes significance at 0.05.
3. Degrees of freedom associated with the tests are (4, 1,479), (4, 1,013), and (4, 150), respectively.

TABLE 6 Coefficients on Price Expectations Variables, CU Data Set*

	ΔDD	ΔSA	ΔFA	ΔNW
PE1	193.73	455.78	455.78	3494.81
PE2	−101.13	−342.21	−757.76	−238.92
PE3	7.66	41.47	−504.96	−679.24
PE5	15.61	−142.34	207.10	−392.73
PE6	−32.78	1110.15	2221.61	1294.76
PE7	−199.08	−4.90	34.78	71.41
PE8	−76.08	3445.91	1110.04	374.19
PE9	−7.17	137.59	−472.24	715.74
PEL1	136.42	263.61	−919.80	136.72
PEL3	140.41	−651.80	−2146.58	−255.09
PEL4	380.77	−3132.75	−3450.78	−454.64
PEL5	175.15	244.25	−1104.78	−317.19
PELR1	−54.04	−112.85	655.69	1459.43
PELR3	116.24	738.43	−218.87	2618.02
PELR4	−77.26	−93.18	272.18	766.82

NOTES:
DD: demand deposits
SA: savings accounts
FA: holdings of financial assets
NW: net worth
PE1: consumer prices over next 5 years expected to fall
PE2: consumer prices over next 5 years expected to remain the same
PE3: consumer prices over next 5 years expected to increase slightly
PE4: consumer prices over next 5 years expected to increase 5 to 10%
PE5: consumer prices over next 5 years expected to increase 10 to 15%
PE6: consumer prices over next 5 years expected to increase 15 to 25%
PE7: consumer prices over next 5 years expected to increase 25 to 40%
PE8: consumer prices over next 5 years expected to increase more than 40%
PE9: too uncertain to say
PEL1: consumer prices over next 10 years expected to increase 0 to 25%
PEL2: consumer prices over next 10 years expected to increase 25 to 40%
PEL3: consumer prices over next 10 years expected to increase 40 to 100%
PEL4: consumer prices over next 10 years expected to increase more than 100%
PEL5: too uncertain to say
PELR1: consumer prices over next 20 years expected to increase 0 to 40%
PELR2: consumer prices over next 20 years expected to increase 40 to 100%
PELR3: consumer prices over next 20 years expected to increase more than 100%
PELR4: too uncertain to say

*Numbers in the table represent deviations from the coefficients of *PE4*, *PEL2*, and *PELR2*, respectively.

ten, and twenty years. However, equations utilizing the data for all three periods simultaneously have been estimated only for the entire sample; only data for the five-year period are used in the equations with the households grouped according to wealth.[37] Like the CAS equations, the CU equations have been estimated with "too uncertain to guess" as the excluded price expectations category, but the coefficients in tables 6 and 7 are expressed as deviations from the coefficient of the category that contains the modal expectations. Thus, in Table 6, the numbers listed represent deviations from the coefficients of *PE4*, *PEL2*, and *PELR2* for the

TABLE 7 Coefficients on Price Expectations Variables, CU Data Set (household grouped by asset class)

Variable	ΔDD Asset Class 1	2	3	ΔSA Asset Class 1	2	3	ΔFA Asset Class 1	2	3	ΔNW Asset Class 1	2	3
*PE*1	52.40	−136.68	637.97	479.85	−158.54	2470.46	106.80	−684.58	3760.98	673.00	−1098.72	16,818
*PEF*1	−411.69	1867.68	419.08	−948.39	−77.44	−1501.40	−216.49	−2109.78	31,548	−1149.28	3379.47	−36,213
*PE*10	−17.09	−24.69	59.96	53.94	−32.61	−30.84	116.54	404.03	−5114.04	240.85	621.41	−7737.38
*PEF*10	−158.62	472.40	−186.13	−213.04	726.83	−2489.03	228.60	390.12	560.00	−2780.50	−762.01	20,494
*PE*12	−19.48	−81.21	−115.59	80.13	63.61	5664.80	70.35	176.17	12,110	412.28	880.15	4080.96
*PE*13	−28.89	128.92	−1.47	78.77	677.08	−314.25	−233.85	−375.59	−3304.51	−589.32	784.19	1495.44
*PEF*13	−258.18	83.31	−27.88	20.32	−447.67	−2910.98	134.83	−1471.24	12,936	−1478.51	−374.30	10,935
*PE*8	−188.01	31.95	−454.50	2900.98	−91.28	3057.22	568.40	−728.49	−10,326	−4553.40	−2596.32	21,257

NOTES:
PE 1: consumer prices in next five years expected to fall
*PE*10: consumer prices in next five years expected to remain the same or increase slightly
*PE*11: consumer prices in next five years expected to increase 5–15%
*PE*12: consumer prices in next five years expected to increase 15–40%
*PE*13: too uncertain to say

*PEF*1 = *PE*1 · *U*
*PEF*10 = *PE*2 · *U*
*PEF*11 = *PE*3 · *U*
*PEF*12 = *PE*4 · *U*
*PEF*13 = *PE*5 · *U*

$U = \begin{cases} 1 \text{ if household too uncertain to comment on financial prospects over next few years} \\ 0 \text{ otherwise} \end{cases}$

five-, ten-, and twenty-year periods, respectively, whereas in Table 7 they represent deviations from *PE*11 and *PEF*11.

Once again, the results present a very mixed picture. Indeed, the results in Table 6 for the sample as a whole present very little that is positive. For the five-year expectations, the signs and magnitudes of the coefficients for *PE*1–*PE*9 imply price expectation effects that are sufficiently nonlinear to defy any plausible interpretation. The situation is somewhat better for the ten-year expectations (cf. the coefficients for *PEL*1, *PEL*3, *PEL*4, and *PEL*5 in the equation for ΔNW, which decrease in magnitude with signs, +, −, −, and −), and best for the twenty-year expectations, where *PELR*1 and *PELR*3 have opposite signs in all equations except the one for additions to net worth. The signs of the coefficients for *PE*1 are positive for all four equations, implying that households expecting prices to fall save more than those households expecting inflation of 1–2 per cent per year. This is consistent with the traditional view discussed in Section 2. Finally, with regard to the category "too uncertain to guess" (*PE*9, *PEL*5, and *PELR*4 for the five-, ten-, and twenty-year periods, respectively), the coefficients are of both signs, and there is no particular pattern one way or another.

The poor results for the sample as a whole may reflect in part a breakdown of expectations into too many subintervals, so in the equations with households grouped according to wealth, the number of price expectations categories (five-year period) has been reduced to four. However, as Table 7 shows, neither this procedure, the elimination of the ten- and twenty-year expectations, nor grouping households according to net worth leads to any marked clarification in the results. From a comparison of coefficients across wealth classes in Table 7 (see also Table A-4), it is clear that we once again have strong prima facie evidence of nonhomogeneity of structure with respect to wealth. And as with the CAS sample, the substantial variation in standard errors of the estimate, at the bottom of Table A-4, suggests that nonhomogeneity also extends to error variances.

The variables *PEF*1, *PEF*10, *PEF*12, and *PEF*13 in Table 7 are interaction dummy variables defined as the product of the dummy variables for price expectations, with a dummy variable denoting whether a household was too uncertain to guess about its financial prospects over the next several years.[38] As discussed in Section 4, this represents an attempt to make the coefficients for the price expectations variables a function of the uncertainty with which the expectations are held. To be consistent with the hypothesis that motivates this procedure,[39] the coefficients of *PEi* and *PEFi* (i = 1, 10, 12) must have opposite signs. Of the forty-eight pairs of *PEi* and *PEFi* in the table, twenty-seven meet this requirement, but twenty-one do not; the hypothesis thus receives only mild support.

[6] EMPIRICAL RESULTS II: EVIDENCE FROM THE QUARTERLY FLOW-OF-FUNDS

In this section, we turn our attention to an analysis of aggregate time series data from the quarterly Flow of Funds accounts that are published by the Board of Governors of the Federal Reserve System.[40] Although our primary interest here will still be on the effect of price expectations on saving and its composition, the reduced size of the time series equations makes it feasible to include the predictors other than price expectations in the discussion.

A. The Model, Data, and Methods of Estimation

The model underlying the time series analysis is as follows

$$(11)\quad y_t = \alpha_0 + \alpha_1 SH_{t-1} + \alpha_2 SD_{t-1} + \alpha_3 \Delta SB_t + \alpha_4 SB_{t-1} + \alpha_5 DD_{t-1} + \alpha_6 SA_{t-1} + \alpha_7 CC_{t-1} + \alpha_8 LP_t + \alpha_9 TP_t + \alpha_{10} SI_t + \alpha_{11} T_t + \alpha_{12} PE_t + \alpha_{13} PA_{t-1} + \alpha_{14} R_t + \alpha_{15} LC_t + u_t$$

where:

y = a measure of saving to be defined below
SH = depreciated stock of residential housing less the mortgage debt on the stock
SD = depreciated stock of durable goods
SB = market value of stocks and bonds owned by households (hereafter referred to as corporate wealth)
DD = demand deposits and currency owned by households
SA = savings and time deposits owned by households
CC = consumer debt owed by households
LP = labor and property income
TP = transfer payments made to individuals
SI = personal contributions to social insurance
T = personal tax and nontax payments
PE = a measure of price expectations
PA = percentage increase in the implicit deflator for personal consumption expenditure during the preceding four quarters
R = market rate of interest
LC = a vector of points on the age distribution of the population
u = random error term

Detailed definitions of all variables and their sources are given in Appendix B. Like the models used with the micro data sets, the model in

Equation 11 is based on the model discussed in Section 3. The quantities comprising net worth (*SH, SD, SB, DD, SA,* and *CC*) represent objective state variables, *PE* represents a subjective state variable,[41] and the income variables *LP, TP, SI,* and *T, PA,* and *R* represent objective market quantities. Finally, *LC* represents a vector of demographic characteristics, which in this case is confined to points on the age distribution of the population.

The price expectations variable employed is based on data collected quarterly by the Survey Research Center at the University of Michigan and is defined as the difference between the proportion of surveyed households expecting prices in the year ahead to increase minus the proportion expecting prices to decrease divided by the sum of these two proportions. Thus defined, *PE* is a quantity that necessarily lies between −1 and 1, being positive when more households expect prices to rise than to fall and negative when the reverse is true.[42]

Personal disposable income, it will be noticed, is disaggregated to four components—the sum of labor and property income, transfer payments, personal contributions to social insurance, and personal taxes. This disaggregation, which is motivated by the findings in Taylor (1971), is based on the breakdown appearing in Table 2.1 of the National Income Accounts, but with two modifications. The first is minor and involves the addition to labor and property income of government insurance payments and capital gains distributions simply to bring the NIA data into line with FOF definitions. The second modification is more substantive and involves eliminating from disposable income components based on imputation. Details are given in Appendix B. Since households may regard changes in the market value of their holdings of stocks and bonds as income, even though only a part of the gains (or losses) may be realized, the current change in *SB*, as well as its beginning-of-period level, is also included as a predictor. Finally, depending on the variable being explained, two different series have been used for the interest rate—namely, the yield on Baa bonds and the yield on savings accounts.

The analysis is quarterly and covers a sample period beginning with the first quarter of 1954 and ending with the fourth quarter of 1970. The data on savings and income are all taken from either the Flow of Funds or else from the National Income Accounts. All flows are seasonally adjusted and are expressed at annual rates in billions of current dollars. The asset variables are also based on data from the Flow of Funds and are measured at the end of the preceding period in billions of current dollars. These, too, are seasonally adjusted where appropriate. Estimation has been by ordinary least squares, except for four equations that have been estimated using the Cochrane-Orcutt transformation as a correction for apparent autocorrelation in the error term. Finally, there are several equations that involve a distributed lag, and these have been estimated on the assumption that the parameters of the distributed lag lie on a third-degree polynomial, using the LaGrangian method of interpolation developed by Almon (1965).

B. Summary and Evaluation of Time Series Results

Equations have been estimated for fourteen different items appearing in the household sector of the quarterly Flow of Funds and are tabulated in Table 8. The variables involving a distributed lag are denoted by an asterisk, and the coefficient given in Table 8 in these cases represents the sum of the lag coefficients. The lag coefficients themselves are presented in Table 9. Finally, the coefficients for just the price expectations and inflation variables are tabulated in Table 10.

Brief definitions of the dependent variables are as follows:[43]

PS = personal saving
NS = net saving
GS = gross saving
GI = gross investment
CE = capital expenditures
NFI = net financial investment
CD = expenditures for durable goods
HN = investment in housing
NAF = net acquisition of financial assets
NIL = net increase in liabilities
DD = holdings of demand deposits and currency
SA = holdings of savings and time deposits
CC = change in consumer debt
ID = change in installment debt.

For the independent variables not already defined:

R1 = yield on Baa bonds
R2 = yield on savings accounts
A1 = percentage of population of age 20 to 30
AA1 = percentage of population of age 20 to 25
A2 = percentage of population of age 30 to 40
AA2 = percentage of population of age 25 to 40
A3 = percentage of population of age 40 to 50
A4 = percentage of population of age 50 to 65.

The first three equations in Table 8 refer to concepts of saving of varying comprehensiveness, whereas the last eleven refer to household investment and its most important components. The first equation (*PS*) refers to personal saving as defined in the National Income Accounts, which is

TABLE 8 Equations, Quarterly Flow of Funds
(t ratios in parentheses)

Independent Variable	PS	NS	GS	CI	CE	NFI
			Dependent Variable			
Constant	−372.46	−215.65	−331.99			
	(−3.18)	(−2.01)	(−3.06)			
SH			0.12	−0.26		
			(1.54)	(−1.79)		
SD	−0.23	−0.32	−0.20			
	(−3.52)	(−5.46)	(−2.45)			
ΔSB	−0.014	−0.021	−0.014		0.16*	
	(−1.53)	(−2.72)	(−1.70)		(5.11)	
SB						−0.034
						(−2.10)
DD						
SA			−0.11	−0.10		
			(−1.24)	(−1.04)		
CC	0.80*	−0.43	−0.35	−0.84		−0.47
	(3.15)	(−2.64)	(−2.18)	(2.48)		(−1.66)
LP	0.35	0.52	0.60	0.58	0.16	0.22
	(4.72)	(9.22)	(10.54)	(4.36)	(7.88)	(4.24)
TP	1.01	0.74	0.89	1.12	−0.21	1.44
	(5.72)	(5.63)	(6.67)	(4.91)	(−1.59)	(5.80)
SI	−2.23	−1.28	−1.30	−1.53		
	(−4.14)	(−2.86)	(−2.74)	(−1.54)		
T	−0.72	−0.85	−0.90	−0.78		−1.00
	(−7.94)	(−13.07)	(−11.23)	(−4.06)		(−5.35)

PE	6.38	5.83	5.05	11.83	2.99	4.88
	(2.98)	(3.59)	(3.13)	(3.20)	(1.20)	(1.75)
PA		0.70	0.63	2.30		3.76
		(1.72)	(1.54)	(2.96)		(3.95)
R1				−4.40		−7.03
				(−2.02)		(−3.39)
R2						
A1	2.20	6.46	7.61	4.58		
	(1.70)	(6.07)	(5.16)	(2.12)		
AA1					1.86	
					(2.88)	
A2	10.70	−2.78	7.00	−4.82		
	(4.46)	(−1.43)	(−1.60)	(−2.97)		
AA2						
A3	31.89	27.55	48.65			
	(2.77)	(2.65)	(4.31)			
A4	−19.10	−14.83	−23.36			
	(−3.72)	(−3.17)	(−4.46)			
R^2	0.989	0.995	0.999	0.990	0.994	0.889
$\hat{\rho}$					0.52	
S_e	1.52	1.32	1.29	3.34	1.63	4.39
DW	2.29	2.04	2.08	2.68	1.85	2.06
$\bar{v}$	32.41	40.34	95.04	98.17	81.90	19.20
df	49	54	52	56	53	59

TABLE 8 (continued)

Independent Variable	Dependent Variable *CD*	*HN*	*NAF*	*NIL*	*DD*	*SA*
Constant	−215.87 (−3.06)					734.23 (5.75)
SH						
SD				0.21 (2.47)		
ΔSB	0.085* (3.14)	0.052* (3.56)	0.038 (1.77)		0.048* (3.51)	0.12* (3.47)
SB			−0.017 (−1.02)			
DD					0.62 (7.74)	
SA		0.10 (2.17)				
CC	−0.24 (−1.49)	−0.60* (−3.44)	−2.03 (−4.85)	−1.58* (−6.55)		
LP	0.15 (5.17)	0.049 (1.67)	0.56 (3.42)	0.12 (1.70	0.11 (3.69)	0.16 (3.00)
TP			1.00 (3.76)			0.72 (4.89)
SI			−1.61 (−1.69)		−1.015 (−3.65)	
T			−0.70 (−3.98)		0.14 (2.55)	

PE	3.02 (1.48)	1.35 (1.19)	10.53 (2.34)	5.40 (1.88)		
PA			2.73 (2.97)	−0.95 (−1.45)		
*R*1			−6.88 (−3.53)			
*R*2					−4.51 (−3.23)	4.35 (1.24)
*A*1				6.51 (3.80)		12.22 (4.06)
*AA*1	7.63 (2.99)		15.33 (2.17)			
*A*2		2.07 (1.50)		−22.32 (−6.43)		−42.02 (−11.19)
*AA*2	−2.20 (−2.85)		−5.46 (−3.58)			
*A*3	16.86 (3.00)	−8.56 (−2.88)		19.53 (6.37)		−17.61 (−2.31)
*A*4		6.74 (2.68)				
R^2	0.996	0.894	0.952	0.853	0.998	0.999
$\hat{\rho}$		0.39			0.46	0.66
S_r	1.31	0.74	3.86	2.91	0.99	1.82
DW	1.70	1.74	2.55	2.22	1.88	1.35
$\bar{y}$	59.12	22.78	41.02	22.21	78.04	225.15
df	50	49	56	56	55	53

TABLE 8 (concluded)

Independent Variable	Dependent Variable ΔCC	Dependent Variable ΔID	Independent Variable	Dependent Variable ΔCC	Dependent Variable ΔID
Constant			$A2$		
SH			$AA2$	−3.04	−2.44
				(−7.90)	(−7.52)
SD			$A3$		
SB			$A4$		
DD			R^2	0.887	0.895
SA			$\hat{\rho}$		
CC	−0.93*	−0.81*	S_e	1.17	1.00
	(−6.94)	(−7.04)			
LP	0.20	0.20	DW	1.96	1.86
	(5.63)	(7.55)			
TP	−0.23	−0.27	$\bar{y}$	5.89	4.85
	(−3.56)	(−5.30)			
SI	−0.93	−0.94	df	54	55
	(−3.33)	(−4.91)			
T					
PE	1.71				
	(1.38)				
PA					
$R1$					
$R2$					
$A1$					
$AA1$	8.15	5.54			
	(5.48)	(5.11)			

NOTES: 1. An asterisk indicates that this variable has been estimated with a distributed lag. The coefficient presented represents the sum of the lag coefficients; the lag coefficients themselves are given in Table 9.
2. The equations with an entry for $\hat{\rho}$ have been estimated using the Cochrane-Orcutt transformation.

TABLE 9 Distributed Lag Coefficients

		Lag								
Equation	Variable	t	$t-1$	$t-2$	$t-3$	$t-4$	$t-5$	$t-6$	$t-7$	$t-8$
PS	*CC*		−0.25	0.07	0.30	0.38	0.30			
			(−0.57)	(0.30)	(1.18)	(4.22)	(1.21)			
CE	Δ*SB*	−0.015	0.014	0.031	0.038	0.037	0.030	0.020	0.010	
		(−1.87)	(2.28)	(4.44)	(5.33)	(5.10)	(3.86)	(2.57)	(1.63)	
CD	Δ*SB*	−0.010	0.001	0.010	0.015	0.017	0.018	0.016	0.012	0.007
		(−1.57)	(0.36)	(2.22)	(3.38)	(4.25)	(4.26)	(3.43)	(2.57)	(1.95)
HN	Δ*SB*	−0.003	0.006	0.012	0.015	0.014	0.009			
		(−0.72)	(1.63)	(3.37)	(4.40)	(3.68)	(2.72)			
	CC		−0.12	−0.092	−0.022	−0.061	−0.11	−0.14	−0.12	
			(−0.61)	(−0.66)	(−0.23)	(−0.80)	(−3.95)	(−2.41)	(−1.58)	
NIL	*CC*		1.23	−2.41	−0.79					
			(1.62)	(−2.18)	(−1.24)					
DD	Δ*SB*	0.018	0.012	0.008	0.006	0.004				
		(3.50)	(2.57)	(2.10)	(1.50)	(0.86)				
SA	Δ*SB*	0.044	0.016	0.014	0.021	0.022				
		(4.54)	(1.73)	(1.58)	(2.26)	(2.33)				
Δ*CC*	*CC*		0.48	−0.64	−0.69	−0.25	0.17			
			(1.52)	(−3.58)	(−3.68)	(−5.22)	(1.07)			
Δ*ID*	*CC*		0.59	−0.61	−0.70	−0.26	0.17			
			(2.19)	(−3.99)	(−4.33)	(−6.37)	(1.22)			

TABLE 10 Coefficients On Expected and Actual Price Changes, Time Series Equations (*t* ratios in parentheses)

Dependent Variable	*PE*	*PA*	Dependent Variable	*PE*	*PA*
PS	6.38 (2.98)	—	*HN*	1.35 (1.19)	—
NS	5.83 (3.59)	0.70 (1.72)	*NAF*	10.53 (2.34)	2.73 (2.97)
GS	5.05 (3.13)	0.63 (1.54)	*NIL*	5.40 (1.88)	−0.95 (−1.45)
GI	11.83 (3.20)	—	*DD*	—	—
CE	2.99 (1.20)	—	*SA*	—	—
NFI	4.88 (1.75)	3.76 (3.95)	Δ*CC*	1.71 (1.38)	—
CD	3.02 (1.48)	—	Δ*ID*	—	—

composed of net purchases of owner-occupied dwellings and buildings of nonprofit organizations, less depreciation, plus net investment in financial assets. For present purposes, however, the NIA definition of personal saving has been augmented with two quantities from the Flow of Funds —namely, credits from government insurance and capital gains dividends. The second equation is for net saving (*NS*), which consists of personal saving (as just defined) plus expenditures for durable goods net of depreciation. This definition of saving is interesting because it corresponds closely (at least in principle) with the definition of saving implicit in the permanent income and life-cycle models. Gross saving (*GS*) is the most comprehensive concept analyzed and consists of net saving plus depreciation on residential housing, durable goods, and the capital stock of nonprofit organizations. Study of this quantity is important because, in relation to personal and net saving, it best represents the full impact of the household sector's saving and investment decisions on the economy.

On the investment side of the household ledger, the most comprehensive concept analyzed is gross investment (*GI*), which consists of capital expenditures (*CE*) and net financial investment (*NFI*). In principle, gross investment and gross saving should always be equal, but, like National Income and Net National Product in the National Income Accounts, they are separated by a statistical discrepancy that frequently reaches $5 billion or more. Further disaggregation breaks down capital expenditures into expenditures for durable goods (*CD*) and gross investment in housing (*HN*), whereas net financial investment is broken down into net acquisition of financial assets (*NAF*) and net increase in liabilities (*NIL*). Finally, equations have also been estimated for demand deposits and currency held by households (*DD*), savings and time deposits (*SA*), the net increase in consumer credit (ΔCC), and the net increase in installment debt (ΔID).

Price Expectations The results (see Table 10) for the equations for personal, net, and gross saving and gross investment, in all of which the *t* ratio for the price expectations variable, *PE*, is at least 2.9, leave little question but that expectations of inflation lead households to increase the total amount that they save. This corroborates the recent findings of Juster and Wachtel (1972a) and the earlier ones of Mueller (1959) and is consistent with the Katona-Juster thesis that inflation increases the uncertainty with which households view the future and causes them to increase their overall rate of saving.

The equations for capital expenditures and the net acquisition of financial assets indicate that the expectation of inflation affects the purchase of both real and financial assets. The former is likely a reflection of the substitution of present for more expensive future goods, or possibly an anticipation of future capital gains, whereas the latter (i.e., the acquisition of financial assets) is more likely a reflection of the Katona-Juster effect. Finally, it is especially interesting from the equations for the net increase in liabilities and the net increase in consumer credit that households are willing to finance (in part) their increased investment in real and financial assets through borrowing. The cause of this could be a nominal rate of interest that had not yet adjusted to the "expected" rate of inflation.[44]

Inflation in the Recent Past Although it does not do so with the frequency and gusto of expected inflation, inflation in the recent past, as represented by a four-quarter moving average of the percentage change in the PCE deflator, appears in several equations. My idea for including this variable in the model was that it would allow for a real-balance effect on money-denominated financial assets. Inflation reduces the real value of such assets and, to the extent that inflation was not anticipated, the hypothesis is that households will increase current saving in order to make up the loss. *PA* appears with a positive sign in the equations for *NS*, *GS*, *GI*, *NFI*, and *NAF* and with a negative sign in the equation for *NIL*—all of which is in keeping with the hypothesized real-balance effect. Still, the hypothesis would have received more impressive support had *PA* also appeared (with positive sign) in the equation for savings accounts.

Effect of Wealth It is a well-established implication of the Modigliani-Brumberg life-cycle model that saving will be negatively related to the level of wealth. Existing studies, however, have tended to concentrate on wealth as a whole and have not paid much attention to the possibility that the effect of wealth on saving is different depending on the type of wealth involved. The results presented in Table 8 suggest that differential effects are definitely present, not only on total saving, but on its disposition as well. Indeed, the only item analyzed for which wealth in some form is absent altogether is savings accounts.[45]

Of the components of wealth that have been considered, the ones that appear most frequently are corporate wealth, often as a distributed lag on capital gains, and the existing level of consumer debt, the latter, of course, being a liability rather than an asset. The stock of durable goods appears in the three equations for saving (*PS*, *NS*, and *GS*), but rather surprisingly, not in the equations for gross investment, capital expenditures, or expenditures for durable goods. The housing stock shows up in the equations for gross saving (although with what would appear to be the wrong sign) and gross investment, but not, as would be expected, in the equations for capital expenditures and residential construction. Surprisingly, in fact, in the equation for capital expenditures, no real components of wealth appear as predictors at all.

With regard to corporate wealth, the results clearly support the thesis that the stock market, through generating capital gains and losses, has an influence on saving and consumption. However, because of the fact that realized capital gains are not included in disposable income, care must be taken in interpreting the quantitative strength of this influence. We can estimate the effect of capital gains on consumption, but paradoxically we cannot measure the effect of capital gains on saving, *properly measured*. From the equation for gross saving, a dollar of capital gain leads to about a $.02 increase in consumption, the latter being defined as the sum of expenditures on nondurables and services. That this is so follows from the fact that *GS*, consumption, and disposable income are connected by an identity. However, since realized capital gains do not appear in disposable income, the true effect on saving will not be given by the decrease in *GS*, but will in fact be an increase in consumption. To illustrate, if there is a capital gain of $1 of which $.50 is realized, then, again from the equation for gross saving, consumption will increase by $.02 and true saving by $.48, although gross saving in the Flow of Funds would indicate a decrease of $.02. Two conclusions thus emerge:

1. The impact of capital gains appears to fall much more on saving than on consumption; and
2. Because of the fact that realized capital gains are not included in disposable income, the measures of saving based on NIA definitions will considerably understate changes in saving, properly defined, in periods of marked realization of capital gains or losses.[46]

The rather small effect on consumption that has just been pointed out is counter to the substantial wealth effects that Modigliani and his associates are currently finding in the consumption sector of the MIT-Penn-SSRC (MPS) model.[47] However, the following should be kept in mind in assessing this apparent contradiction:

1. Although the two models have many elements in common, they also have points of divergence. Wealth is treated as an aggregate in the MPS model, but is disaggregated here; disposable income is disaggregated here; the MPS model contains no terms embodying expectations; and, interestingly enough, the present model, through the inclusion of points on the age structure of the population, contains life-cycle features that the MPS model does not.
2. There is also a difference, which may possibly be of consequence, in the corporate wealth series used in the two models. The procedure here has been to take FOF year-end levels and interpolate them to quarterly levels using the Standard and Poor Index of Stock Prices. The MPS model, on the other hand, uses a corporate wealth series constructed by capitalizing net dividends from the National Income Accounts by the Standard and Poor Index of Dividend Yields.[48]

Although there are numerous instances of absence of components of wealth from the equations in Table 8, cases of perverse sign on those included are rather few. The housing stock has a positive coefficient in the equation for gross saving, but in view of the fact that this sign is reversed in the equation for gross investment, this may reflect mainly on the quality of the underlying data for saving. The stock of durable goods has a positive sign in the equation explaining the net increase in liabilities, which seems somewhat strange, but the most puzzling sign is the one on CC. Frequently, the level of consumer debt appears with a distributed lag, which is reasonable since much of consumer debt is subject to well-defined schedules of repayment, and coefficients on CC beginning two quarters in the past almost invariably have the expected sign (see Table 9).[49] But this is usually not the case for the sign on CC_{t-1}. While a negative sign in $t-1$ can be rationalized somewhat in those equations in which expenditures for durable goods form part of the dependent variable, the positive sign in $t-1$ in the equations involving liabilities as the dependent variable seems a genuine anomaly.[50]

Saving out of Different Types of Income The results presented in Table 8 corroborate in every major detail the findings reported in my BPEA paper with respect to the disaggregation of personal income.[51] In particular, they continue to show a very high short-run marginal propensity to save out of transfer payments and very substantial negative coefficients on personal contributions to social insurance and personal taxes. Although the results obtained here offer no insight into *why* the short-run marginal propensity to save out of transfer income is higher than out of labor and property income, they do throw some light on where households channel this higher saving. The equations for *NAF* and *SA* indicate that it is into financial assets and into savings accounts in particular.[52]

Finally, it is worthy to mention that the results do offer some insight into the coefficient on personal taxes being larger (in absolute value) than the one on labor and property income. For, as indicated in Footnote 46, it would appear to be accounted for, at least in part, by the inclusion in personal taxes of the taxes paid on capital gains.

Age Structure of the Population The discussion of the results with respect to the age distribution of the population will be facilitated by the summary of the impact of age on saving and portfolio composition that is set out in Table 11. This table provides the signs of the several age-distribution variables in each of the equations. A blank indicates that the variable in question is absent.

The significant features are as follows:

1. Households whose heads are very young—age 20 to 30—save more than average. This would appear to corroborate the point made by

TABLE 11 Signs of Age Structure Variables In Time Series Equations

Equation	Age Group					
	20–25	20–30	25–40	30–40	40–50	50–65
PS		+		+	+	–
NS		+		–	+	–
GS		+		–	+	–
CI		+				
CE	+					
NFI						
CD	+		–		+	
HN						
NAF	+		–			
NIL		–		–		
DD						–
SA		+		–		
CC	+		–			
ID	+		–			

Tobin and Dolde (1971) that young households are forced to save more than would be expected by strict life-cycle considerations because of imperfections in the capital market.

2. Households in the age group 30–40 are indicated to save less than average. Interestingly, the "dissaving" appears especially to surface in the holding of financial assets, particularly savings accounts. That the saving of this age group tends to be less than average conforms with general observation, but it is not in keeping with the life-cycle model in which only age is taken into account.[53]
3. Considerably greater than average saving is exhibited by the 40–50 age group. This, too, accords with casual observation, and also with the fact that peak earning potential is usually reached in the forties.
4. The 50–65 age group, on the other hand, is indicated to be relative dissavers. Although this is in keeping with the life-cycle model, I nevertheless find it somewhat unexpected, since casual observation suggests that the ten to fifteen years before age 65 are years of conscious saving for retirement.
5. Finally, the equations for which age appears to be of no consequence at all are net investment in financial assets and the holdings of demand deposits. However, neither of these results seems particularly surprising.

[7] CONCLUSIONS AND GENERAL DISCUSSION

The findings with respect to price expectations cluster at two extremes. The time series results unambiguously point to price expectations having an impact on the amount that households save and on the way that they structure their portfolios. In particular, the time series results show that expectations of inflation lead households to save more. The results from the two micro data sets, in contrast, are weak and mixed. The CAS results provide mild support for the Katona-Juster hypothesis and, in addition, suggest that price expectations are of most consequence to households of moderate wealth. On the other hand, nothing conclusive at all emerges from the CU sample.

The relationship between the saving and portfolio decisions of a household and its expectations regarding inflation obviously involves a set of issues that is too complex to come fully to grips with in a study as limited as this one. Many of these issues have been ignored altogether—such as whether higher (or lower) prices anticipated by a household are expected to be permanent or only temporary—whereas others, such as allowing for the confidence with which a household holds its expectations, have been taken into account only crudely and indirectly. Yet, the present undertaking has, in my opinion, led to positive results. First, and foremost, it provides fairly convincing evidence that individual price expectations are a factor to be taken seriously and that efforts to collect them on a regular basis should be actively encouraged.

Second, and of no less importance, the finding in Table 5 that price expectations are more important to households of moderate wealth as opposed to poor or very wealthy households seems to me to make sense. For the most part, households with little wealth lack the scope to be much affected by expectations of inflation. Imperfect capital markets preclude their undertaking many transactions, and high transactions costs limit their interest in undertaking others. Consequently, these households are more likely to react to inflation that has already occurred rather than to inflation that they may expect. Wealthy households, on the other hand, can either afford to ignore price expectations altogether or, what is possibly more likely, can place their portfolio decisions in the hands of professionals whose expectations, rather than their own, are the ones that are relevant. Finally, for households with moderate wealth, their portfolio is sufficiently large to provide a return to its active management, but not large enough to be placed in the hands of professionals.

Finally, it has become increasingly clear through the course of the study that the price expectations data that have been analyzed are markedly deficient. Indeed, my general feeling is that this deficiency more than anything else is the primary reason for the essentially negative results yielded by the two micro data sets. I do not mean this as a criticism of the surveys from which the data were obtained—for they were designed for purposes other than the analysis of price expectations—but only in terms of lessons for the future. In particular:

1. Analysis of the price expectations data in both the CAS and CU samples indicates that the distribution of price expectations data varies markedly depending on which member of the household was queried.[54] Clearly, the expectations that are relevant are those of the one (or ones) responsible for the decisions. Future efforts to collect price expectations data must accordingly make certain that the expectations obtained are those of the actual decision maker(s).
2. Efforts should also focus on obtaining estimates of the confidence with which price expectations are held. Indeed, obtaining this information in a usable form must be accorded very high priority.
3. Finally, future endeavors should also elicit information on whether near-term price changes are expected to be permanent or only temporary.

APPENDIX A

Estimated Equations for CAS and CU Data Sets

Glossary for Tables A-1 and A-2 (Consumer Anticipations Survey data set)

- *SA*: holdings of savings accounts
- *GB*: holdings of government bonds
- ΔCS: net purchases of common stock
- *IP*: investment in property
- *S*1: $\Delta SA + \Delta GB$ (investment in fixed claims)
- *S*2: $\Delta SA + \Delta GB + \Delta CS$ (investment in financial assets)
- *S*3: $\Delta SA + \Delta GB + \Delta CS + IP$ (change in total assets)
- *CS*: market value of common stock holdings
- *OVH*: original purchase price of home
- *HMD*: mortgage debt on home
- *NCO*: number of cars owned
- *SC*1: $\begin{cases} 1 & \text{if first car needs repair} \\ 0 & \text{otherwise} \end{cases}$
- *SC*2: $\begin{cases} 1 & \text{if second car needs repair} \\ 0 & \text{otherwise} \end{cases}$
- *HD*1: $\begin{cases} 1 & \text{if family owns stove, refrigerator, washing machine, and black and white TV} \\ 0 & \text{otherwise} \end{cases}$
- *HD*2: $\begin{cases} 1 & \text{if family owns clothes dryer or dishwasher or room air conditioner} \\ 0 & \text{otherwise} \end{cases}$
- *HD*3: $\begin{cases} 1 & \text{if family owns color TV or hi-fi or musical instrument} \\ 0 & \text{otherwise} \end{cases}$
- *WS*1: wage and salary income of first income receiver
- *WS*2: wage and salary income of second income receiver
- *WS*3: wage and salary income of third income receiver
- *ID*: interest and dividend income
- *RI*: rental income
- *GI*: gifts and inheritances
- *BI*: business income
- *SS*: social security
- *PI*: pension income
- *OI*: other income
- *CGH*: unrealized capital gains on home
- *CGVH*: unrealized capital gains on vacation home
- *LI*: $\begin{cases} 1 & \text{if household holds a life insurance policy with surrender value} \\ 0 & \text{otherwise} \end{cases}$
- *DY*: change in family income expected in 1968
- *IND*: installment debt payments during 1967
- *A*1: $\begin{cases} 1 & \text{if household head's age is less than 30} \\ 0 & \text{otherwise} \end{cases}$
- *A*2: $\begin{cases} 1 & \text{if household head's age is between 30 and 39} \\ 0 & \text{otherwise} \end{cases}$

$A3$: $\begin{cases} 1 & \text{if household head's age is between 40 and 54} \\ 0 & \text{otherwise} \end{cases}$

$A4$: $\begin{cases} 1 & \text{if household head's age is between 55 and 64} \\ 0 & \text{otherwise} \end{cases}$

$EH1$: $\begin{cases} 1 & \text{if head's education is 8 years or less} \\ 0 & \text{otherwise} \end{cases}$

$EH2$: $\begin{cases} 1 & \text{if head's education is 1–3 years of high school} \\ 0 & \text{otherwise} \end{cases}$

$EH3$: $\begin{cases} 1 & \text{if head's education is 4 years of high school} \\ 0 & \text{otherwise} \end{cases}$

$EH4$: $\begin{cases} 1 & \text{if head's education is 1–3 years of college} \\ 0 & \text{otherwise} \end{cases}$

$EH5$: $\begin{cases} 1 & \text{if head's education is 4 or more years of college} \\ 0 & \text{otherwise} \end{cases}$

$C1$: $\begin{cases} 1 & \text{if 1 child in household} \\ 0 & \text{otherwise} \end{cases}$

$C2$: $\begin{cases} 1 & \text{if 2 children in household} \\ 0 & \text{otherwise} \end{cases}$

$C3$: $\begin{cases} 1 & \text{if 3 children in household} \\ 0 & \text{otherwise} \end{cases}$

$C4$: $\begin{cases} 1 & \text{if 4 children in household} \\ 0 & \text{otherwise} \end{cases}$

$C5$: $\begin{cases} 1 & \text{if 5 children in household} \\ 0 & \text{otherwise} \end{cases}$

$C6$: $\begin{cases} 1 & \text{if 6 or more children in household} \\ 0 & \text{otherwise} \end{cases}$

$CC1$: $\begin{cases} 1 & \text{if 1 child in college} \\ 0 & \text{otherwise} \end{cases}$

$CC2$: $\begin{cases} 1 & \text{if 2 children in college} \\ 0 & \text{otherwise} \end{cases}$

$CC3$: $\begin{cases} 1 & \text{if 3 or more children in college} \\ 0 & \text{otherwise} \end{cases}$

DMC: $\begin{cases} 1 & \text{if family desires more children} \\ 0 & \text{otherwise} \end{cases}$

$PE1$: $\begin{cases} 1 & \text{if 0–2\% inflation expected during next 12 months} \\ 0 & \text{otherwise} \end{cases}$

$PE2$: $\begin{cases} 1 & \text{if 2–4\% inflation expected} \\ 0 & \text{otherwise} \end{cases}$

$PE3$: $\begin{cases} 1 & \text{if 5–9\% inflation expected} \\ 0 & \text{otherwise} \end{cases}$

$PE4$: $\begin{cases} 1 & \text{if greater than 9\% inflation expected} \\ 0 & \text{otherwise} \end{cases}$

$OCC1$: $\begin{cases} 1 & \text{if farm proprietor} \\ 0 & \text{otherwise} \end{cases}$

$OCC2$: $\begin{cases} 1 & \text{if service worker} \\ 0 & \text{otherwise} \end{cases}$

OCC3: $\begin{cases} 1 & \text{if blue collar worker} \\ 0 & \text{otherwise} \end{cases}$

OCC4: $\begin{cases} 1 & \text{if manager} \\ 0 & \text{otherwise} \end{cases}$

OCC5: $\begin{cases} 1 & \text{if technician or in a profession} \\ 0 & \text{otherwise} \end{cases}$

FTW: $\begin{cases} 1 & \text{if head worked full time during 1967} \\ 0 & \text{otherwise} \end{cases}$

DJ2: $\begin{cases} 1 & \text{if head desires second job} \\ 0 & \text{otherwise} \end{cases}$

PP: pension payments in 1967

TABLE A-1 First Part: Estimates for All Wealth Classes Combined, Based on CAS Data Set (*t* ratios in parentheses; for explanation of symbols, see preceding Glossary)

Independent Variable	Dependent Variable *SA*	*GB*	ΔCS	*IP*
Constant	404.81	72.62	−282.69	−2423.26
SA(*t* − 1)	.962			
	(127.53)			
GB(*t* − 1)		1.015		
		(324.82)		
CS(*t* − 1)	−0.0151	−0.00073	−0.0541	0.00569
	(−3.39)	(−1.21)	(−8.76)	(0.74)
OVH	0.00208	−.00124	0.0314	−0.0171
	(0.29)	(−1.27)	(3.08)	(−1.37)
HMD	−0.00919	.00144	−0.0240	−0.00293
	(−1.27)	(1.46)	(−2.35)	(−0.23)
NCO	58.67	−5.63	−13.68	−48.80
	(0.69)	(−0.48)	(−0.11)	(−0.33)
*SC*1	−282.41	0.627	−258.66	−12.57
	(−1.29)	(0.02)	(−0.83)	(−0.03)
*SC*2	74.50	67.61	477.06	68.44
	(0.37)	(2.50)	(1.69)	(0.19)
*HD*1	93.28	7.13	−294.45	473.07
	(0.67)	(0.38)	(−1.50)	(1.97)
*HD*2	−51.65	−13.99	86.21	133.32
	(−0.24)	(−0.48)	(0.28)	(0.36)
*HD*3	−184.37	27.02	−51.08	39.53
	(−1.17)	(1.28)	(−0.23)	(0.14)
*WS*1	0.0466	0.00201	0.133	0.117
	(5.05)	(1.64)	(10.31)	(7.42)
*WS*2	0.00650	0.00050	−0.240	0.114
	(0.22)	(0.12)	(−5.76)	(2.23)
*WS*3	−0.135	0.0141	0.135	0.0086
	(−1.75)	(0.90)	(1.25)	(0.07)
ID	−0.0421	−0.00596	0.386	0.00104
	(−1.33)	(−1.39)	(8.78)	(0.02)
RI	0.0925	−0.00398	−0.00477	0.308
	(2.30)	(−0.73)	(−0.12)	(4.45)
GI	0.139	0.0235	0.397	0.0987
	(5.31)	(6.66)	(10.80)	(2.20)
BI	0.0490	0.00088	0.0842	0.118
	(4.81)	(6.64)	(5.87)	(6.69)
SS	0.182	0.0239	−0.355	−0.157
	(0.81)	(0.79)	(−1.14)	(−0.41)
PI	0.0802	−0.00365	0.0595	0.130
	(1.04)	(−0.35)	(0.55)	(0.99)
OI	0.135	0.00367	0.114	−0.0565
	(2.90)	(0.58)	(1.74)	(−0.71)

TABLE A-1 First Part (continued)

Independent Variable	Dependent Variable *SA*	*GB*	*ΔCS*	*IP*
CG	0.0779	0.0134	−0.103	0.277
	(3.55)	(4.54)	(−3.35)	(7.38)
CGH	−0.00594	−0.00129	0.00523	0.0293
	(−0.86)	(−1.38)	(0.54)	(2.48)
CGVH	−0.00271	−0.00397	0.0333	0.0273
	(−0.12)	(−1.35)	(1.09)	(0.73)
LI	−181.58	26.95	−51.98	316.75
	(−1.21)	(1.33)	(−0.24)	(1.23)
DY	−0.00052	0.00522	0.105	0.0214
	(−0.04)	(3.14)	(6.08)	(1.01)
IND	0.165	−0.0154	−0.0118	−0.527
	(1.39)	(−0.95)	(−0.07)	(−2.57)
*A*1	−503.99	−36.44	−564.80	1535.12
	(−0.87)	(−0.47)	(−0.70)	(1.54)
*A*2	−261.76	−34.15	−805.60	963.14
	(−0.50)	(−0.48)	(−1.09)	(1.06)
*A*3	−402.48	−25.65	−1078.05	743.66
	(−0.78)	(−0.37)	(−1.49)	(0.84)
*A*4	223.93	19.67	−942.52	1345.43
	(0.42)	(0.27)	(−1.27)	(1.40)
*EH*1	98.19	−70.12	476.97	883.81
	(0.22)	(−1.17)	(0.76)	(1.16)
*EH*2	299.03	−13.06	640.76	650.75
	(0.90)	(−0.29)	(1.37)	(1.14)
*EH*3	200.68	0.730	742.07	114.04
	(1.07)	(0.03)	(2.81)	(0.35)
*EH*4	−1.04	16.21	284.16	218.26
	(−0.01)	(0.67)	(1.14)	(0.72)
*EH*5	−83.34	−15.30	622.50	−94.36
	(−0.52)	(−0.71)	(2.79)	(−0.35)
*C*1	−1527.40	53.08	−1282.33	656.45
	(−3.67)	(0.94)	(−2.19)	(0.91)
*C*2	−1498.52	24.33	−1494.93	1080.72
	(−3.42)	(0.41)	(−2.42)	(1.43)
*C*3	−1458.63	29.46	−2382.19	1919.45
	(−2.94)	(0.44)	(−3.41)	(2.25)
*C*4	−2075.14	−14.93	950.90	1498.77
	(−2.86)	(−0.15)	(0.93)	(1.20)
*C*5	−1698.85	48.36	−2403.63	−16.21
	(−1.68)	(0.35)	(−1.70)	(−0.01)
*C*6	−1419.07	44.13	−1862.59	474.72
	(−1.58)	(0.36)	(−1.47)	(0.31)

TABLE A-1 First Part (concluded)

Independent Variable	Dependent Variable *SA*	*GB*	ΔCS	*IP*
*CC*1	84.53	−27.71	105.06	−283.85
	(0.49)	(−1.18)	(0.43)	(−0.95)
*CC*2	−908.53	−41.48	−528.71	695.81
	(−2.66)	(−0.89)	(−1.10)	(1.18)
*CC*3	1646.32	−50.59	−3129.85	−1579.83
	(1.65)	(−0.38)	(−2.24)	(−0.92)
DMC	1498.89	−35.34	1499.39	−543.83
	(3.95)	(−0.69)	(2.81)	(−0.83)
*PE*1	312.21	0.703	−386.21	−572.46
	(1.29)	(0.02)	(−1.13)	(−1.37)
*PE*2	−36.42	−13.76	107.97	−261.32
	(−0.21)	(−0.60)	(0.45)	(−0.89)
*PE*3	62.24	−27.65	183.04	−562.15
	(0.33)	(−1.08)	(0.69)	(−1.72)
*PE*4	300.20	−57.59	342.63	−442.84
	(1.31)	(−1.85)	(1.06)	(−1.17)
*OCC*1	−318.78	−35.74	841.82	−1152.20
	(−0.11)	(−0.09)	(0.20)	(−0.22)
*OCC*2	−432.31	−14.33	−463.53	−164.18
	(−1.02)	(−0.30)	(−0.78)	(−0.22)
*OCC*3	−441.26	2.03	−513.92	−213.32
	(−1.37)	(0.10)	(−1.13)	(−0.38)
*OCC*4	−9.77	−53.31	−394.87	−17.66
	(−0.02)	(−1.11)	(−0.83)	(−0.03)
*OCC*5	−176.83	−35.95	−867.42	−229.49
	(−0.62)	(−0.93)	(−2.15)	(−0.46)
*OCC*6	−84.44	−30.80	−541.45	−181.73
	(−0.31)	(−0.83)	(−1.41)	(−0.39)
FTW	56.08	−30.90	−268.52	384.57
	(0.20)	(−0.81)	(−0.68)	(0.79)
*DJ*2	−30.44	−4.89	−98.62	235.02
	(−0.15)	(−0.18)	(−0.39)	(0.68)
*WS*1 / *WS*2	−4.40	−0.0203	10.76	7.95
	(−1.42)	(−0.10)	(2.47)	(1.49)
PP	0.0356	0.00048	0.0176	0.00026
	(1.10)	(0.11)	(0.38)	(0.004)
R^2	0.885	0.975	0.148	0.104
S_e	2910.15	393.84	4092.78	5010.61
df	2772	2772	2773	2773
Mean	4636.34	534.54	657.43	686.28

TABLE A-1 Second Part

Independent Variable	Dependent Variable S1	S2	S3
Constant	345.45	−155.45	−2374.27
SA(t − 1)	−0.0248	−.00052	0.0360
	(−3.46)	(−0.62)	(2.17)
GB(t − 1)			
CS(t − 1)	−0.0160	−0.0717	−0.0687
	(−3.50)	(−9.05)	(−6.47)
OVH	0.00262	0.0318	0.00686
	(0.35)	(2.45)	(0.40)
HMD	−0.0103	−0.0304	−0.0226
	(−1.37)	(2.32)	(−1.29)
NCO	75.64	53.48	−68.05
	(0.87)	(0.35)	(−0.33)
SC1	−273.14	−514.96	−484.81
	(−1.20)	(−1.31)	(−0.92)
SC2	113.66	594.37	603.39
	(0.55)	(1.66)	(1.26)
HD1	45.14	−266.48	276.04
	(0.31)	(−1.07)	(0.83)
HD2	−60.10	16.46	102.32
	(−0.27)	(0.04)	(0.20)
HD3	−168.71	−223.48	−166.99
	(−1.04)	(−0.84)	(−0.45)
WS1	0.0442	0.175	0.295
	(4.64)	(10.63)	(13.35)
WS2	0.00085	−0.245	−0.128
	(0.03)	(−4.62)	(−1.81)
WS3	−0.127	0.00440	0.0172
	(−1.60)	(0.03)	(0.09)
ID	−0.0625	0.301	0.289
	(−1.90)	(5.28)	(3.76)
RI	0.0752	0.0674	0.380
	(1.81)	(0.94)	(3.95)
GI	0.147	0.542	0.657
	(5.45)	(11.64)	(10.53)
BI	0.0497	0.131	0.247
	(4.71)	(0.74)	(10.08)
SS	0.153	−0.317	−0.606
	(0.66)	(−0.79)	(−1.14)
PI	0.0657	0.118	0.207
	(0.82)	(0.86)	(1.12)
OI	0.140	0.254	0.193
	(2.91)	(3.07)	(1.73)
CG	0.135	0.0371	0.266
	(5.98)	(0.95)	(5.07)

TABLE A-1 Second Part (continued)

Independent Variable	Dependent Variable S1	S2	S3
CGH	−0.00581	−0.00182	0.232
	(−0.82)	(−0.15)	(1.41)
CGVH	−0.0109	0.0232	0.0569
	(−0.49)	(0.60)	(1.10)
LI	−157.12	−218.27	91.42
	(−1.01)	(−0.81)	(0.25)
DY	−0.00753	0.0968	0.132
	(−0.59)	(4.41)	(4.49)
IND	0.149	0.160	−0.335
	(1.21)	(0.75)	(−1.17)
A1	−520.00	−989.54	663.74
	(−0.87)	(−0.96)	(0.48)
A2	−259.51	−966.98	141.03
	(−0.48)	(−1.03)	(0.11)
A3	−375.81	−1364.63	−461.37
	(−0.71)	(−1.48)	(−0.37)
A4	337.50	−583.36	702.31
	(0.62)	(−0.62)	(0.56)
EH1	−81.37	423.55	1436.73
	(−0.18)	(0.54)	(1.36)
EH2	248.82	931.47	1667.14
	(1.28)	(1.57)	(2.10)
EH3	171.74	921.26	1038.69
	(0.89)	(2.75)	(2.31)
EH4	11.20	323.06	582.05
	(0.06)	(1.02)	(1.38)
EH5	−39.27	592.84	475.90
	(−0.24)	(2.10)	(1.26)
C1	−1453.52	−2752.60	−2115.44
	(−3.38)	(−3.70)	(−2.12)
C2	−1490.75	−2999.24	−1933.52
	(−3.29)	(−3.83)	(−1.84)
C3	−1440.09	−3817.27	−1945.54
	(−2.81)	(−4.31)	(−1.64)
C4	−2111.85	−1170.24	292.39
	(−2.82)	(−0.90)	(0.17)
C5	−1697.22	−4131.19	−4229.30
	(−1.63)	(−2.30)	(−1.76)
C6	−1386.47	−3276.63	−2868.40
	(−1.49)	(−2.04)	(−1.34)
CC1	599.07	1328.08	−711.01
	(0.56)	(0.72)	(−0.29)
CC2	−991.62	−1509.19	−746.30
	(−2.81)	(−2.48)	(−0.91)

TABLE A-1 Second Part (concluded)

Independent Variable	Dependent Variable S1	S2	S3
CC3	1644.73	−1478.18	−3117.92
	(1.60)	(−0.83)	(−1.31)
DMC	1478.96	2987.83	2453.61
	(3.77)	(4.41)	(2.70)
PE1	353.34	−31.12	−673.63
	(1.41)	(−0.07)	(−1.16)
PE2	−12.92	102.07	−259.96
	(−0.07)	(0.34)	(−0.64)
PE3	56.79	236.02	−404.44
	(0.29)	(0.70)	(−0.89)
PE4	249.78	592.73	95.35
	(1.06)	(1.44)	(0.17)
OCC1	−235.26	649.41	−693.20
	(−0.08)	(0.12)	(−0.10)
OCC2	−412.17	−842.50	−1133.28
	(−0.94)	(−1.11)	(−1.12)
OCC3	−366.62	−854.78	−1069.21
	(−1.10)	(−1.49)	(−1.39)
OCC4	−20.92	−394.35	−433.82
	(−0.06)	(−0.66)	(−0.54)
OCC5	−187.16	−1042.08	−1302.39
	(−0.63)	(−2.03)	(−1.89)
OCC6	−70.85	−586.53	−811.91
	(−0.25)	(−1.20)	(−1.24)
FIW	48.52	−232.76	151.29
	(0.17)	(−0.47)	(0.22)
DJ2	−48.79	−135.87	138.23
	(−0.24)	(−0.38)	(0.29)
WS1/WS2	−4.81	6.14	14.55
	(−1.50)	(1.11)	(1.97)
PP	0.0335	0.0447	0.0357
	(1.00)	(0.77)	(0.46)
R^2	0.071	0.145	0.177
S_e	3029.84	5232.29	7011.81
df	2816	2816	2816
Mean	300.32	957.76	1629.74

TABLE A-2 Estimates for Households Grouped by Wealth Class, Based on CAS Data Set* (*t* ratios in parentheses; for explanation of symbols, see Glossary for Tables A-1 and A-2 above)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3	Wealth Class 1	Wealth Class 2	Wealth Class 3
	Estimates for *SA*			Estimates for *GB*		
Constant	761.33	3498.57	2002.91	−16.83	65.52	−2483.24
SA(*t* − 1)	0.691	0.894	1.000	−0.00285	−0.0049	
	(46.06)	(58.43)	(38.45)	(−1.21)	(−0.27)	
GB(*t* − 1)	0.177	−0.0353	0.0365	1.023	1.011	
	(2.37)	(−0.49)	(0.68)	(87.55)	(118.08)	
CS(*t* − 1)	−0.0211	−0.0627	−0.0369	0.00028	−0.00025	−0.0237
	(−1.34)	(−6.57)	(−1.87)	(1.14)	(−0.22)	(−0.84)
OVH	−0.0122	−0.0524	−0.0331	0.0190	−0.00148	−0.0787
	(−1.99)	(−3.64)	(−0.81)	(1.98)	(−0.14)	(−1.26)
HMD	0.00785	0.0333	0.111	−0.00124	0.00066	0.0191
	(1.19)	(2.49)	(2.42)	(−1.20)	(0.41)	(0.27)
*SC*1	−57.50	−189.69	−1888.42	0.544	27.44	−1633.16
	(−0.45)	(−0.45)	(−0.91)	(0.03)	(0.55)	(−0.51)
*SC*2	−5.13	−169.47	−1229.57	57.72	−40.70	−641.41
	(−0.04)	(−0.48)	(−0.72)	(3.07)	(−0.97)	(−0.24)
*HD*1	37.49	248.58	−777.79	−13.22	18.35	−515.00
	(0.42)	(1.05)	(−0.66)	(−0.96)	(0.65)	(−0.28)
*HD*2	−135.68	−433.31	−116.46	−25.77	39.17	4444.58
	(−1.13)	(−1.01)	(−0.05)	(−1.37)	(0.76)	(1.34)
*HD*3	64.21	−599.33	−797.15	26.91	25.31	−356.25
	(0.68)	(−1.97)	(−6.20)	(1.82)	(0.75)	(−0.18)
*WS*1	0.0307	0.0249	0.0586	0.00178	0.00047	−0.00631
	(3.48)	(1.71)	(1.63)	(1.29)	(0.27)	(−0.11)

WS2	0.0593	0.0154	0.102	0.00173	0.00114	2.068
	(2.70)	(0.33)	(0.40)	(0.50)	(0.21)	(5.83)
WS3	−0.0303	−0.183	−0.154	0.00797	0.00176	0.149
	(−0.54)	(−1.50)	(−0.37)	(0.91)	(0.12)	(1.60)
ID	0.154	0.135	−0.119	−0.00345	0.00820	−0.0121
	(2.77)	(1.05)	(−1.55)	(−0.40)	(0.53)	(−0.71)
RI	−0.00924	0.0600	0.108	−0.00347	−0.00129	−0.00102
	(−0.18)	(0.91)	(0.91)	(−0.44)	(−0.16)	(−0.04)
GI	0.0864	0.0813	0.132	−0.00128	0.00978	0.0747
	(2.36)	(2.07)	(1.41)	(−0.22)	(2.08)	(3.59)
BI	0.0248	0.333	0.0495	0.00128	−0.00092	0.00353
	(2.36)	(1.94)	(1.47)	(0.78)	(−0.45)	(0.47)
SS	0.0109	−0.447	0.277	−0.00897	−0.0260	0.0582
	(0.06)	(−1.19)	(−0.37)	(−0.29)	(−0.58)	(0.35)
PI	0.0177	0.0977	−0.150	−0.00971	0.00677	0.0115
	(0.30)	(8.31)	(−0.34)	(−1.06)	(0.48)	(0.12)
OI	0.102	0.237	0.290	0.00405	0.00235	−0.0401
	(3.43)	(3.21)	(0.51)	(0.87)	(0.27)	(−0.32)
CG	−0.0923	0.0453	0.116	−0.00220	−0.00377	0.00283
	(−1.64)	(0.79)	(1.96)	(−0.25)	(−0.55)	(0.22)
CGH	−0.0215	−0.0598	−0.0405	0.00187	−0.00112	−0.0126
	(−3.36)	(−4.42)	(−1.26)	(1.87)	(−0.70)	(−1.77)
CGVH	−0.0270	−0.0392	−0.0604	−0.00360	−0.00447	−0.00433
	(−0.39)	(−0.81)	(−1.02)	(−0.33)	(−0.07)	(−0.33)
LI	52.64	−634.13	−110.92	6.90	−2.22	487.24
	(0.59)	(−2.33)	(−0.09)	(0.49)	(−0.07)	(1.72)
DY	0.0146	−0.0167	−0.0405	−0.00081	0.00338	0.0292
	(1.64)	(−0.76)	(−1.26)	(−0.58)	(1.28)	(2.31)
IND	−0.154	0.0779	−0.0604	−0.00918	−0.0159	−0.212
	(−2.41)	(0.24)	(−1.02)	(−0.92)	(−0.41)	(−1.11)

TABLE A-2 (continued)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3	Wealth Class 1	Wealth Class 2	Wealth Class 3
	Estimates for *SA*			Estimates for *CB*		
*A*1	−159.95	−11.23	1108.84	17.41	−103.52	88.51
	(−0.33)	(−0.01)	(0.31)	(0.23)	(−0.77)	(0.11)
*A*2	−173.93	−110.54	468.70	−9.53	−46.31	−212.30
	(−0.37)	(−0.13)	(1.98)	(−0.58)	(−0.47)	(−0.40)
*A*3	−145.88	64.83	−1846.23	−16.18	−14.73	−45.05
	(−0.31)	(0.08)	(−0.91)	(−0.22)	(−0.16)	(−0.10)
*A*4	156.33	435.27	37.12	38.19	7.31	176.95
	(0.32)	(0.55)	(0.02)	(0.50)	(0.08)	(0.39)
*EH*1	−273.05	420.92	5211.69	−43.55	−45.36	−886.41
	(0.97)	(0.56)	(1.47)	(−0.99)	(−0.50)	(−1.13)
*EH*2	−78.31	774.21	−2917.81	−1.78	39.16	−324.72
	(−0.40)	(1.25)	(−0.94)	(−0.06)	(0.53)	(−0.47)
*EH*3	−66.37	−129.47	172.81	5.80	48.76	−221.71
	(−0.55)	(−0.40)	(0.31)	(0.31)	(1.25)	(−0.76)
*EH*4	−113.15	−206.13	332.31	22.28	41.79	−148.61
	(−1.00)	(−0.68)	(0.27)	(1.26)	(1.15)	(−0.54)
*EH*5	−30.49	−44.33	−232.97	17.55	13.88	−400.63
	(−0.29)	(−0.17)	(0.22)	(1.08)	(0.44)	(−1.74)
*C*1	−655.00	−673.21	−58,721.95	58.86	−44.47	204.32
	(−3.09)	(−0.55)	(−8.77)	(1.78)	(−0.30)	(0.14)
*C*2	−714.97	−607.68	−60,158.29	40.72	−22.35	149.52
	(−3.09)	(−0.52)	(−9.25)	(1.12)	(−0.16)	(0.10)

C3	−639.09	28.72	−59,568.73	30.80	−6.03	−176.31
	(−2.45)	(0.02)	(−8.10)	(0.75)	(−0.38)	(−0.11)
C4	−862.01	−1162.77		89.03	−123.30	
	(−1.98)	(−0.82)		(1.31)	(−0.73)	
C5	−893.52	137.75		92.30	−5.74	
	(−1.51)	(0.07)		(1.00)	(−0.03)	
C6	−141.27	−275.59	−60,091.77	43.87	39.89	86.58
	(−0.28)	(−0.13)	(−7.49)	(0.54)	(0.16)	(0.05)
CC1	116.16	−218.51	674.54	−15.61	−6.51	−361.70
	(1.39)	(−0.81)	(0.62)	(−0.83)	(−0.20)	(−1.49)
CC2	−1764.60	85.98	−737.72	−47.19	−48.06	416.51
	(−6.88)	(0.16)	(−0.42)	(−1.18)	(−0.73)	(1.06)
CC3	614.83	1367.34	6557.24	92.79	90.60	−703.70
	(0.44)	(0.97)	(1.45)	(0.43)	(0.54)	(−0.70)
DMC	664.83	343.78	58,538.80	−47.16	34.07	17.90
	(3.38)	(3.11)	(9.87)	(−1.53)	(0.26)	(0.01)
PE1	−128.46	871.88	640.66	−0.504	15.20	−300.64
	(−0.86)	(2.02)	(0.39)	(−0.02)	(0.30)	(−0.83)
PE2	−51.46	321.82	−1113.65	−5.86	40.77	−437.50
	(−0.48)	(1.08)	(−0.88)	(−0.35)	(1.14)	(−1.55)
PE3	−22.73	586.51	−786.27	−2.37	8.87	−348.86
	(−0.19)	(1.77)	(−0.59)	(−0.13)	(0.22)	(−1.17)
PE4	−90.19	642.47	391.97	−37.73	−7.65	−501.15
	(−0.63)	(1.57)	(0.25)	(−1.68)	(−0.16)	(−1.44)
OCC2	−214.01	−1254.58		14.70	−117.13	
	(−0.91)	(−1.34)		(0.40)	(−1.05)	
OCC3	−326.90	−621.13	−3472.90	7.89	7.12	900.61
	(−1.74)	(−0.98)	(−0.93)	(0.27)	(0.09)	(1.08)
OCC4	−145.96	276.02	−17.87	−25.18	−105.63	289.70
	(−0.72)	(0.44)	(−0.01)	(−0.79)	(−1.40)	(0.56)

TABLE A-2 (continued)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3	Wealth Class 1	Wealth Class 2	Wealth Class 3
	Estimates for *SA*			Estimates for *GB*		
OCC5	−227.23	−254.49	2628.27	4.52	−105.80	50.55
	(−1.29)	(−0.47)	(1.34)	(0.16)	(−1.40)	(0.12)
OCC6	−227.54	−85.29	3047.63	24.05	−82.18	−170.98
	(−1.37)	(−0.16)	(1.58)	(0.92)	(−1.31)	(−0.40)
FIW	−114.33	569.91	2161.62	−14.41	−68.02	150.05
	(−0.67)	(1.00)	(1.17)	(−0.54)	(−1.00)	(0.36)
DJ2	−9.11	75.73	409.71	4.57	−58.67	−29.64
	(−0.08)	(0.19)	(0.19)	(0.26)	(−1.21)	(−0.62)
WS1/WS2	−2.75	−7.74	0.0243	0.288	−0.306	2.42
	(−1.16)	(−1.57)	(0.002)	(0.77)	(−0.52)	(0.69)
PP	0.170	−0.0752	1.334	0.0213	0.0568	−0.119
	(1.51)	(−0.28)	(1.41)	(1.21)	(1.78)	(−0.57)
R^2	0.649	0.824	0.953	0.845	0.935	0.987
S_e	1333.16	3041.46	4935.56	208.62	362.85	1095.17
df	1479	1013	150	1479	1013	150
Mean	1567.25	6208.15	18,660.43	218.80	573.95	2586.63
	Estimates for ΔCS			Estimates for *IP*		
Constant	60.64	3251.67	4500.08	−1915.80	−3624.09	13,724.47
SA(*t* − 1)	0.0197	−0.0367	−0.0933	0.109	−0.0213	0.137
	(2.39)	(−2.02)	(−1.74)	(2.62)	(−0.95)	(2.27)

GB(*t* − 1)	−0.0109	−0.00639	−0.148	−0.0471	−0.0824	−0.0554
	(−0.27)	(−0.08)	(−1.35)	(−0.23)	(−0.79)	(−0.45)
CS(*t* − 1)	−0.00877	−0.107	−0.222	0.00832	0.0122	0.0148
	(−1.02)	(−9.50)	(−5.47)	(0.19)	(0.88)	(0.32)
OVH	−0.00152	−0.0873	0.00375	−0.00695	−0.00820	−0.0633
	(−0.45)	(−5.12)	(0.04)	(−0.41)	(−0.39)	(−0.66)
HMD	0.00052	0.0866	0.0385	−0.00007	−0.0315	−0.0386
	(0.14)	(5.47)	(0.41)	(−0.004)	(−1.62)	(−0.36)
*SC*1	−37.80	−312.94	−1851.69	−212.72	958.43	−1809.75
	(−0.43)	(0.63)	(−0.43)	(−0.48)	(1.57)	(−0.38)
*SC*2	15.08	679.59	−548.15	344.50	−273.96	245.00
	(0.23)	(1.63)	(−0.15)	(1.03)	(−0.54)	(0.06)
*HD*1	10.87	−256.39	−6635.38	275.57	474.71	2210.11
	(0.22)	(−0.91)	(−2.74)	(1.12)	(1.37)	(0.81)
*HD*2	−40.82	13.34	1025.67	9.31	864.01	−486.39
	(−0.62)	(0.03)	(0.22)	(0.03)	(1.38)	(−0.10)
*HD*3	−20.83	20.47	−105.83	197.72	−110.63	−1493.36
	(−0.40)	(0.06)	(−0.04)	(0.75)	(−0.27)	(−0.50)
*WS*1	0.00817	0.124	0.201	0.0687	0.151	0.158
	(1.69)	(7.19)	(2.70)	(2.80)	(7.13)	(1.89)
*WS*2	0.0248	−0.464	0.134	−0.0739	0.224	−0.144
	(2.05)	(−8.48)	(0.26)	(−1.21)	(3.32)	(−0.24)
*WS*3	−0.00760	0.0735	−0.591	0.0693	−0.0463	−0.504
	(−0.25)	(0.51)	(−0.69)	(0.44)	(−0.26)	(−0.52)
ID	0.0117	0.261	0.451	−0.0912	0.233	0.0563
	(0.38)	(1.70)	(2.84)	(−0.59)	(1.23)	(0.32)
RI	0.0458	−0.0385	−0.247	0.321	0.480	0.119
	(1.64)	(−0.49)	(−1.01)	(2.27)	(4.99)	(0.43)
GI	0.00357	0.140	0.647	−0.0226	0.00360	0.394
	(0.17)	(3.00)	(3.35)	(−0.22)	(0.06)	(1.81)

TABLE A-2 (continued)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3	Wealth Class 1	Wealth Class 2	Wealth Class 3
	Estimates for ΔCS			Estimates for *IP*		
BI	0.0287	0.0300	0.129	0.106	0.168	0.0523
	(4.97)	(1.48)	(1.86)	(3.62)	(6.76)	(0.67)
SS	0.0889	−0.296	−0.743	−0.177	−0.164	−0.534
	(0.08)	(−0.67)	(−0.48)	(0.32)	(−0.30)	(−0.31)
PI	−0.0183	0.0568	1.083	0.521	−0.00707	0.291
	(−0.57)	(0.41)	(1.18)	(3.21)	(−0.04)	(0.28)
OI	−0.0117	0.127	0.443	−0.00268	−0.176	−1.111
	(−0.71)	(1.45)	(0.38)	(−0.03)	(−1.64)	(−0.85)
CC	0.0619	0.0195	−0.154	1.860	0.508	−0.0581
	(2.00)	(0.29)	(−1.26)	(11.87)	(6.12)	(−0.42)
CGH	0.00185	−0.112	−0.0651	−0.00914	0.0439	0.0628
	(0.53)	(−6.99)	(−0.98)	(−0.51)	(2.23)	(0.84)
CGVH	−0.00441	−0.0613	−0.249	−0.124	0.0435	0.0315
	(−0.12)	(−1.07)	(−2.05)	(−0.64)	(0.62)	(0.23)
LI	34.44	−523.79	4596.01	205.68	−162.69	4791.14
	(0.70)	(−1.69)	(1.75)	(0.82)	(−0.41)	(1.62)
DY	−0.00036	0.158	0.201	0.0331	−0.118	0.368
	(−0.07)	(6.05)	(1.71)	(1.34)	(−3.67)	(2.79)
IND	−0.0602	−0.0925	−1.708	−0.0104	−0.349	−5.17
	(−1.72)	(−0.24)	(−0.96)	(−0.59)	(−0.73)	(−2.59)
A1	60.90	448.12	15,637.56	634.29	−23.69	10,921.39
	(0.23)	(0.34)	(2.15)	(0.46)	(−0.01)	(1.33)
A2	96.81	−688.40	5928.93	232.19	−194.34	11,879.81
	(0.37)	(−0.71)	(1.21)	(0.18)	(−0.16)	(2.16)

*A*3	17.59	−893.01	1560.49	85.16	−372.14	10,827.17
	(0.07)	(0.95)	(0.37)	(0.06)	(−0.32)	(2.30)
*A*4	156.85	−391.40	−372.46	−249.10	875.56	8327.93
	(0.58)	(−0.41)	(−0.09)	(−0.18)	(0.75)	(1.73)
*EH*1	−78.51	804.75	3032.59	247.10	−249.40	18,391.90
	(−0.51)	(0.90)	(0.42)	(0.32)	(−0.23)	(2.24)
*EH*2	21.04	522.39	3977.38	1201.37	147.01	5272.58
	(0.19)	(0.71)	(0.62)	(2.20)	(0.16)	(0.73)
*EH*3	8.34	997.75	2953.80	78.73	183.79	4014.66
	(0.13)	(2.59)	(1.09)	(0.24)	(0.39)	(1.32)
*EH*4	64.92	553.14	192.36	382.70	310.63	−22.62
	(1.05)	(1.54)	(0.07)	(1.22)	(0.70)	(−0.01)
*EH*5	39.27	443.25	3118.29	23.52	133.12	−341.66
	(0.69)	(1.40)	(1.46)	(0.08)	(0.34)	(−0.14)
*C*1	97.02	−1569.45	−44,315.95	434.22	201.65	−2443.41
	(0.83)	(−1.08)	(−3.21)	(0.74)	(0.11)	(−0.16)
*C*2	−128.61	−987.68	−54,379.43	471.24	1608.58	−562.68
	(−1.01)	(−0.71)	(−4.06)	(0.73)	(0.94)	(−0.04)
*C*3	−155.26	−2377.43	−61,349.29	848.18	4186.53	−7106.84
	(−1.08)	(−1.53)	(−4.05)	(1.17)	(2.18)	(−0.42)
*C*4	161.81	4980.83		87.55	2922.65	
	(0.68)	(2.96)		(0.07)	(1.41)	
*C*5	−401.38	−2416.46		−1069.18	−48.14	
	(−1.24)	(−1.08)		(−0.65)	(−0.02)	
*C*6	−371.84	−1757.65	−51,428.34	−319.38	914.01	−2794.65
	(−1.31)	(−0.71)	(−3.11)	(−0.22)	(0.30)	(−0.15)
*CC*1	−42.03	51.90	1829.24	393.57	−351.22	−2817.89
	(−0.64)	(0.16)	(0.81)	(1.18)	(−0.89)	(−1.07)
*CC*2	44.08	−1931.05	1157.54	418.99	413.36	4707.38
	(0.31)	(−2.97)	(0.32)	(0.59)	(0.52)	(1.14)

TABLE A-2 (continued)

Independent Variable	Wealth Class 1	2	3	Wealth Class 1	2	3
	Estimates for ΔCS			Estimates for *IP*		
CC3	146.14	1325.03	−5390.44	−1421.69	−934.98	−9725.77
	(0.19)	(0.79)	(−0.58)	(−0.37)	(−0.45)	(−0.93)
DMC	175.26	592.26	48,994.91	−278.31	−56.75	1158.47
	(1.63)	(0.45)	(4.01)	(−0.51)	(−0.04)	(0.08)
PI1	−68.03	−347.98	−1116.06	75.67	270.92	−9499.51
	(−0.83)	(−0.68)	(−0.33)	(0.18)	(0.43)	(−2.50)
PI2	37.38	283.69	3089.25	95.08	166.99	−2581.90
	(0.64)	(0.80)	(1.18)	(0.32)	(0.39)	(−0.87)
PI3	1.54	425.93	4310.27	−268.88	248.13	−4676.98
	(0.02)	(1.09)	(1.56)	(−0.51)	(0.51)	(−1.50)
PI4	12.57	1291.74	1193.08	367.00	26.49	−6016.59
	(0.16)	(2.67)	(0.37)	(0.92)	(0.04)	(−1.65)
OCC2	−215.23	−830.50		302.12	151.35	
	(−1.67)	(−0.75)		(0.46)	(0.11)	
OCC3	−79.29	−903.92	−1965.03	318.49	833.25	−7171.22
	(−0.77)	(−1.21)	(−0.25)	(0.61)	(0.91)	(−0.82)
OCC4	−67.91	−591.27	−758.98	731.81	202.53	−471.93
	(−0.61)	(−0.79)	(−0.16)	(1.29)	(0.22)	(−0.09)
OCC5	−22.64	−529.32	−2127.88	356.32	32.87	368.27
	(−0.23)	(−0.82)	(−0.53)	(0.73)	(0.04)	(0.08)
OCC6	−8.77	−391.48	1394.68	1.94	813.03	−1665.15
	(−0.10)	(−0.63)	(0.35)	(0.004)	(1.06)	(−0.37)
FTW	−111.83	−500.26	2435.44	339.52	−184.24	3485.85
	(−1.20)	(−0.74)	(0.64)	(0.72)	(−0.22)	(0.82)

DJ2	−65.54	72.60	−4651.30	412.60	124.10	−2057.25
	(−1.06)	(0.15)	(−1.05)	(1.33)	(0.21)	(−0.41)
WS1/WS2	−1.90	26.41	−32.92	6.83	11.93	26.17
	(−1.46)	(4.53)	(−1.00)	(1.03)	(1.66)	(0.71)
PP	0.0768	0.518	−1.292	−0.158	−0.409	3.010
	(1.25)	(1.64)	(−0.66)	(−0.51)	(−1.05)	(1.37)
R^2	0.063	0.270	0.532	0.135	0.225	0.293
S_e	737.74	3600.72	10,170.79	3707.34	4431.02	11,459.51
df	1479	1013	150	1479	1013	150
Mean	132.41	725.46	3926.45	388.98	671.97	3091.93
		Estimates for *S1*			Estimates for *S2*	
Constant	746.28	3564.06	2560.42	685.65	6815.70	7060.52
SA(t−1)	−0.311	−0.107	0.00336	−0.292	−0.143	−0.0899
	(−20.45)	(−6.88)	(0.12)	(−17.29)	(−6.38)	(−1.65)
GB(t−1)	0.199	−0.0246	0.0590	0.188	−0.0310	−0.0893
	(2.63)	(−0.34)	(1.05)	(2.24)	(−0.29)	(−0.80)
CS(t−1)	−0.0208	−0.0630	−0.0361	−0.0296	−0.170	−0.258
	(−1.31)	(−6.54)	(−1.74)	(−1.68)	(−12.17)	(−6.25)
OVH	−0.0103	−0.0539	−0.0402	−0.0119	−0.141	−0.0364
	(−2.13)	(−3.71)	(−0.93)	(−1.71)	(−6.69)	(−0.42)
HMD	0.00662	0.0340	0.129	0.00714	0.121	0.167
	(0.99)	(2.52)	(2.66)	(0.96)	(6.15)	(1.74)
SC1	−71.11	−162.22	−1648.97	−108.91	−475.16	−3500.66
	(−0.44)	(−0.38)	(−0.76)	(−0.60)	(−0.77)	(−0.81)
SC2	52.60	−210.17	−1.64	67.68	469.42	−549.78
	(0.43)	(−0.59)	(−0.001)	(0.50)	(0.91)	(−1.52)
HD1	24.28	266.94	−617.17	35.15	10.55	−7252.55
	(0.27)	(1.11)	(−0.50)	(0.35)	(0.03)	(−2.94)

TABLE A-2 (continued)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3	Wealth Class 1	Wealth Class 2	Wealth Class 3
	Estimates for $S1$			Estimates for $S2$		
HD2	−161.76	−394.14	−978.36	−202.58	−380.80	47.32
	(−1.32)	(−0.91)	(−0.46)	(−1.49)	(−0.60)	(0.01)
HD3	91.12	−533.96	−758.06	70.28	−513.49	−863.88
	(0.95)	(−1.86)	(−0.56)	(0.66)	(−1.23)	(−0.32)
WS1	0.0325	0.0254	0.0696	0.0406	0.150	0.270
	(3.62)	(1.73)	(1.84)	(4.09)	(7.00)	(3.58)
WS2	0.0611	0.0165	0.0592	0.0860	−0.448	0.193
	(2.73)	(0.35)	(0.22)	(3.46)	(−6.61)	(0.36)
WS3	−0.0223	−0.181	−0.00547	−0.0299	−0.108	−0.596
	(−0.39)	(−1.47)	(−0.01)	(−0.47)	(−0.60)	(−0.68)
ID	0.151	0.144	−0.131	0.163	0.405	0.319
	(2.67)	(1.10)	(−1.62)	(2.59)	(2.14)	(1.98)
RI	−0.0127	0.0587	0.107	0.0331	0.0202	−0.140
	(−0.25)	(0.88)	(0.86)	(0.58)	(0.21)	(−0.57)
GI	0.0851	0.0911	0.207	0.0887	0.231	0.853
	(2.24)	(2.29)	(2.09)	(2.10)	(4.00)	(4.34)
BI	0.0261	0.0323	0.0530	0.0548	0.0623	0.182
	(2.44)	(1.87)	(1.50)	(4.62)	(2.48)	(2.58)
SS	0.00192	−0.473	0.336	0.0908	−0.769	−0.407
	(0.01)	(−1.25)	(0.42)	(0.41)	(−1.40)	(−0.26)
PI	0.00798	0.104	−0.138	−0.0103	0.161	0.945
	(0.13)	(0.88)	(−0.30)	(−0.16)	(0.94)	(1.01)
OI	0.106	0.240	0.250	0.0943	0.367	0.693
	(3.50)	(3.21)	(1.41)	(2.81)	(3.39)	(0.59)

CC	−0.0945	0.0416	0.119	−0.0326	0.0611	−0.0348
	(−1.65)	(0.72)	(1.91)	(−0.51)	(0.73)	(−0.28)
CCH	−0.0196	−0.0609	−0.0532	−0.0178	−0.173	−0.118
	(−3.02)	(−4.46)	(−1.58)	(−2.47)	(−8.73)	(−1.76)
CCVH	−0.0306	−0.0436	−0.0648	−0.0350	−0.105	−0.314
	(−0.43)	(−0.89)	(−1.04)	(−0.44)	(−1.48)	(−2.54)
LI	59.61	−636.34	376.36	94.05	−1160.13	4972.37
	(0.65)	(−2.32)	(0.28)	(0.93)	(−2.91)	(1.86)
DY	0.0138	−0.0134	−0.0176	0.0135	0.145	0.183
	(1.53)	(−0.60)	(−0.29)	(1.34)	(4.48)	(1.53)
IND	−0.163	0.0620	−0.708	−0.224	−0.0306	−2.416
	(−2.51)	(0.19)	(−0.78)	(−3.10)	(−0.06)	(−1.34)
A1	−142.52	−114.79	1197.55	−81.64	333.33	16,835.09
	(−0.29)	(−0.10)	(0.32)	(−0.15)	(0.20)	(2.27)
A2	−183.51	−156.85	256.41	−86.72	−845.24	6185.32
	(−0.38)	(−0.19)	(0.10)	(−0.16)	(−0.71)	(1.24)
A3	−162.11	50.10	−1891.16	−144.54	−842.90	−330.69
	(−0.34)	(0.06)	(−0.89)	(−0.27)	(−0.73)	(−0.08)
A4	194.49	442.55	214.05	351.32	51.66	−158.42
	(0.39)	(0.55)	(0.98)	(0.64)	(0.04)	(−0.04)
EH1	−316.67	375.69	4326.02	−395.17	1180.44	7358.62
	(−1.11)	(0.49)	(1.16)	(−1.25)	(1.06)	(0.99)
EH2	−80.61	813.48	−3243.07	−59.57	1335.88	734.30
	(−0.40)	(1.30)	(−1.00)	(−0.27)	(1.47)	(0.11)
EH3	−60.58	−80.70	−48.90	−52.24	917.05	2904.89
	(−0.50)	(−0.25)	(−0.04)	(−0.39)	(1.92)	(1.06)
EH4	−90.86	−164.32	183.68	−25.94	388.82	376.05
	(−0.79)	(−0.53)	(0.14)	(−0.20)	(0.87)	(0.14)
EH5	−12.94	−30.46	−633.59	26.33	412.80	2484.70
	(−0.12)	(−0.11)	(−0.58)	(0.23)	(1.06)	(1.14)

TABLE A-2 (continued)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3	Wealth Class 1	Wealth Class 2	Wealth Class 3
	Estimates for *S1*			Estimates for *S2*		
C1	−596.19	−717.53	−58,511.52	−499.17	−2287.00	−102,827
	(−2.77)	(−0.58)	(−8.31)	(−2.09)	(−1.27)	(−7.33)
C2	−674.13	−630.07	−60,018.80	−802.74	−1617.78	−114,398
	(−2.89)	(−0.53)	(−8.78)	(−3.08)	(−0.90)	(−8.40)
C3	−608.27	22.69	−59,740.30	−763.53	−2354.77	−121,089
	(−2.29)	(0.02)	(−7.72)	(−2.59)	(−1.22)	(−7.86)
C4	−773.36	−1285.76		−611.55	3695.05	
	(−1.75)	(−0.90)		(−1.25)	(1.77)	
C5	−800.93	132.01		−1202.31	−2284.48	
	(−1.34)	(0.07)		(−1.81)	(−0.83)	
C6	−97.37	−235.49	−59,982.15	−469.22	−1993.16	−111,411
	(−0.19)	(−0.11)	(−7.11)	(−0.81)	(−0.65)	(−6.63)
CC1	100.79	−225.01	312.83	58.76	−173.11	2142.06
	(0.83)	(−0.82)	(2.71)	(0.43)	(−0.44)	(0.93)
CC2	−1812.15	37.92	−321.17	−1768.06	−1893.13	836.37
	(−6.95)	(0.07)	(−0.17)	(−6.11)	(−2.36)	(0.22)
CC3	707.82	1458.69	5853.09	853.96	2783.72	462.65
	(0.50)	(1.02)	(1.23)	(0.55)	(1.35)	(0.05)
DMC	617.75	377.82	58,549.79	793.01	970.10	107,545
	(3.09)	(0.34)	(9.39)	(3.58)	(0.60)	(8.65)
PE1	−129.01	886.94	340.02	−197.04	538.96	−776.05
	(−0.84)	(2.04)	(0.20)	(−1.16)	(0.85)	(−0.23)
PE2	−57.34	362.58	−1551.09	−19.96	646.27	1538.16
	(−0.53)	(1.20)	(−1.16)	(−0.17)	(1.48)	(0.58)

PE3	−25.11	595.35	−1135.17	−23.57	1021.28	3175.09
	(−0.21)	(1.78)	(−0.80)	(−0.18)	(2.11)	(1.13)
PE4	−127.97	634.91	−109.18	−115.39	1926.66	1083.89
	(−0.88)	(1.54)	(−0.07)	(−0.71)	(3.22)	(0.33)
OCC2	−199.33	−1371.55		−414.56	−2202.04	
	(−0.83)	(−1.45)		(−1.56)	(−1.60)	
OCC3	−319.01	−614.00	−2572.73	−398.30	−1517.91	−4537.77
	(−1.67)	(−0..96)	(−0.65)	(−1.88)	(−1.64)	(−0.58)
OCC4	−171.16	170.40	271.80	−239.08	−420.87	−487.19
	(−0.83)	(0.27)	(0.11)	(−1.04)	(−0.46)	(−0.10)
OCC5	−222.74	−360.29	2678.80	−245.38	−889.60	550.91
	(−1.24)	(−0.65)	(1.30)	(−1.23)	(−1.11)	(0.13)
OCC6	−203.55	−167.47	2876.42	−212.32	−558.94	4271.09
	(−1.20)	(−0.31)	(1.41)	(−1.13)	(−0.72)	(1.05)
FTW	−128.73	501.94	2311.56	−240.57	1.69	4746.99
	(−0.74)	(0.87)	(1.19)	(−1.25)	(0.002)	(0.95)
DJ2	−4.545	17.06	380.07	−70.09	89.66	−4271.21
	(−0.04)	(0.04)	(0.17)	(−0.56)	(0.15)	(−0.95)
WS1/WS2	−2.47	−8.04	2.45	−4.37	18.37	−30.47
	(−1.02)	(−1.62)	(0.15)	(−1.63)	(2.55)	(−0.91)
PP	0.191	−0.0184	1.215	0.268	0.500	−0.0772
	(1.68)	(−0.07)	(1.22)	(2.12)	(1.28)	(−0.04)
R^2	0.278	0.123	0.604	0.236	0.281	0.685
S_e	1355.77	3069.78	5190.81	1503.31	4456.09	10,343.16
df	1479	1013	150	1479	1013	150
Mean	73.20	453.13	1091.03	205.61	1178.59	5017.48

TABLE A-2 (continued)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3
		Estimates for S3	
Constant	−1230.14	3191.64	−6663.98
SA(*t* − 1)	−0.183	−0.164	0.0475
	(−4.21)	(−5.54)	(0.57)
GB(*t* − 1)	0.141	−0.113	−0.145
	(0.65)	(−0.81)	(−0.85)
CS(*t* − 1)	−0.0213	−0.158	−0.243
	(−0.47)	(−8.54)	(−3.85)
OVH	−0.0188	−0.149	−0.0997
	(−1.06)	(−5.35)	(−0.76)
HMD	0.00707	0.0891	0.129
	(0.37)	(3.43)	(0.87)
*SC*1	−321.63	483.26	−5310.40
	(−0.69)	(0.59)	(−0.80)
*SC*2	412.18	195.45	−304.77
	(1.18)	(0.29)	(−0.06)
*HD*1	310.72	485.27	−5042.43
	(1.22)	(1.05)	(−1.34)
*HD*2	−193.27	483.21	−439.07
	(−0.56)	(0.58)	(−0.06)
*HD*3	268.00	−624.12	−2357.25
	(0.98)	(−1.13)	(−0.57)
*WS*1	0.109	0.301	0.428
	(4.28)	(10.64)	(3.71)
*WS*2	0.0121	−0.224	0.0495
	(0.19)	(−2.49)	(4.28)
*WS*3	0.0394	−0.154	−1.100
	(0.24)	(−0.65)	(−0.82)
ID	0.0716	0.637	0.375
	(0.44)	(2.54)	(1.52)
RI	0.354	0.500	−0.0214
	(2.41)	(3.90)	(−0.06)
GI	0.0661	0.234	1.248
	(0.61)	(3.07)	(4.15)
BI	0.160	0.231	0.235
	(5.28)	(6.95)	(2.18)
SS	0.268	−0.933	−0.941
	(0.47)	(−1.28)	(−0.39)
PI	0.511	0.154	1.236
	(3.01)	(0.68)	(0.86)
OI	0.0917	0.190	−0.418
	(1.07)	(1.33)	(−0.23)
CG	1.828	0.569	−0.0930
	(11.21)	(5.14)	(−0.49)

TABLE A-2 (continued)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3
		Estimates for *S*3	
CGH	−0.0269	−0.129	−0.0554
	(−1.45)	(−4.90)	(−0.54)
CGVH	−0.0159	−0.0614	−0.282
	(−0.79)	(−0.65)	(−1.49)
LI	299.73	−1322.83	9763.51
	(1.16)	(−2.51)	(2.39)
DY	0.0466	0.0269	0.551
	(1.81)	(0.63)	(3.02)
IND	−0.328	−0.380	−7.588
	(−1.77)	(−0.60)	(−2.75)
*A*1	552.65	309.63	27,756.53
	(0.39)	(0.14)	(2.45)
*A*2	145.47	−1039.60	18,065.16
	(0.11)	(−0.65)	(2.38)
*A*3	−59.39	−1215.06	10,496.53
	(−0.04)	(−0.79)	(1.62)
*A*4	102.22	926.69	8169.54
	(0.07)	(0.60)	(1.23)
*EH*1	−148.08	931.03	25,750.50
	(−0.18)	(0.63)	(2.27)
*EH*2	1141.80	1482.89	6006.89
	(2.01)	(1.23)	(0.61)
*EH*3	26.49	1100.83	6919.55
	(0.08)	(1.74)	(1.64)
*EH*4	356.76	699.45	353.43
	(1.09)	(1.18)	(0.09)
*EH*5	49.85	545.91	2143.04
	(0.17)	(1.05)	(0.64)
*C*1	−64.95	−2085.33	−105,271
	(−0.11)	(−0.88)	(−4.90)
*C*2	−331.49	−9.18	−114,961
	(−0.50)	(−0.004)	(−5.51)
*C*3	84.66	1831.79	−128,197
	(0.11)	(0.72)	(−5.44)
*C*4	−523.99	6617.72	
	(−0.42)	(2.40)	
*C*5	−2271.49	−2332.60	
	(−1.33)	(−0.64)	
*C*6	−788.59	−1079.13	−114,205
	(−0.53)	(−0.27)	(−4.44)
*CC*1	452.33	−524.33	−675.83
	(1.30)	(−1.00)	(−0.19)
*CC*2	−1349.07	−1479.77	5543.77
	(−1.82)	(−1.39)	(0.97)

TABLE A-2 (concluded)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3
		Estimates for S3	
CC3	−567.72	1848.73	−9263.11
	(−0.14)	(0.67)	(−0.64)
DMC	514.69	913.33	108,703
	(0.91)	(0.43)	(5.72)
PE1	−121.37	809.89	−10,276
	(−0.28)	(0.97)	(−1.95)
PE2	75.11	813.26	−1043.74
	(0.24)	(1.40)	(−0.26)
PE3	−292.46	1269.41	−1501.89
	(−0.85)	(1.98)	(−0.35)
PE4	251.60	1953.15	−4932.69
	(0.61)	(2.47)	(−0.98)
OCC2	−112.44	−2050.69	
	(−0.17)	(−1.13)	
OCC3	−79.81	−684.67	−11,709
	(−0.15)	(−0.56)	(−0.97)
OCC4	492.73	−218.34	−959.13
	(0.84)	(−0.18)	(−0.13)
OCC5	110.94	−856.74	919.17
	(0.22)	(−0.81)	(0.15)
OCC6	−210.38	254.08	2605.92
	(−0.44)	(0.25)	(0.42)
FTW	98.95	−182.56	8232.83
	(0.20)	(−0.16)	(1.39)
DJ2	342.51	213.76	−6328.46
	(1.06)	(0.27)	(−0.92)
WS1/WS2	2.46	30.30	−4.30
	(0.36)	(3.21)	(−0.08)
PP	0.110	0.0908	2.933
	(0.34)	(0.17)	(0.96)
R^2	0.146	0.256	0.549
S_e	3857.45	5902.57	15,825.08
df	1479	1013	150
Mean	594.59	1850.55	8109.41

*Wealth classes are defined as follows:
1: assets less than $25,000;
2: assets between $25,000 and $75,000;
3: assets greater than $75,000.

Glossary for Tables A-3 and A-4 (Consumers Union data set)

DD: holdings of demand deposits
SA: holdings of savings accounts
FA: holdings of financial assets
NW: net worth
MFA: market financial assets
NMFA: nonmarket financial assets
OFA: cash surrender of life insurance + holdings of mortgages and notes of others + personal loans + trust funds
TD: total debt of household
ATY: after-tax family income
DY: expected change in permanent income in 1960
GI: gifts and inheritances
CG: realized capital gains
*A*1, *A*2, *A*3, *A*4: same as in Tables A1 and A2
C1: 1 if youngest child is 2 or under; 0 otherwise
C2: 1 if youngest child is 3 or 4; 0 otherwise
C3: 1 if youngest child is 5 to 9; 0 otherwise
C4: 1 if youngest child is 10 to 14; 0 otherwise
*EH*1: 1 if husband's education is high school or less; 0 otherwise
*EH*2: 1 if husband's education is 3 years or less of college; 0 otherwise
*EH*3: 1 if husband's education is 4 years of college; 0 otherwise
*EH*4: 1 if husband's education is more than 4 years of college; 0 otherwise
*WE*1: 1 if wife's education is 3 years of college or less or secretarial or business school; 0 otherwise
*WE*2, *WE*3, *WE*4: same as for *EH*2, *EH*3, *EH*4 for husband
OCC1: 1 if business proprietor; 0 otherwise
OCC3: 1 if independent professional; 0 otherwise
OCC4: 1 if income earned on commission; 0 otherwise
OCC5: 1 if top management, professional, or administrator; 0 otherwise

*BE*1: $\begin{cases} 1 & \text{if expect business conditions during next 12 months to be much better} \\ 0 & \text{otherwise} \end{cases}$

*BE*2. $\begin{cases} 1 & \text{if expect business conditions to be a bit better} \\ 0 & \text{otherwise} \end{cases}$

*BE*3: $\begin{cases} 1 & \text{if expect business conditions to remain the same} \\ 0 & \text{otherwise} \end{cases}$

*BE*4: $\begin{cases} 1 & \text{if expect business conditions to be a bit worse} \\ 0 & \text{otherwise} \end{cases}$

*BE*5: $\begin{cases} 1 & \text{if expect business conditions to be much worse} \\ 0 & \text{otherwise} \end{cases}$

*BE*6: $\begin{cases} 1 & \text{if expect business conditions to be better} \\ 0 & \text{otherwise} \end{cases}$

*BE*7: $\begin{cases} 1 & \text{if expect business conditions to be worse} \\ 0 & \text{otherwise} \end{cases}$

*PE*1: $\begin{cases} 1 & \text{if expect prices during next 5 years to fall} \\ 0 & \text{otherwise} \end{cases}$

*PE*2: $\begin{cases} 1 & \text{if expect to remain the same during next 5 years} \\ 0 & \text{otherwise} \end{cases}$

*PE*3: $\begin{cases} 1 & \text{if expect inflation of less than 5\% during next 5 years} \\ 0 & \text{otherwise} \end{cases}$

*PE*4: $\begin{cases} 1 & \text{if expect inflation of 5–10\% during next 5 years} \\ 0 & \text{otherwise} \end{cases}$

*PE*5: $\begin{cases} 1 & \text{if expect inflation of 10–15\% during next 5 years} \\ 0 & \text{otherwise} \end{cases}$

*PE*6: $\begin{cases} 1 & \text{if expect inflation of 15–20\% during next 5 years} \\ 0 & \text{otherwise} \end{cases}$

*PE*7: $\begin{cases} 1 & \text{if expect inflation of 25–40\% during next 5 years} \\ 0 & \text{otherwise} \end{cases}$

*PE*8: $\begin{cases} 1 & \text{if expect inflation of more than 40\% during next 5 years} \\ 0 & \text{otherwise} \end{cases}$

*PE*10: $\begin{cases} 1 & \text{if expect prices to increase 0–5\% during next 5 years} \\ 0 & \text{otherwise} \end{cases}$

*PE*11: $\begin{cases} 1 & \text{if expect prices to increase 5–15\% during next 5 years} \\ 0 & \text{otherwise} \end{cases}$

*PE*12: $\begin{cases} 1 & \text{if expect prices to increase 15–40\% during next 5 years} \\ 0 & \text{otherwise} \end{cases}$

*PEL*1: $\begin{cases} 1 & \text{if expect prices to increase 0–25\% during next 10 years} \\ 0 & \text{otherwise} \end{cases}$

*PEL*2: $\begin{cases} 1 & \text{if expect prices to increase 25–40\% during next 10 years} \\ 0 & \text{otherwise} \end{cases}$

*PEL*3: $\begin{cases} 1 & \text{if expect prices to increase 40–100\% during next 10 years} \\ 0 & \text{otherwise} \end{cases}$

*PEL*4: $\begin{cases} 1 & \text{if expect prices to increase more than 100\% during next 10 years} \\ 0 & \text{otherwise} \end{cases}$

*PELR*1: { 1 if expect prices to increase 0–40% during next 20 years; 0 otherwise

*PELR*2: { 1 if expect prices to increase 40–100% during next 20 years; 0 otherwise

*PELR*3: { 1 if expect prices to increase more than 100% during next 20 years; 0 otherwise

U: { 1 if too uncertain to guess about financial prospects over next few years; 0 otherwise

*PEF*1: *PE*1 · *U*

*PEF*10: *PE*10 · *U*

*PEF*11: *PE*11 · *U*

*PEF*12: *PE*12 · *U*

*PEF*8: *PE*8 · *U*

TABLE A-3 **Estimates for All Wealth Classes Combined for Changes in Demand Deposits, Savings Accounts, Financial Assets, and Net Worth, Based on CU Data Set (*t* ratios in parentheses; for explanation of symbols, see preceding Glossary)**

Independent Variable	ΔDD	ΔSA	ΔFA	ΔNW
Constant	546.71	1404.72	4288.60	−3919.98
	(−1.69)			
$FA(t-1)$	−0.00086	0.00199	−0.240	0.0235
	(−3.07)	(1.43)	(−48.92)	(3.72)
$NMFA(t-1)$	−0.00285	−0.134	0.198	−0.116
	(−1.69)	(−16.14)	(6.75)	(−3.07)
$OFA(t-1)$	−0.0121	0.00363	0.255	−0.0355
	(−21.52)	(1.33)	(26.31)	(−2.85)
$TD(t-1)$	0.00065	−0.00480	−0.0799	0.0512
	(1.14)	(−1.72)	(−8.09)	(4.02)
ATY	0.0242	0.0272	−0.00116	0.450
	(5.66)	(1.30)	(−0.02)	(4.71)
$ATY(t-1)$	−0.0189	−0.00054	0.0199	0.0405
	(−3.56)	(−0.02)	(0.22)	(0.34)
$ATY(t-2)$	0.00445	0.0309	0.184	−0.0954
	(1.01)	(1.43)	(2.41)	(−0.97)
DY	−0.00165	−0.00288	0.101	0.0881
	(−0.56)	(−0.20)	(1.97)	(1.33)
GI	0.00152	0.00152	0.0484	0.0765
	(2.08)	(0.43)	(3.85)	(4.72)
$GI(t-1)$	0.0119	−0.00758	0.953	0.663
	(9.75)	(−1.27)	(44.93)	(24.30)
CG	0.00911	0.0155	0.417	−0.170
	(2.80)	(0.97)	(7.41)	(−2.35)
$CG(t-1)$	0.00323	−0.0311	−0.102	0.121
	(1.00)	(−1.97)	(−1.83)	(1.68)
$CG(t-2)$	−0.00905	0.0155	0.207	−0.160
	(−1.85)	(0.97)	(2.44)	(−1.47)
$A1$	−700.37	−1713.70	−6812.75	7355.38
	(−3.31)	(−1.65)	(−1.86)	(1.55)
$A2$	−605.82	−1333.46	−7297.04	−712.35
	(−5.07)	(−2.28)	(−3.52)	(−0.30)
$A3$	−572.04	−1133.70	−6723.25	803.40
	(−4.88)	(−1.98)	(−3.31)	(3.07)
$A4$	−623.00	−1099.61	−3995.90	3045.80
	(−5.25)	(−1.89)	(−1.94)	(1.15)
FS	−0.128	−122.65	100.29	−200.78
	(−0.01)	(−2.68)	(0.62)	(−0.96)
$C1$	8.47	−302.09	−1537.64	−1373.76
	(0.22)	(−1.59)	(−2.28)	(−0.16)
$C2$	9.52	−501.65	−837.43	503.42
	(0.19)	(−2.03)	(−0.96)	(0.45)

TABLE A-3 (continued)

Independent Variable	ΔDD	ΔSA	ΔFA	ΔNW
	Dependent Variable			
C3	3.18	−468.59	300.68	−299.11
	(0.07)	(−2.17)	(0.39)	(−0.30)
C4	78.95	−336.11	−1274.00	−1381.00
	(1.55)	(−1.39)	(−1.44)	(−1.21)
EH1	−51.07	111.05	270.12	−453.80
	(−0.48)	(0.21)	(0.15)	(−0.19)
EH2	−44.39	249.93	1084.78	1084.55
	(−0.42)	(0.49)	(0.60)	(0.46)
EH3	−41.59	253.31	1884.77	1740.17
	(−0.45)	(0.50)	(1.04)	(0.75)
EH4	−43.37	319.73	2001.10	808.93
	(−4.18)	(0.63)	(1.11)	(0.35)
EW1	56.47	585.81	747.99	1719.62
	(1.08)	(2.28)	(0.82)	(1.47)
EW2	16.17	578.30	504.55	615.06
	(0.31)	(2.30)	(0.57)	(0.54)
EW3	35.84	749.18	1929.78	2652.73
	(0.65)	(2.76)	(2.00)	(2.14)
EW4	−2.68	634.93	1891.12	1012.02
	(−0.05)	(2.25)	(1.89)	(0.79)
OCC1	76.94	34.79	3220.82	4629.35
	(1.29)	(0.12)	(3.11)	(3.47)
OCC3	103.31	434.12	1167.75	492.89
	(1.66)	(1.43)	(1.09)	(0.36)
OCC4	77.25	548.18	1994.49	−2776.76
	(0.91)	(1.31)	(1.35)	(−1.46)
OCC5	41.89	75.40	196.24	33.54
	(0.98)	(0.36)	(0.27)	(0.04)
OCC6	−26.89	0.346	142.89	184.07
	(−0.44)	(0.001)	(0.14)	(0.14)
BE1	35.77	−464.05	238.44	3594.82
	(0.27)	(−0.71)	(0.10)	(1.20)
BE2	19.03	57.33	1310.42	2766.47
	(0.27)	(0.16)	(1.05)	(1.73)
BE3	44.04	−78.38	−121.16	1025.68
	(0.64)	(−0.21)	(−0.10)	(0.67)
BE4	96.96	272.59	1155.76	1417.77
	(1.29)	(0.74)	(0.89)	(0.85)
BE5	−134.64	−414.81	−2105.33	−2543.47
	(−0.76)	(−0.48)	(−0.69)	(−1.73)
PE1	200.90	318.19	1097.08	2779.07
	(1.96)	(0.64)	(0.62)	(1.22)

TABLE A-3 (concluded)

Independent Variable	Dependent Variable ΔDD	ΔSA	ΔFA	ΔNW
PE2	−93.96	−479.80	−285.52	−954.66
	(−1.08)	(−1.13)	(−1.90)	(−0.49)
PE3	14.83	−96.12	−32.72	−1394.98
	(0.22)	(−0.29)	(−0.03)	(−0.91)
PE4	7.16	−137.59	472.23	−715.74
	(0.11)	(−0.41)	(0.40)	(−0.47)
PE5	22.78	−279.93	679.34	−1108.47
	(0.31)	(−0.77)	(0.53)	(−0.67)
PE6	−25.61	972.56	2693.85	579.02
	(−0.27)	(2.13)	(1.67)	(0.28)
PE7	−191.91	−142.49	507.02	−644.33
	(−1.24)	(−0.19)	(0.19)	(−0.19)
PE8	−68.91	3308.32	1582.28	−341.55
	(−0.12)	(1.17)	(0.16)	(−0.03)
PEL1	−38.73	19.36	184.98	453.91
	(−0.83)	(0.09)	(0.22)	(0.44)
PEL2	−175.15	−244.25	1104.78	317.19
	(−2.27)	(−0.59)	(0.83)	(0.18)
PEL3	−34.74	−896.05	−1041.80	62.10
	(−0.26)	(−1.36)	(−0.45)	(0.02)
PEL4	206.62	−3377.00	−2346.00	−137.45
	(2.52)	(−0.84)	(−0.17)	(−0.08)
PELR1	23.22	−19.67	383.51	692.61
	(0.59)	(−0.10)	(0.56)	(0.79)
PELR2	77.26	93.18	−272.18	−766.82
	(1.37)	(0.34)	(−0.28)	(−0.61)
PELR3	193.50	831.61	−491.05	1851.20
	(1.82)	(1.60)	(−0.27)	(0.78)
R^2	0.265	0.076	0.492	0.219
S_e	808.43	3957.48	14,010.43	18,061.90
df	4171	4171	4171	4171
Mean	84.96	214.71	1131.51	3634.66

TABLE A-4 Estimates for Households Grouped by Wealth Class,* Based on CU Data Set (*t* ratios in parentheses; for explanation of symbols, see Glossary for tables A-3 and A-4)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3	Wealth Class 1	Wealth Class 2	Wealth Class 3
	Estimates for ΔDD			Estimates for ΔSA		
Constant	50.02	1016.80	684.92	1679.88	628.90	4455.99
DD(*t* − 1)	−0.329	−0.330	−0.142	0.0109	−0.103	−0.0426
	(−16.63)	(−18.23)	(−4.70)	(0.12)	(−1.34)	(−0.26)
SA(*t* − 1)	−0.0316	0.00010	0.0151	−0.867	−0.217	−0.134
	(−3.65)	(0.63)	(1.32)	(−21.09)	(−6.37)	(−2.17)
MFA(*t* − 1)	0.0101	−0.00138	−0.00152	−0.00222	−0.00941	−0.00051
	(2.06)	(−0.95)	(−2.53)	(−0.10)	(−1.53)	(−0.16)
NMFA(*t* − 1)	0.0322	0.00006	−0.00935	0.169	0.0342	−0.0324
	(3.97)	(0.01)	(−1.14)	(4.38)	(1.23)	(−0.73)
OFA(*t* − 1)	0.0308	−0.00460	−0.111	−0.00823	−0.00962	0.00143
	(0.83)	(−1.07)	(−11.01)	(−0.46)	(−0.53)	(0.27)
TD(*t* − 1)	−0.00009	−0.00099	0.00096	−0.0256	−0.00966	−0.00048
	(−0.10)	(−1.03)	(0.67)	(−6.59)	(−2.38)	(−0.05)
ATY	0.00233	0.0126	0.0327	0.0143	0.0143	0.0343
	(1.33)	(3.17)	(3.76)	(1.73)	(0.85)	(0.73)
DY	0.00161	−0.00810	0.0185	0.00728	−0.0274	−0.0125
	(0.69)	(−1.78)	(1.38)	(0.81)	(−1.42)	(−0.17)
GI	−0.00003	−0.00170	0.00775	−0.00029	0.0470	0.00548
	(−0.09)	(−0.31)	(2.07)	(−0.18)	(1.99)	(0.27)
GI(*t* − 1)	0.0322	−0.00463	0.00838	0.0325	−0.0373	−0.00630
	(0.23)	(−0.85)	(2.84)	(0.48)	(−1.62)	(−0.40)
CG	0.00737	0.00503	0.00673	−0.0594	0.209	−0.00108
	(0.67)	(0.27)	(1.03)	(−1.14)	(0.26)	(−0.03)

TABLE A-4 (continued)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3	Wealth Class 1	Wealth Class 2	Wealth Class 3
	Estimates for ΔDD			Estimates for ΔSA		
$CG(t-2)$	−0.00028	0.0137	−0.0161	−0.00875	−0.135	−0.0693
	(0.08)	(0.71)	(−1.27)	(−0.55)	(−1.66)	(−1.01)
$A1$	−100.66	−874.01	−1298.61	−1489.76	−547.99	−3107.37
	(−0.74)	(−1.61)	(−1.10)	(−2.30)	(−0.24)	(−0.48)
$A2$	−4.64	−705.25	−983.12	−1186.26	747.26	−1858.28
	(−0.42)	(−4.20)	(−2.31)	(−2.28)	(1.05)	(−0.81)
$A3$	−18.19	−652.79	−830.05	−1257.23	803.51	−2123.37
	(−0.17)	(−3.98)	(−2.16)	(−2.42)	(1.16)	(−1.03)
$A4$	−7.61	−711.10	−876.25	−1306.96	503.71	−3066.31
	(−0.68)	(−4.27)	(−2.28)	(−2.46)	(7.15)	(−1.47)
$C1$	14.36	−67.87	261.23	287.93	−115.85	−793.60
	(0.53)	(−1.28)	(1.39)	(2.24)	(−0.52)	(−0.78)
$C2$	−3.54	−80.58	308.65	−101.11	−128.63	−1466.28
	(−0.11)	(−1.08)	(1.07)	(−0.68)	(−0.41)	(−0.94)
$C3$	−10.23	−40.72	219.07	140.72	−145.53	−3423.89
	(−0.35)	(−0.67)	(0.98)	(1.02)	(−0.57)	(−2.83)
$C4$	41.08	−34.50	217.46	76.24	−206.63	−1787.72
	(1.20)	(−0.50)	(0.91)	(0.47)	(−0.70)	(−1.38)
$EH3$	16.85	44.15	208.34	35.10	5.58	295.18
	(0.83)	(0.90)	(1.08)	(0.37)	(0.03)	(0.28)
$EH4$	68.61	43.59	−27.38	147.95	295.88	−368.78
	(3.39)	(0.90)	(−0.14)	(1.54)	(1.45)	(−0.35)
$EW3$	4.44	−40.32	163.64	237.86	−62.12	640.48
	(0.22)	(−0.82)	(0.94)	(2.51)	(−0.30)	(0.68)

EW4	20.84	−26.72	−70.86	213.07	−195.28	873.04
	(0.91)	(−0.51)	(−0.37)	(1.96)	(−0.88)	(0.84)
OCC1	−57.92	40.95	−229.80	−161.41	−337.42	−878.54
	(−1.25)	(0.53)	(−1.29)	(−0.74)	(−1.04)	(−0.91)
OCC3	−96.53	153.95	−52.43	−186.10	−293.60	795.59
	(−2.43)	(2.36)	(−0.26)	(−0.99)	(−1.06)	(0.74)
BE6	−4.75	−33.92	26.71	11.58	118.50	−105.95
	(−0.27)	(−0.74)	(0.17)	(0.14)	(0.61)	(−0.12)
BE7	7.10	−12.32	280.94	−48.73	309.48	1427.57
	(0.29)	(−0.23)	(1.47)	(−0.42)	(1.37)	(1.38)
PE1	81.29	−265.60	639.44	401.08	−835.62	2784.71
	(1.25)	(−1.76)	(1.18)	(1.30)	(−1.31)	(0.95)
PEF1	−153.51	1784.37	446.96	−968.71	370.23	−4412.38
	(−1.03)	(4.04)	(0.27)	(−1.36)	(0.20)	(−0.50)
PE10	11.80	−153.61	61.43	−24.83	−709.69	−345.09
	(0.34)	(−1.63)	(0.17)	(−1.49)	(−1.78)	(−0.18)
PEF10	99.56	389.09	−158.25	−233.36	1174.50	421.95
	(1.58)	(2.69)	(−0.37)	(−0.78)	(1.92)	(0.18)
PE11	28.89	−128.92	1.47	−78.77	−677.08	314.25
	(0.83)	(−1.40)	(0.004)	(−0.48)	(−1.73)	(0.17)
PEF11	258.18	−83.31	27.88	−20.32	447.67	2910.98
	(3.66)	(−0.51)	(0.05)	(−0.06)	(0.65)	(0.89)
PE12	9.41	−210.13	−114.12	1.36	−613.47	5979.09
	(0.21)	(−1.78)	(−0.26)	(0.06)	(−1.23)	(2.55)
PEF12	103.79	−72.11	−55.63	−515.89	−0.235	−4672.59
	(0.30)	(−0.14)	(−0.05)	(−0.32)	(−0.0001)	(−0.75)
PE8	−159.12	−96.67	−453.03	2822.21	−768.36	3371.47
	(−0.46)	(−0.18)	(−0.28)	(1.73)	(−0.35)	(0.38)
R^2	0.150	0.234	0.482	0.617	0.099	0.119
S_e	338.72	729.88	1554.46	1607.60	3086.45	8386.33
df	2035	1575	500	2035	1575	500
Mean	57.88	87.62	181.20	7.47	224.72	982.19

TABLE A-4 (continued)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3	Wealth Class 1	Wealth Class 2	Wealth Class 3
	Estimates for ΔFA			Estimates for ΔNW		
Constant	1240.77	165.01	28,058	7382.54	16,998	2346.86
$DD(t-1)$						
$SA(t-1)$						
$MFA(t-1)$	−0.0870 (−2.46)	−0.0438 (−3.88)	−0.264 (−19.89)	−0.244 (−3.00)	−0.728 (−39.37)	0.0188 (1.30)
$NMFA(t-1)$	−0.581 (−33.37)	−0.179 (−7.20)	−0.0924 (−0.99)	−0.653 (−16.32)	−0.366 (−9.13)	−0.198 (−1.95)
$OFA(t-1)$	−0.474 (−17.48)	−0.0635 (−1.89)	0.00493 (0.23)	−0.604 (−9.17)	−0.264 (−4.87)	−0.0167 (−0.60)
$RA(t-1)$				−0.642 (−44.44)	−0.511 (−28.56)	−0.00839 (−0.47)
$TD(t-1)$	−0.0306 (−4.92)	−0.0242 (−3.22)	−0.110 (−3.42)	0.743 (30.30)	−0.523 (−24.91)	0.0179 (0.43)
ATY	0.0425 (3.35)	0.137 (4.51)	−0.214 (−1.11)	0.0352 (1.21)	0.375 (7.62)	0.579 (2.75)
DY	0.0111 (0.81)	0.00540 (0.15)	0.598 (2.00)	−0.00885 (−0.28)	0.0441 (0.78)	−0.387 (−1.18)
GI	−0.00142 (−0.59)	0.0402 (0.92)	0.202 (2.41)	0.00002 (0.004)	0.220 (3.13)	0.374 (4.13)
$GI(t-1)$	−0.0800 (−0.78)	0.0121 (0.29)	0.944 (14.37)	0.373 (1.58)	0.0149 (0.22)	0.528 (7.49)
CG	0.343 (4.29)	0.390 (2.63)	0.270 (1.86)	0.547 (2.98)	0.385 (1.62)	−0.318 (−2.01)
$CG(t-1)$	0.00891 (0.32)	−0.0386 (−0.24)	−0.127 (−0.83)	−0.0200 (−0.31)	0.423 (1.64)	0.0785 (0.47)
$CG(t-2)$	−0.00821 (−0.34)	0.0968 (0.64)	0.365 (1.29)	0.0521 (0.93)	0.158 (0.65)	−0.206 (−0.67)

$A1$	−950.45	−1524.42	−10,304	−1708.36	−5309.14	86,727
	(−0.96)	(−0.36)	(−0.39)	(−0.75)	(−0.78)	(3.04)
$A2$	−299.87	−43.10	−15,266	−609.89	−2168.31	8634.54
	(−0.38)	(−0.33)	(−1.61)	(−0.33)	(−1.03)	(0.84)
$A3$	−167.78	−11.69	−18,805	586.31	−1355.34	10,009
	(−0.21)	(−0.01)	(−2.20)	(0.32)	(−0.66)	(1.08)
$A4$	88.90	432.82	−9762.59	1262.86	2747.04	11,665
	(0.11)	(0.33)	(−1.13)	(0.68)	(1.31)	(1.25)
C1	278.30	−545.84	−8153.33	415.74	301.85	−12,210
	(1.42)	(−1.31)	(−1.95)	(0.92)	(0.45)	(−2.70)
C2	−77.30	133.97	−479.75	133.71	956.39	2603.29
	(−0.34)	(0.23)	(−0.07)	(0.26)	(1.01)	(0.38)
C3	249.50	148.79	2348.75	16.95	260.81	−7038.85
	(1.18)	(0.31)	(0.55)	(0.35)	(0.34)	(−1.30)
C4	187.16	28.78	−5309.75	1404.86	748.85	−13,691
	(0.75)	(0.05)	(−0.99)	(2.46)	(0.85)	(−2.36)
$EH3$	271.65	713.98	2348.75	146.65	2443.50	2264.80
	(1.85)	(1.85)	(0.55)	(0.44)	(3.93)	(0.49)
$EH4$	447.11	771.67	3582.64	−207.94	1625.70	−1850.40
	(3.05)	(2.04)	(0.83)	(−0.62)	(2.68)	(−0.40)
$EW3$	216.49	−242.77	7063.62	−21.52	486.26	9066.04
	(1.49)	(−0.63)	(1.82)	(−0.06)	(0.79)	(2.15)
$EW4$	177.33	357.98	6294.66	489.61	333.74	2556.54
	(1.06)	(0.87)	(1.46)	(1.28)	(0.51)	(0.55)
OCC1	−560.35	256.15	−490.53	−3133.21	1687.18	10.070
	(−1.67)	(0.43)	(−0.12)	(−4.05)	(1.68)	(2.26)
OCC2	−583.16	−568.83	−2363.96	−1858.70	1937.04	−3071.92
	(−2.02)	(−1.11)	(−0.53)	(−2.81)	(2.33)	(−0.64)
$BE6$	−51.01	431.42	4784.18	−23.03	310.51	8253.70
	(−0.40)	(1.21)	(1.34)	(−0.08)	(0.54)	(2.13)
$BE7$	−219.36	186.32	8741.00	−718.60	544.33	2387.16
	(−1.23)	(0.45)	(2.04)	(−1.75)	(0.81)	(0.52)
$PE1$	340.65	−308.99	7065.49	1262.33	−1882.91	15,323
	(0.72)	(−0.26)	(0.58)	(1.16)	(−0.99)	(1.17)

TABLE A-4 (concluded)

Independent Variable	Wealth Class 1	Wealth Class 2	Wealth Class 3	Wealth Class 1	Wealth Class 2	Wealth Class 3
	Estimates for ΔFA			Estimates for ΔNW		
*PEF*1	−351.32	−638.54	−18,605	329.23	3753.77	−47,148
	(−0.32)	(−0.18)	(−0.51)	(0.13)	(0.68)	(−1.19)
*PE*10	350.39	779.62	−1809.53	830.17	−162.78	−9232.82
	(1.37)	(1.06)	(−0.53)	(1.42)	(−0.14)	(−1.08)
*PEF*10	93.77	1861.36	−12,376	−1301.99	−387.71	9559.18
	(0.21)	(1.64)	(−1.32)	(−1.24)	(−0.21)	(0.94)
*PE*11	233.85	375.59	3304.51	589.32	−784.19	−1495.44
	(0.93)	(0.52)	(0.43)	(1.02)	(−0.67)	(−0.18)
*PEF*11	−134.83	1471.24	−12,935	1478.51	374.30	−10,935
	(−0.26)	(1.15)	(−0.95)	(1.25)	(0.18)	(−0.75)
*PE*12	304.20	551.76	15,415	1001.60	95.56	2585.52
	(0.93)	(0.60)	(1.59)	(0.13)	(0.06)	(0.25)
*PEF*12	2722.25	−543.80	−30,302	2773.71	−3046.66	−20,671
	(1.10)	(−1.32)	(−1.17)	(0.49)	(−0.46)	(−0.74)
*PE*8	802.25	−352.90	−7021.28	−3964.08	−3380.51	−22,752
	(0.32)	(−0.09)	(−0.19)	(−0.69)	(−0.51)	(−0.57)
R^2	0.429	0.075	0.604	0.574	0.595	0.366
S_r	2460.47	5721.04	34,706.74	5652.61	9199.44	37,525.14
df	2037	1577	502	2036	1576	501
Mean	329.52	1251.56	3857.97	665.55	2325.72	18,980.49

*Wealth classes are defined as follows:
1. assets less than $25,000;
2. assets between $25,000 and $75,000;
3. assets greater than $75,000.

APPENDIX B

Definitions of Variables and Sources of Data for Time Series Analysis

The variables used in the time series analysis in Section 6 are defined as follows:*

PS = personal saving from the National Income Accounts (NIA) + credits from government insurance + capital gains dividends. Sources: NIA and flow-of-funds accounts (FOF).

NS = net saving from FOF, defined as *PS* + net investment in durable goods. Source: FOF.

GS = gross saving, defined as *NS* + capital consumption (i.e., depreciation on residential dwellings, durable goods, and the plant and equipment of nonprofit organizations). Source: FOF.

GI = gross investment, defined as the sum of capital expenditures and net financial investment. Source: FOF.

CE = capital expenditures, defined as the sum of expenditures for durable goods, net purchases of residential housing, and expenditures for plant and equipment by nonprofit organizations. Source: FOF.

NFI = net financial investment, defined as the difference between the net acquisition of financial assets and the net increase in liabilities. Source: FOF.

CD = expenditures for durable goods. Source: FOF.

HN = net purchases of residential housing + expenditures for plant and equipment by nonprofit organizations. Source: FOF.

NAF = net acquisition of financial assets. Source: FOF.

NIL = net increase in liabilities. Source: FOF.

DD = holdings of demand deposits and currency, seasonally adjusted.† Source: FOF.

SA = holdings of savings accounts and time deposits. Source: FOF.

CC = end-of-period level of consumer debt, seasonally adjusted, defined as the sum of installment debt and other consumer debt. Source: FOF.

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*All data, unless otherwise noted, are expressed in billions of current dollars. Quarterly flows are seasonally adjusted at annual rates. Stocks are seasonally adjusted where noted.

†*DD* (as also *SA* and *CC*) was constructed from quarterly *unadjusted* flows beginning from year-end levels. Seasonal adjustment was then effected by regression on dummy variables.

ID = end-of-period level of installment debt. Source: FOF.

C = personal consumption expenditures on nondurables and service, net of NIA imputations. Source: NIA.

SH = net stock of housing (NSH)—mortgage debt (MD). NSH is constructed as follows:

$$NSH_t = 0.995\, NSH_{t-1}(PH_t / PH_{t-1}) + 0.9975\, H_t$$

where:

PH = implicit deflator for residential construction (source: NIA)
H = net purchases of residential housing (source: FOF)

t_0 was taken as 1952:4, with NSH_0 = \$123.8b, obtained by dividing depreciation on housing (from FOF) for 1952:4 by 0.02. Source for MD: FOF.

SD = net stock of durable goods, constructed as follows:

$$SD_t = 0.96\, SD_{t-1}(PD_t / PD_{t-1}) + 0.98\, CD_t$$

where:

PD = implicit deflator for durable goods from NIA

SD_0 = \$163.75b, obtained by dividing depreciation on durable goods (from FOF) for 1952:4 by 0.16.

SB = market value of holdings of corporate shares and bonds (defined as sum of holdings of corporate and foreign bonds, investment company shares, and other corporate shares), seasonally adjusted. The quarterly series is obtained by interpolating year-end levels (from FOF) by the Standard and Poor Index of Stock Prices.

LP = sum of labor and property income in NIA less NIA imputations. Source: tables 2.1 and 7.3 of NIA.

TP = transfer payments to individuals. Source: Table 2.1 of NIA.

SI = personal contributions to social insurance. Source: Table 2.1 of NIA.

T = personal tax and nontax payments less NIA imputations. Source: tables 2.1 and 7.3 of NIA.

PE = price expectations, defined as $(x - y) / (x + y)$, where:

x = proportion of families expecting prices to increase in next 12 months.

y = proportion of families expecting prices to decrease in next 12 months.

Missing quarters have been filled in by linear interpolation. Source: Survey Research Center, University of Michigan (data actually used here provided by William Dunkelberg of Stanford University).

$$PA = \frac{1}{4}\left[\sum_{i=0}^{3} (P_{t-i} - P_{t-i-1}) / P_{t-i-1}\right] \cdot 100$$

where:

P = implicit deflator for personal consumption expenditure from NIA.

$A1$ = percentage of population of age 20 to 30. Sources: U.S. Bureau of the Census, *Current Population Reports*, Series P-20 and P-25, various issues; U.S. Department of Health, Education and Welfare, *Vital Statistics of the U.S.A.*, various issues. Mid-year estimates converted to quarterly by linear interpolation.

$AA1$ = percentage of population of age 20 to 25. Source: Same as for $A1$.

$A2$ = percentage of population of age 30 to 40. Source: Same as for $A1$.

$AA2$ = percentage of population of age 25 to 40. Source: Same as for $A1$.

$A3$ = percentage of population of age 40 to 50. Source: Same as for $A1$.

$A4$ = percentage of population of age 50 to 65. Source: Same as for $A1$.

NOTES

1. See Gibson (1970), Pyle (1972), and Sargent (1972, 1973).
2. See Gordon (1970, 1971), Turnovsky (1972), Turnovsky and Wachter (1972), and de Menil and Bhalla (1973).
3. The recent empirical literature, as far as I am aware, consists of two papers by Juster and Wachtel (1972a, 1972b).
4. Henceforth, these will be referred to as the CU and CAS samples, respectively.
5. The effect of price expectations on total saving will clearly depend on the definition of saving being used. In the discussion to follow, I shall, unless specified otherwise, view saving as consisting of financial saving plus net investment in real assets.
6. As Katona (1960) puts it:

   Most people hold that the future is uncertain; they speak of possible emergencies such as accidents, illness, unemployment, or bad times as their reasons for accumulating reserve funds (p. 95). See also Juster and Wachtel (1972a, 1972b).
7. This will be referred to as the K-J (for Katona and Juster) argument.
8. See Mirman (1971), Sandmo (1970), Levhari and Srinivasan (1969), and Leland (1968).
9. Most of the empirical evidence is based on survey data. See, in particular, Mueller (1959), Katona (1960), and Juster and Wachtel (1972a, 1972b).
10. I enclose "best" in quotation marks because the particular point estimate given will probably vary depending on the shape of the underlying distribution. The mean undoubtedly will be provided by respondents where the distribution is symmetrical; however, if the distribution is skewed, it will more likely be the mode.
11. This model can be rigorously derived from the adaptive expectations framework of Nerlove (1958) and Muth (1961) on the assumption that the distribution of price expectations is normal and the additional assumption that the information provided by p^e is combined with that provided by p in accordance with Bayes theorem. See Turnovsky (1969).
12. For attempts to infer σ^2 from the variation of expectations across households, see de Menil and Bhalla (1973).
13. The model about to be described takes its roots in the state-adjustment model of Houthakker and Taylor (1970) as applied to aggregate consumption and saving (see especially Chapter 7).
14. The objective state variables will also include demographic characteristics, which for ow are put aside.
15. See Duesenberry (1949), Brown (1952), and Houthakker and Taylor (1970).
16. The state variables incorporating expectations are excluded because it does not make any sense to speak of desired relationships connecting them with income. On the contrary, they, along with income and other market quantities, are movers of the system.
17. If, in line with the view of Katona and Juster, price expectations should affect saving only through their impact on consumer confidence, then λ_2 will be equal to zero. However, this is an extreme (and to me implausible) reading of Katona and Juster.
18. See Houthakker and Taylor (1970, Chapter 7) and Brown (1952).
19. The majority of equations tabulated, however, include income of the current year only.
20. One such set for the five-year expectations in the CU sample is as follows:

    d_1: prices expected to fall
    d_2: prices expected to increase 0 to 5 per cent
    d_3: prices expected to increase 5 to 15 per cent
    d_4: prices expected to increase 15 to 40 per cent
    d_5: prices expected to increase more than 40 per cent
    d_6: too uncertain to say

21. However, the use of dummy variables is not without cost. For in estimation, one of the dummy variables must be excluded, requiring the coefficients on the dummy variables remaining to be interpreted as deviations from the coefficient of the dummy variable that is left out. Ordinarily, this last coefficient, which is absorbed into the equation's constant term, is recovered through the assumption that the coefficients for the entire group of dummy variables sum to zero. In the present context, however, such an assumption is clearly unwarranted, whence the excluded coefficient cannot be recovered. Thus although the overall effect of price expectations can be tested (through an analysis of covariance), the effects of individual intervals of expectations can only be tested relative to one another.
22. Except for that implicit in the response "too uncertain to say" in both samples.
23. The validity of this procedure requires, of course, that households answering "too uncertain to guess" for price expectations and financial prospects do not form identical sets.
24. This being the case, it can be argued that it would have been better to group households by the characteristics involved and then estimate separate equations for each group. However, this would have, in the first place, put distressingly severe demands on my limited computer budget, and, in the second place, resulted in many cells with a meager count of households.
25. For a description of the survey, see Juster, McNeil, and Stoterau (1969).
26. This is not to imply that second and subsequent waves of interviews cannot be analyzed. They can, but the model employed must be simpler than the one used here.
27. The only exception is the stock of housing, which has been computed on the basis of original purchase price. Unrealized capital gains (or losses) through the end of 1967 are then included as a separate predictor.
28. After the equations with the entire sample were estimated, I found that some households had missing data for some variables and that a missing observation correlation matrix had been used in the calculations. In the equations for the separate groups, all households with missing data were excluded altogether. This reduced the number of households in the separate group equations to 2,815.
29. For a description of characteristics and a discussion of the quality of information of this survey, see Cagan (1965).
30. Between 1958 and 1963, the horizon covered by the expectations in Table 2, the CPI increased 5.6 per cent.
31. The CAS equations are listed in tables A-1 and A-2 in Appendix A, and the CU equations are given in tables A-3 and A-4.
32. Notice that the R^2's for the equations for savings accounts (*SA*) and government bonds (*GB*) in tables A-1 and A-2 are extremely high given that the observations refer to households. These high *R*'s result primarily from the presence of $SA(t-1)$ and $GB(t-1)$ as predictors, as is evident from the *t* ratios for these variables. The rationale for including $SA(t-1)$ and $GB(t-1)$ as regressors is to allow for the dynamic effects of stock adjustment. However, in the present context, it is clear that these variables also reflect idiosyncracies of individual households. Households vary in how they structure their portfolios, not just because of differences in expectations and objective circumstances, but also because of factors unique to themselves. In the absence of variables that allow directly for these unique factors, they will tend to be reflected in $SA(t-1)$ in the equation for *SA* and $GB(t-1)$ in the equation for *GB*. This being the case, the inclusion of these two quantities serves to clarify the estimates of the coefficients of the other variables. However, it is clear that it would be misleading (indeed, incorrect) to interpret the coefficients of $SA(t-1)$ and $GB(t-1)$ as reflecting purely dynamic phenomena.

33. The entry for *SA* under *PE1* in Table 3, for example, indicates that, ceteris paribus, households expecting prices to increase by less than 2 per cent added, on the average, $348.63 more in savings accounts than households expecting prices to increase 2–4 per cent.
34. The negative coefficient in the equation for ΔCS might seem an anomaly; however, to flee the stock market in the face of reduced confidence in the future seems perfectly sensible behavior.
35. Among other things, this casts doubt on the assumption, implicit in the equations in Table A-1 and which underlie Table 3, that the structure being estimated is homogeneous across wealth. The proper procedure would be to test this assumption as a hypothesis in an analysis of covariance. However, the disparity of standard errors of the estimate (see the bottom of Table A-2) suggests that the error variance is itself not constant across households, and in view of this, I have refrained from undertaking a formal analysis of covariance. At a minimum, it would appear that the equations in Table A-1 for the sample as a whole may be plagued by heteroscedasticity.
36. Before leaving the CAS equations, it should be mentioned that if price expectations during 1966–1968 did not change (or else changed very little) from one year to the next, their effect, for the reason cited in Footnote 32, could then be reflected in the lagged values of the dependent variable in the equations for *SA* and *CB*. As a test of whether this might be the case, equations for *SA* and *CB* were estimated with $SA(t-1)$ and $CB(t-1)$ excluded as predictors. The coefficients of the price expectations variables underwent some changes, but their significance as a group did not. Consequently, whatever the reason for the weak effect of price expectations in these equations, it cannot be attributed to collinearity of the price expectations with the lagged dependent variables.
37. The decision to forego exploration of the ten- and 20-year horizons in the equations with households grouped by wealth was prompted strictly by budgetary considerations.
38. See the end of Table 7 for precise definitions of these variables. There is no *PEF8* corresponding to *PE8*, because there were no households in the sample with expectations of more than 40 per cent inflation (over the next five years) *and* too uncertain to assess their financial prospects.
39. See the discussions surrounding expressions 6 and 10.
40. Other analyses of the Flow of Funds data include Houthakker and Taylor (1970), Motley (1970), and Wachtel (1972).
41. No attempt has been made to include state variables representing the psychological stocks arising from habit formation in consumption. To do so would require formulating a model in which saving and consumption are determined jointly, which is beyond the scope of the present effort.
42. The question asked respondents is whether they expect the prices of things they buy in the next twelve months to go up, go down, or remain the same. Prior to 1959, the "things" in question referred to household goods, appliances, and clothing. Beginning in 1959 reference was to the things that the household buys in general. For a discussion of the effect of this change, see Juster and Wachtel (1972a). Beginning in 1966, households were asked to provide point estimates of their expectations. Prior to this, they were asked simply whether they expected prices to decrease a lot, decrease a little, remain the same, increase a little, or increase a lot. Unlike Juster and Wachtel (1972a, 1972b) or de Menil and Bhalla (1973), I have not attempted to convert the pre-1966 data to point estimates.
43. Complete definitions are given in Appendix B.
44. Although *PE* is missing from the equation explaining the level of demand deposits, the variable's impact, when included as a predictor, was negative, but had a *t* ratio less than

1. When *PE* was included in the equation for savings accounts, on the other hand, its coefficient was positive, but again with a *t* ratio less than 1.

45. However, this absence may be more apparent than real because of an extremely strong trend underlying the dependent variable, which led to the exclusion of the beginning-of-period level of savings accounts from the equation finally estimated.
46. There is one other important implication of the way that capital gains are treated in the National Income Accounts. Although realized capital gains are not included in personal income, taxes on the capital gains are included in personal taxes. Disposable income —and therefore NIA saving—is thus reduced by the amount of the tax. This can account for the coefficient on *T* in the equations for total saving, which is larger (in absolute value) than the one on *LP*.
47. See Modigliani (1971).
48. For a discussion of the MPS methodology, see Modigliani (1971, p. 13).
49. For a model of aggregate consumption and saving that takes the extension of consumer credit as its point of departure, see Burress (1972).
50. One extenuating circumstance may be the use of a fixed-weight distributed lag when one of variable weights is in order.
51. The differences between the model used here and the one in the BPEA paper are as follows: (1) only NIA personal saving was analyzed there; (2) wealth is disaggregated here and the components introduced explicitly as predictors; (3) capital gains were ignored in the BPEA paper: (4) the BPEA model also ignored expectations and the age structure of the population; (5) the saving and income data used here are free of imputations; and (6) the data used in the BPEA data were expressed in 1958 dollars.
52. Needless to say, it cannot be deduced from aggregate time series data alone whether the higher observed short-run marginal propensity to save out of transfer income is intrinsic to transfer income, or whether it is a phenomenon arising from aggregation across households with different marginal propensities to save. The negative coefficient on *TP* in the equation for capital expenditures, though, suggests that it might be the latter. It was hoped at the outset that the results from the CAS data set would shed some light on this question, but this has not been the case.
53. However, this result is in keeping with an extended version of the life-cycle model in which family composition as well as age is taken into account. See Stafford and Dunkelberg (1969).
54. I am grateful to Donald Heckerman of the University of Arizona for undertaking this analysis.

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