NBER WORKING PAPER SERIES

PRICE EXPECTATIONS AND HOUSEHOLDS' DEMAND FOR FINANCIAL ASSETS

Lester D. Taylor*

Working Paper No. 31

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.
261 Madison Avenue
New York, N.Y. 10016

January, 1974

Preliminary; Not for Quotation

* University of Michigan

CONTENTS

Price Expectations and Households' Demand for Financial Assets*

Lester D. Taylor
University of Michigan

I. Introduction

With the inflationary excesses beginning in 1966 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, in contrast, has received relatively little attention[3/], especially at the micro level, and the present effort is addressed to this void.

---

* This is part of a National Bureau of Economic Research study of the effect of inflation on the country's financial institutions that has been funded by the American Life Insurance Association. The study is not an official NBER publication as it has not yet been reviewed by the NBER's Board of Directors. The research reported here has also been financed in part by the National Science Foundation. I am indebted to Phillip Cagan, Donald Farrar, Donald Herkerman, F. Thomas Juster, Robert Lipsey, Frank Stafford, Paul Wachtel, and Daniel Weiserbs for comment and criticism, to Philippe Rouzier for research assistance, to Bruce Ladwig and Richard English for programming the computations, and to Elsa Bermudez and Donna Hoff for secretarial assistance.

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).

More specifically, the paper's primary purpose is to investigate whether it is possible to discern empirically a 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 that have been analyzed 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 1960's.[4/] The year of reference is 1959 for the CU sample and 1967 for the CAS sample. In addition to having reasonably detailed breakdowns of the household's balance sheet, both of these data sets contain data on income and family characteristics together with explicit information on price expectations. Although they refer only to the long term, the price expectations data are especially detailed in the CU sample, for respondents were questioned regarding their expectations of changes in the level of consumer prices for 5, 10, and 20 years in the future. CAS respondents, in contrast, were asked for their expectations only over the next 12 months.

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, while clearly of interest in its own right, is outside the scope of the present task; the maintained hypothesis throughout is that households take seriously the expectations

---

4/ Henceforth, these will be referred to as the CU and CAS samples, respectively.

they express, whatever these are and whether or not they appear 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 with respect to the future and that this in turn leads to increased current saving.

Section III 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 can be carried varies between the data sets. Description of the two micro data sets occupies Section IV.

Sections V and VI are devoted to presentation of empirical results. The results deriving from the micro data sets are discussed in Section V, while the time-series results are presented in Section VI. Finally, Section VII provides an overall assessment of the results and offers some suggestions for future research.

II. Theoretical Considerations

In analyzing the effect of price expectations on a household's saving, there are two separate questions to be kept in mind, namely, (1) the impact of price expectations on the overall amount saved and (2) the differential impact of price expectations on the separate components of the household's balance sheet. On the assumption 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, it is clear that, because yields are, in general, not affected uniformly by inflation, the rational household will adjust its portfolio whenever there is a change in its price expectations. Indeed, it is quite possible for there to be substantial portfolio restructuring even though the impact of inflation on the overall level of saving is nil. Moreover, it is also clear that we should expect the impact of price expectations to vary, even for the same dependent variable, depending upon the time horizon over which the expectations are measured and, for horizons of short duration, depending upon 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, while 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 instance, contradictory. There is the old traditional idea 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. While 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 the future goods, 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 of the impacts will have been fully discounted and embodied in current prices, interest rates, etc.

In contrast with the traditional view is a view that is rooted more in psychology and sociology than in economics, but which is increasingly gaining a following among economists, namely, that an increase in prices (anticipated or not) will lead to a reduction in spending and an increase in saving[5/]. 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 and this in turn leads to an increase in saving[6/]. Because it has a strong theoretical foundation[7/] in additon to being a well established result empirically[8/], the second part of the K-J argument, i.e., that saving is negatively related to uncertainty of 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

---

5/ 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 (pp. 95).

See also Juster and Wachtel (1972a, 1972b).

6/ This will be referred to as the K-J (for Katona and Juster) argument.

7/ See Mirman (1971), Sandmo (1970), Levhari and Srinivasan (1969), and Leland (1968).

8/ Most of the empirical evidence is based on survey data. See in particular, Mueller (1959), Katona (1960) and Juster and Wachtel (1972a, 1972b).

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 rising real income, even though the two are regarded as equally probable. In short, consumers may be more concerned that price inflation will erode their 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 first appearance, 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 7.

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.[9] Moreover, it also is plausible to assume that the extent to which price expectations actually influence a household's decisions will depend upon 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 much uncertainty.

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

---

9/ 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.

weighted average of its best-guess future price level p^e and the current price level p, viz:

$$p^* = g(\sigma^2)p^e + [1 - g(\sigma^2)]p, \tag{1}$$

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 $g(\infty) = 0$. p^* will thus be near p^e for σ^2 small, but near p for σ^2 large[10/]. Implementation of this model requires, of course, knowledge of σ^2. While 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[11/].

As was noted at the beginning of this section, we should expect the impact of price expectations to be different depending upon the length of the horizon over which the expectations are measured and depending upon whether price increases are expected to be permanent or only temporary. The traditional view -- i.e., that expected inflation leads to a substitution away from money -- seems most relevant to extended horizons 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 horizons of 5, 10, and 20 years, while in the

10/ 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).

11/ For attempts to infer σ^2 from the variation of expectations across households, see de Menil and Bhalla (1973).

CAS sample they are confined to a horizon of 12 months. (The time-series expectations also refer to a horizon of 12 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.

III. 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[12/]. In symbols, we can write

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

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

The state variable encompass a variety of phenomena, some objective and some subjective. Represented in the former will be items from the household's balance sheet -- stocks of durable goods and housing, saving accounts, level of consumer debt, etc.[13/] 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

---

12/ 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).

13/ The objective state variables will also include demographic characteristics which for now are put to the side.

market conditions, and possibly the mere passage of time. The subjective state variables, on the other hand, will also reflect decisions in the past, 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 is well-known to characterize important segments of consumption, particularly expenditures on services.[14/]

The objective state variables will change:

a). In response to current saving as assets are bought and sold and liabilities are increased or decreased;

b). With the passage of time through depreciation and technological obsolescence; and

c). In response to inflation, changes in the market rate of interest, and changes in the earning capacity of physical assets.

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

a). Current consumption of nondurables and services;

b). Current depreciation of physical assets; and

c). 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.

That objective state variables and the subjective state variables

---

14/ See Duesenberry (1949), Brown (1952), and Houthakker and Taylor (1970).

that do not incorporate expectations summarize the influence of the past and the objective present on the household's saving decisions, while the state variables reflecting expectations provide links to the future.[15/] 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 consumption (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 quantities, w represents an objective state variable, while 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, while the expectational quantities, 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 horizon.) We naturally expect β_1 to be negative, and γ_1 and λ_3 to be positive. The parameters γ_2 and λ_1 can be of either sign, and, as we have already noted, the same is true of

---

15/ Depending upon one's theoretical predilections, the "future" in this context can be made as precise, or left as vague, as desired.

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, must be considered movers of the system.

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.[16/] Finally, because consumption, on balance, is subject to habit formation[17/] 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 $\dot{w} = \dot{s} = 0$. In long-run equilibrium, the state variables w and s will be in desired relationships with income, and y and c, from (4) and (5), will be given by

16/ If, in line with the view of Katona and Juster, price expectations should only affect saving through their impact on consumer confidence, then λ_2 will be equal to zero. However, this is an extreme (and to me implasuible) reading of Katona and Juster.

17/ See Houthakker and Taylor (1970, Chapter 7) and Brown (1952).

(7) $\hat{s} = \delta_1 \hat{w}_d$

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

where the "hats" denote long-run equilibrium values. Expectations are seen to 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 relationship 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 conjuction 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 can be written as

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

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 adjustment in the composition of the household's balance sheet as well as saving in toto, while 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 multiple members in the labor force, there is a further disaggregation of wages and salaries by recipient. The CU sample does not provide a decomposition of 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. Should they be too uncertain to guess, this, too, was an option. 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

---

19/ The majority of equations tabulated, however, include income of the current year only.

20/ One such set for the 5-year expectations in the CU sample is as follows:

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

assume explicit and essentially arbitrary values for the open-ended classes; an added benefit is that it automatically allows for the effect of price expectations to be nonlinear.[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 proxy 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]

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 asorbed 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 while 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.

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

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

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

In line with the reasoning leading to expression (6), the sign of λ_1^* should be opposite to that of λ_o^*

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. While these factors -- age, education, and family size, in particular -- are frequently of interest in their own right, their inclusion in the present context is primarily for purposes of control.[24/]

IV. Description of the Micro Data Sets

1. CAS sample

The Consumer Anticipations Survey is a relatively recent panel survey of some 3300 middle-to-high income households that was conducted by the U.S. Bureau of the Census in close collaboration with the National Bureau of Economic Research[25/]. The first of the five waves of interviews that comprise

---

24/ This being the case, it can be argued that I would have been better advised to group households by the characteristics involved and then estimating separate equations for each group. However, this would have (1) put distressingly severe demands on my limited computer budget and (2) resulted in many cells with a meager count of households.

25/ For a description of the survey, see Juster, McNeil, and Stoterau (1969).

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 in design, 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 interview were not as 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 they fell. In these cases, geometric means of interval end points were used for point estimates. With respect to the period of reference, the only serious problem unfortunately involves the data for price expectations, for the period of reference for these is the 12 months beginning in May (June in some cases) 1968. This

---

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.

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 2876 households. The households included all consist of a married couple residing in an urban area (no farm families are included) with husband and wife both present. Equations have been estimated for the sample as a whole and with the 2876 households grouped into three asset categories as follows:

Group	Assets	Households
1	under $25,000	1537
2	$25,000-$75,000	1072
3	over $75,000	206

Since for this sample data on household net worth are not available, the grouping has been based on total 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:

28/ After the equations with the entire sample were estimatd, I found that some households had missing data for some variables and that a missing observations 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 2815.

Table 1

Distribution of Price Expectations

One-Year Horizon
CAS Sample

Prices Expected:	Proportion of Households: Entire Sample	Asset Class 1	Asset Class 2	Asset Class 3
To increase less than 2%	.084	.086	.078	.107
To increase 2-4%	.451	.449	.461	.403
To increase 5-10%	.226	.221	.232	.238
To increase more than 10%	.101	.101	.096	.112
Too uncertain to say	.138	.143	.133	.140

The "typical" household is seen to have had expectations, correctly as it turned out, of rates of inflation approximating 2-4% per year. However, it is to be noted that a fair proportion of the households, 14%, was unprepared to express any expectations at all. It also is of particular interest that the distribution of expectations is, for all practical purposes, invariant across asset classes.

2. Consumers Union Sample

Like the CAS sample, the CU sample is nonrandom in design and is based on the extensive survey of some 15,000 of its members by the Consumers Union in the late 1950's.[29/] The particular data set analyzed here contain 4227 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

29/ For a description of characteristics and a discussion of the quality of information of this survey, see Cagan (1965).

data set are similar in their circumstances 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 extimated 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	2074
2	$25,000 - $75,000	1614
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 5-year expectations in Table 2.

Table 2

Distribution of Price Expectations

Five-Year Horizon
CU Sample

Prices Expected:	Proportion of Households: Entire Sample	Asset Class 1	Asset Class 2	Asset Class 3
To fall	.023	.021	.025	.028
To remain the same	.041	.370	.336	.334
To increase less than 5%	.311			
To increase 5-10%	.385	.500	.536	.525
To increase 10-15%	.130			
To increase 15-25%	.049	.059	.058	.069
To increase 25-40%	.010			
To increase more than 40%	.001	.001	.001	.002
Too uncertain to say	.050	.039	.044	.042

As with the CAS sample, the "typical" household is seen to have had expectations that correctly anticipated the inflation that axtually occured over the period involved.[30] What is more, we again find the distribution of price expectations to be invariant with respect to wealth.

V. 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 property
5). S1: ΔSA + ΔGB
6). S2: ΔSA + ΔGB + ΔCS
7). S3: ΔSA + ΔGB + ΔCS + 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

[30] Between 1958 and 1963, the horizon covered by the expectations in Table 2, the CPI increased 5.6%.

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. Finding this to be the case is, of course, hardly surprising.

2). Income also is usually a strong predictor, especially in the CAS equations where 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

31/ The CAS equations are listed in Tables A1 and A2 in Appendix A, while the CU equations are given in Tables A3 and A4.

32/ The reader will note that the R^2's for the equations for savings accounts (SA) and government bonds (GB) in Tables A1 and A2 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 in these equations is that these variables allow for the dynamic effects of stock adjustment. However, in the present context, it is clear that these variables also are reflecting 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.

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 2876 households, while the coefficients in Table 4 are from the equations estimated for each of three asset classes, where the asset classes are those defined near the end of Section IV.

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 for easier interpretation of the results since the expectaions of the households in this category (inflation of 2-4%) were in fact realized.

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% added, on the average $348.63 more in savings accounts than households expecting prices to increase 2-4%.

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 property

S1: ΔSA + ΔGB

S2: ΔSA + ΔGB + ΔCS

S3: ΔSA + ΔGB + ΔCS + IP

PE1: Prices expected to change ≤ 2%

PE3: " " " " 5-9%

PE4: " " " " ≥ 10%

PE5: Too uncertain to say.

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

The results in Table 3 can only be said to 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 uncertainty leads to increased saving.[34/]

On the other hand, it seems implausible ever to have the coefficients for PE1, PE3, and PE4 all with the same sign, since this implies a marked and unusual nonlinearity in the effect of price expectations. However, this is seen to be the case in the equations for SA, GB, IP, S1, and S3.

The central message of the results in Table 4, which has the CAS household grouped according to wealth, is that the effects of price expectations are not uniform with respect to wealth. For there is seen to be substantial differences, not only in magnitude, but in sign as well, in the coefficients for each component of investment across the three wealth classes.[35/] Moreover, even within wealth classes, grouping does

---

34/ The negative coefficient in the equation for ΔCS might seem an anomaly; however, to flee the stock market in the face of uncertainty seems perfectly sensible behavior.

35/ Among other things, this casts doubt on the assumption, implicit in the equations in Table A1 in Appendix A and which underly Table 3, that the structure being estimated is homogenous 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 A2 in Appendix A) 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 A1 for the sample as a whole may be plagued by heteroscedasticity.

Table 4

Coefficients for Price Expectations Variables

CAS Data Set*

Households Grouped By Asset Class

(t-ratios in parentheses)

Dependent variable	Asset class	PE1	PE3	PE4	PE5
	1	-77.00	28.73	-38.73	51.46
ΔSA	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
ΔGB	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
ΔCS	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
S1	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
S2	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
S3	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 PE2. Variables are as defined in Table 1.

not lead to much, if any, clarification of the results. There remain many instances where PE1, PE3, and PE4 all have the same sign, and the sign of PE5 is now seen to vary with the level of wealth. Indeed, the view that uncertainty 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 20, 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 undertaken on the resulting reduction in the unexplained sum of squares. The results from this test for the 7 CAS equations, with households grouped according to wealth, are presented in Table 5. The numbers in this table are the observed 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 observed F-ratios significant at the 0.05 level are seen to be 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 of only mild importance 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.

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, 1479), (4, 1013), and (4, 150), respectively.

Let us now turn to the CU data set. The tabulation of the results for this sample follows that for the CAS sample in that the coefficients for only the price expectations variables are given here in the test 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 A3 and A4 in Appendix A. Tables 6 and 7 follow Table 3 and 4, while Tables A3 and A4 contain the estimated equations in full and thus parallel Tables A1 and A2.

As already noted, the important conceptual difference (with regards to the price expectations data) between the CU and CAS samples is that, whereas price expectations in the CAS sample refer to a single horizon of 12 months, the data in this sample refer to multiple horizons of 5, 10, and 20 years, respectively. However, equations utilizing the data for all three horizons simultaneously have been estimated only for the entire sample; only data for the 5-year horizon are used in the equations with the households grouped according to wealth.[36/] 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 5, 10, and 20 year horizons, respectively, while in Table 7 they represent deviations from PE11 and PEF11.

Once agains, 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 5-year expectations, the signs and magnitudes of the coefficients for PE1-PE8 imply price expectation effects that are sufficiently non-linear to defy any plausible interpretation. The situation is somewhat better for the 10-year expectations (cf. the coefficients for PEL1, PEL3, and PEL4 in the equation for ΔNW, which decrease in magnitude with signs, +, -, and -), and best for the 20-year expectations, where PELR1 and PELR3 have opposite signs in all equations except the one for additions to net worth. The signs of the coefficients for PE1 are positive for all four equations, implying that households expecting prices to fall save more

---

36/ The decision to forego exploration of the 10 and 20 year horizons in the equations with households grouped by wealth was prompted strictly by budgetary considerations.

than those households expecting inflation of 1-2% per year. This is consistent with the traditional view discussed in Section II. Finally, with regard to the category "too uncertain to guess" (PE9, PEL5, and PELR4 for the 5, 10, and 20-year horizons, 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, and in the equations with households grouped according to wealth, the number of (5-year horizon) price expectations categories has been reduced to four. However, as Table 7 shows, neither this procedure, the elimination of the 10 and 20-year expectations, nor grouping all taken in combination, leads to any marked clarification in the results. From a comparison of coefficients across wealth classes in Table 7 (see also Table A4 in Appendix A), 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, seen at the bottom of Table A4, suggests that nonhomogeneity also extends to error variances.

The variables PEF1, PEF10, and PEF12 in Table 7 are interaction dummy variables defined as the product of the price expectations dummy variables with a dummy variable denoting whether a household was too uncertain to guess about its financial prospects over the next several years[37/]. As discussed in Section IV, this represents an attempt to make the coefficients for the price expectations variables a function of the uncertainty with

---

37/ See the end of Table 7 for precise definitions of these variables. It will be noticed that there is no PEF8 corresponding to PE8. This is because there were no households in the sample with expectations of more than 40% inflation (over the next five years) and too uncertain to assess their financial prospects.

which the expectations are held. Consistency with the hypothesis that motivates this procedure requires the coefficients of PEi and PEFi (i = 1, 10, 12) to have opposite signs. Of the 36 pairs of PEi and PEFi in the table, 20 have this disparity in sign, while 16 do not. The hypotheses thus receives little support.

VI. 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. While our primary interest here will still be in price expectations and their effects 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.

1. The Model, Data, and Methods of Estimation

The model underlying the time-series analysis is as follows:

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

38/ See the discussions surrounding expression (6) and (10) above.

39/ Other analyses of the flow-of-funds data include Houthakker and Taylor (1970), Motley (1970), and Wachtel (1972).

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 4 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 (11) is based on the model discussed in Section III. The quantities comprising net worth, SH, SD, SB, DD, SA, and CC, represent objective state variables, PE represents a subjective state variable,[40/] and the

---

40/ 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 and is beyond the scope of the present effort.

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.

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),[41/] 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. The purpose of this simply is to bring the NIA data into line with FOF definitions. The second modification is more substantive and involves

41/ The question asked respondents is whether they expect the prices of things they buy in the next 12 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 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 just were asked 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 DeMenil and Bhalla (1973), I have not attempted to convert the pre-1966 data to point estimates.

eliminating from disposable income components based on imputation. Details are given in Appendix B. Since housholds may view 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 upon 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 upon 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 which have been estimated using the Cochrane-Orcutt transformation as a correction for apparent autocorrelation in the error term. Finally, there are several equations which 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).

2. Summary and Evaluation of Time-Series Results

Equations have been estimated for 14 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 inflation variables are tabulated in Table 10.

Brief definitions of the dependent variables are as follows [42/]

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

42/ Complete definitions are given in Appendix B.

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, while 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 composed of net purchases of owner-occupied dwellings and buildings of non-profit 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 of interest because of its close correspondence (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 of importance 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

Table 8

Equations

Quarterly Flow-of-Funds
(t-ratios in parentheses)

ndependent ariable	PS	NS	GS	GI	CE	MFI
			Equation			
onstant	-372.46 (-3.18)	-215.65 (-2.01)	-331.99 (-3.06)			
H			0.12 (1.54)	-0.26 (-1.79)		
D	-0.23 (-3.52)	-0.32 (-5.46)	-0.20 (-2.45)			
SB	-0.014 (-1.53)	-0.021 (-2.72)	-0.014 (-1.70)		0.16* (5.11)	
B						-0.034 (-2.10)
A			-0.11 (-1.24)	-0.10 (-1.04)		
C	0.80* (3.15)	-0.43 (-2.64)	-0.35 (-2.18)	-0.84 (-2.48)		-0.47 (-1.66)
	0.35 (4.72)	0.52 (9.22)	0.60 (10.54)	0.58 (4.36)	0.16 (7.88)	0.22 (4.24)
P	1.01 (5.72)	0.74 (5.63)	0.89 (6.67)	1.12 (4.91)	-0.21 (-1.59)	1.44 (5.80)
SI	-2.23 (-4.14)	-1.28 (-2.86)	-1.30 (-2.74)	-1.53 (-1.54)		
I	-0.72 (-7.94)	-0.85 (-13.07)	-0.90 (-11.23)	-0.78 (-4.06)		-1.00 (-5.35)
PE	6.38 (2.98)	5.83 (3.59)	5.05 (3.13)	11.83 (3.20)	2.99 (1.20)	4.88 (1.75)
A		0.70 (1.72)	0.63 (1.54)	2.30 (2.96)		3.76 (3.95)

independent variable	equation PS	NS	GS	GI	CE	NFI
R1				-4.40 (-2.02)		-7.03 (-3.39)
R2						
A1	2.20 (1.70)	6.46 (6.07)	7.61 (5.16)	4.58 (2.12)		
AA1					1.86 (2.88)	
A2	10.70 (4.46)	-2.78 (-1.43)	7.00 (-1.60)	-4.82 (-2.97)		
A3	31.89 (2.77)	27.55 (2.65)	48.65 (4.31)			
A4	-19.10 (-3.72)	-14.83 (-3.17)	-23.36 (-4.46)			
$\bar{R}$	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
$\bar{y}$	32.41	40.34	95.04	98.17	81.90	19.20
DF	49	54	52	56	53	59

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 8 continued

independent variable	equation 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)			
[illegible]					0.62 (7.74)	
SA		0.10 (2.17)				
CC	-0.24 (-1.49)	-0.60* (-3.44)	-2.03 (-4.85)	-1.98 (-6.56)		
Lr	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)		

Table 8 continued

ndependent ariable	equation CD	HN	NAF	NIL	DD	SA
'A			2.73 (2.97)	-0.95 (-1.45)		
:1			-6.88 (-3.53)			
'2					-4.51 (-3.23)	4.35 (1.24)
A1				6.51 (3.80)		12.22 (4.06)
AA1	7.63 (2.99)		15.33 (2.17)			
A2		2.07 (1.50)		-22.32 (-6.43)		-42.02 (-11.19)
AA2	-2.20 (-2.85)		-5.46 (-3.58)			
A3	16.86 (3.00)	-8.56 (-2.88)		19.53 (6.37)		-17.61 (-2.31)
A4		6.74 (2.68)				
R^2	0.996	0.894	0.952	0.853	0.998	0.999
β		0.39			0.46	0.66
S_e	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 continued

independent variable	equation CC	equation ID
constant		
SH		
SD		
SB		
SB		
D		
SA		
CC	-0.93* (-6.94)	-0.81 (-7.04)
[illegible]	0.20 (5.63)	0.20 (7.55)
TP	-0.23 (-3.56)	-0.27 (-5.30)
SI	-0.93 (-3.33)	-0.94 (-4.91)
PE	1.71 (1.38)	
PA		
R1		
R2		
A1		
AA1	8.15 (5.48)	5.54 (5.11)

independent variable	Equation CC	Equation ID
A2		
AA2	-3.04 (-7.90)	-2.44 (-7.52)
A3		
A4		
R^2	0.887	0.895
ρ		
S_e	1.17	1.00
DW	1.96	1.86
$\bar{y}$	5.89	4.85
DF	54	55

Table 9

Distributed Lag Coefficients

For Equations In Table 1
(t-ratios in parentheses)

equation	variable	lag: 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	ΔSB	-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	ΔSB	-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	ΔSB	-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)					
	ΔSB	0.018	0.012	0.008	0.006	0.004				
		(3.50)	(2.57)	(2.10)	(1.50)	(0.86)				
SA	ΔSB	0.044	0.016	0.014	0.021	0.022				
		(4.54)	(1.73)	(1.58)	(2.26)	(2.33)				
ΔCC	CC		0.48	-0.64	-0.69	-0.25	0.17			
			(1.52)	(-3.58)	(-3.68)	(-5.22)	(1.07)			
ΔID	CC		0.59	-0.61	-0.70	-0.26	0.17			
			(2.19)	(-3.99)	(-4.33)	(-6.37)	(1.22)			

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 which frequently reaches $5 billion or more. Further disaggregation takes capital expenditures into expenditures for durable goods (CD) and gross investment in housing (HN), while net financial investment is decomposed 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 (ΔID).

Price expectations. Of particular interest to the present undertaking is the importance of the variable representing price expectations. Indeed, the results (see Table 10), especially for the equations for personal, net, and gross saving and gross investment, in all of which the t-ratio for PE is 2.9 or higher, leave little question but what expectations of inflation lead housholds to increase the amount they save. This corroborates the recent results of Juster and Wachtel (1972a) and the earlier findings of Mueller (1959) and, of course, is consistent with the Katona-Juster thesis that inflation increases the uncertainty with which households view the future and leads them to increase their saving. Moreover, the equations for capital expenditures, expenditures for durable goods, the net acquisition of financial assets, and the acquisition of consumer debt all point to the positive effect of expected inflation on saving as being uniform across asset categories [43/]

43/ While PE is absent from the equation explaining the level of demand deposits, the variable's impact, when included as a predictor, was negative but with a t-ratio less than one. In contrast, when PE was included in the equation for savings accounts, its coefficients was positive, but again with a t-ratio less than one.

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	4.38 (1.75)	3.76 (3.95)	ΔCC	1.71 (1.38)	—
CD	3.02 (1.48)	—	ΔID	—	—

Inflation in the recent past. Although it does not do so with the frequency and gusto of PE, inflation in the recent past, as represented in the variable PA, is seen to appear in several equations. My idea for including this variable in the model was that it would capture 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, my hypothesis was that households will increase current saving so as to make up the loss. I originally set out to incorporate this into the model directly through a distributed lag on the real change in households' holdings of demand deposits and savings accounts. However, the lag coefficients were very unstable, and the approach was abandoned in favor of a four-quarter moving average of the percentage change in the PCE deflator.

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 upon 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.[44/]

Of the components of wealth that have been considered, the ones that appear with greatest frequency 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 generation of 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 derive the effect of a capital gain on consumption, but paradoxically we cannot do this for saving, properly measured. From the equation for gross saving, a dollar of capital gain is seen to lead to about a two cents 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

44/ 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.

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.[45/]

The rather small effect on consumption that has just been noted 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.[46/] 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.

45/ There is one other important implication of the way that capital gains are treated in the National Income Accounts. While realized capital fains are not included in personal income, taxes on the capital gains <u>are</u> 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.

46/ See Modigliani (1971).

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, in contrast, uses a corporate wealth series constructed by capitalizing net dividends from the National Income Accounts by the Standard and Poor Index of Dividend Yields[47/]

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 given that 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).[48/] But this is usually not the case for the sign on CC_{t-1}. While a negative sign in t-1 can be rationalized

---

47/ For a discussion of the MPS methodology, see Modigliani (1971, p. 13).

48/ For a model of aggregate consumption and saving that takes the extension of consumer credit as its point of departure, see Burress (1972).

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.[49/]

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.[50/] In particular, they continue to show a very high short-run marginal propensity to save out of transfer payments and very substantial negative coeficients on personal contributions to social insurace and personal taxes. While the results obtained here offer no insight as to 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[51/].

Finally, it is worthy to note that the results do offer some insight into the fact that the coefficient on personal taxes is larger (in absolute value) than the one on labor and property income. For, as indicated in footnote 44,

---

49/ One extenuating circumstance may be the use of a fixed-weight distributed lag when one of variable weights is in order.

50/ 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.

51/ 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 intricsic 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.

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 10. 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.

Table 10

Signs of Age Structure Variables
In Time-Series Equations

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

The features of note 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 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.[52/]

3). Considerably greater than average saving is exhibited by the 40-50 age group. This, too, accords with general observation, and also with the fact that peak of earning potential, is , in general, reached in the forties.

4). The 50-65 age group, on the other hand, is indicated to be relative dissavers. While this is in keeping with the life-cycle model, I nevertheless find it somewhat unexpected, since casual observation suggests that the 10 to 15 years before age 65 are years of conscious saving for retirement.

5). Finally, it is to be noticed that the equations for which age appears to be of no consequence at all are net investment in

---

52/ 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).

financial assets and the holdings of demand deposits. However, neither of these results seems particularly surprising.

VII. 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 dat 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 that reported here. 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--while 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 no matter how ill-founded the expectations *per se* may appear to an outsider.

Secondly, and of no less importance, I find in Table 5 that price expectations are of greater importance to households of moderate wealth, as opposed to poor or very wealthy households, on the whole, 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 much more likely to react to inflation that has already occurred as opposed to inflation that they expect to occur. Wealthy households, on the other hand, can either afford to ignore price expectations altogether or, what is 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. I do not mean this as criticism of the surveys from which the data were obtained--these surveys 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 upon which member of the household was queried.[53/] Clearly, the expectations that are relevant are those of the one responsible for the decisions that are made. Future endeavors in collecting price expectations data must

53/ I am grateful to Donald Heckerman of the University of Arizona for being sufficiently curious to undertake this analysis purely in the interest of science.

accordingly make certain that the expectations obtained are those of the decision-maker(s).

2). Efforts should also focus on obtaining estimates of the confidence with which price expectations are held. The importance of obtaining this additional information in a usable form cannot be overestimated.

3). Finally, future endeavors should also elicit information on whether near-term price changes are expected to be permanent or only temporary.

References

Almon, S. (1965), "The Distributed Lag Between Capital Appropriations and Expenditures", Econometrica, Vol. 33, January 1965.

Brown, T.M. (1952), "Habit Persistence and Lags in Consumer Behavior", Econometrica, January 1952.

Burress, G.E. (1972), "A Contribution to Forecasting Personal Saving: 1967-1974", School of Commerce and Finance, St. Louis University.

Cagan, P. (1965), The Effect of Pension Plans on Aggregate Saving: Evidence From A Sample Survey, Occasional Paper No. 95, National Bureau of Economic Research.

deMenil, G. and Bhalla, S. (1973), "Popular Price Expectations", Department of Economics, Princeton University.

Duesenberry, J.S. (1949), Income, Saving, and the Theory of Consumer Behavior, Harvard University Press.

Fair, R.C. (1971), "Consumer Sentiment, The Stock Market, and Consumption Function", Econometric Research Program Research Memorandum No. 119, Princeton University, January 1971.

Gibson, W.E. (1970), "Price Expectations Effects on Interest Rates", Journal of Finance, March (1970).

Gordon, R.J. (1970), "The Recent Acceleration of Inflation and Its Lessons for the Future", Brookings Papers on Economic Activity, No. 1, 1970.

Gordon, R.J. (1971a), "Inflation in Recession and Recovery", Brookings Papers on Economic Activity, No. 1, 1971.

Houthakker, H.S. and Taylor, L.D. (1970), Consumer Demand In The United States, Second Edition, Harvard University Press.

Hymans, S.H. (1970), "Consumer Durable Spending: Explanation and Predictions", Brookings Papers on Economic Activity, No. 2, 1970.

Juster, T.F., McNeil, J., and Stoterau, T. (1969), "Ex-Ante Household savings Data: Some Preliminary Results", American Statistical Association, 1969 Proceedings of the Business and Economic Statistical Section.

Juster, T., and Wachtel, P. (1972a), "Inflation and the Consumer", Brookings Papers on Economic Activity, No. 1, 1972.

Juster, T.F. and Wachtel, P. (1972b), "A Note on Inflation and the Saving Rate", Brookings Papers on Economic Activity, No. 2, 1972.

Katona, G. (1960), The Powerful Consumer, McGraw-Hill Publishing Co.

Leland, H.E. (1968), "Saving and Uncertainty: The Precautionary Demand for Money", Quarterly Journal of Economics, August 1968.

Levhari, D. and Srinivasan, T.N. (1969), "Optimal Savings Under Uncertainty", Review of Economic Studies, April 1969.

Mirman, L.J. (1971), "Uncertainty and Optimal Consumption Decisions", Econometrica, January 1971.

Modigliani, F. (1971), "Monetary Policy and COnsumption", in Consumer Spending and Monetary Policy: The Linkages, Conference Series No. 5, The Federal Reserve Bank of Boston.

Motley, B. (1970), "Household Demand for Assets: A Model of Short-Run Adjustment", Review of Economics and Statistics, Vol. LII, No. 3, August 1970.

Mueller, E. (1959), "Consumer Reactions to Inflation", Quarterly Journal of Economics, Vol. LXXII, May 1959.

Muth, J.F. (1961), "Rational Expectations and the Theory of Price Movements", Econometrica, May 1961.

Nerlove, M. (1958), Distributed Lags and Demand Analysis, Agricultural Handbook No. 141, U.S. Government Printing Office.

Peterson, R.L. and Dunkelberg, W.C. (1971), "Short-Run Fluctuations in Aggregate Savings Rates," Graduate School of Business, Stanford University.

Pyle, D.H. (1972), "Observed Price Expectations and Interest Rates", Review of Economics and Statistics, August 1972.

Sandmo, A. (1970), "The Effect of Uncertainty on Saving Decisions", Review of Economic Studies, July 1970.

Sargent, T. (1972), "Anticipated Inflation and the Nominal Rate of Interest", Quarterly Journal of Economics, May 1972.

Sargent, T. (1973a), "What do Regressions of Interest on Inflation Show", Annals of Economic and Social Measurement, July 1973.

Stafford, F. and Dunkelberg, W.C. (1969), "The Cost of Financing Automobile Purchases", Review of Economics and Statistics, Vol. LI, November 1969.

Taylor, L.D. (1971), "Saving Out of Different Types of Income," Brookings Papers on Economic Activity, No. 1, 1972.

Tobin, J. and Dolde, W.C. (1971), "Wealth, Liquidity, and Consumption" in Consumer Spending and Monetary Policy: The Linkages, Conference Series No. 5, The Federal Reserve Bank of Boston.

Turnovsky, S.J. (1969), "A Bayesian Approach to the THeory of Expectations", Journal of Economic Theory, August 1969.

Turnovsky, S.J. (1972a), "The Expectations Hypothesis and the Aggregate Wage Equation: Some Empirical Evidence for Canada", Economica, February 1972.

Turnovsky, S.J. and Wachter, M.L. (1972b), "A Test of the 'Expectations Hypothesis' Using Directly Observed Wage and Price Expectations", Review of Economics and Statistics, February 1972.

Wachtel, P. (1972), "A Model of Interrelated Demand for Assets by Households", Annals of Economic and Social Measurement, Vol. 1, No.2, 1972.

Appendix A
Estimated Equations For CAS and CU Data Sets

Glossary For Tables A1 and A2

SA: Holdings of savings accounts

GB: Holdings of government bonds

ΔCS: Net purchases of common stock

IP: Investment in property

S1: $\Delta SA + \Delta GB$ (investment in fixed claims)

S2: $\Delta SA + \Delta GB + \Delta CS$ (investment in financial assets)

S3: $\Delta SA + \Delta GB + \Delta CS + IP$ (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

SC1: $\begin{cases} 1 & \text{if first car needs repair} \\ 0 & \text{otherwise} \end{cases}$

SC2: $\begin{cases} 1 & \text{if second car needs repair} \\ 0 & \text{otherwise} \end{cases}$

HD1: $\begin{cases} 1 & \text{if family owns stove, refrigerator, washing machine and black and white TV} \\ 0 & \text{otherwise} \end{cases}$

HD2: $\begin{cases} 1 & \text{if family owns clothes dryer or dishwasher or room air conditioner} \\ 0 & \text{otherwise} \end{cases}$

HD3: $\begin{cases} 1 & \text{if family owns color TV or hi-fi or musical instrument} \\ 0 & \text{otherwise} \end{cases}$

WS1: Wage and salary income of first income receiver

WS2: " " " " " second income receiver

WS3: " " " " " third " "

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: " " " " 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

A1: $\begin{cases} 1 & \text{if household head's age is less than 30} \\ 0 & \text{otherwise} \end{cases}$

A2: $\begin{cases} 1 & \text{if household head's age is between 30 and 39} \\ 0 & \text{otherwise} \end{cases}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\text{D2J:} \begin{cases} 1 & \text{if head desires second job} \\ 0 & \text{otherwise} \end{cases}$$

PP: pension payments in 1967.

Table A1

Equations

CAS Data Set

(t-ratios in parentheses)

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 (-3.39)	-.00073 (-1.21)	-0.0541 (-8.76)	0.00569 (0.74)
OVH	0.00208 (0.29)	-.00124 (-1.27)	0.0314 (3.08)	-0.0171 (-1.37)
HMD	-0.00919 (-1.27)	.00144 (1.46)	-0.0240 (-2.35)	-0.00293 (-0.23)
NCO	58.67 (0.69)	-5.63 (-0.48)	-13.68 (-0.11)	-48.80 (-0.33)
SC1	-282.41 (-1.29)	0.627 (0.02)	-258.66 (-0.83)	-12.57 (-0.03)
SC2	74.50 (0.37)	67.61 (2.50)	477.06 (1.69)	68.44 (0.19)
HD1	93.28 (0.67)	7.13 (0.38)	-294.45 (-1.50)	473.07 (1.97)
HD2	-51.65 (-0.24)	-13.99 (-0.48)	86.21 (0.28)	133.32 (0.36)
HD3	-184.37 (-1.17)	27.02 (1.28)	-51.08 (-0.23)	39.53 (0.14)
[illegible]1	0.0466 (5.05)	0.00201 (1.64)	0.133 (10.31)	0.117 (7.42)

Table A1 (continued)

Independent Variable	Dependent Variable: SA	GB	ΔCS	IP
WS2	0.00650 (0.22)	0.00050 (0.12)	-0.240 (-5.76)	0.114 (2.23)
WS3	-0.135 (-1.75)	0.0141 (0.90)	0.135 (1.25)	0.0086 (0.07)
ID	-0.0421 (-1.33)	-0.00596 (-1.39)	0.386 (8.78)	0.00104 (0.02)
RI	0.0925 (2.30)	-0.00398 (-0.73)	-0.00477 (-0.12)	0.308 (4.45)
GI	0.139 (5.31)	0.0235 (6.66)	0.397 (10.80)	0.0987 (2.20)
BI	0.0490 (4.81)	0.00088 (6.64)	0.0842 (5.87)	0.118 (6.69)
SS	0.182 (0.81)	0.0239 (0.79)	-0.355 (-1.14)	-0.157 (-0.41)
PI	0.0802 (1.04)	-0.00365 (-0.35)	0.0595 (0.55)	0.130 (0.99)
OI	0.135 (2.90)	0.00367 (0.58)	0.114 (1.74)	-0.0565 (-0.71)
CG	0.0779 (3.55)	0.0134 (4.54)	-0.103 (-3.35)	0.277 (7.38)
CGH	-0.00594 (-0.86)	-0.00129 (-1.38)	0.00523 (0.54)	0.0293 (2.48)
CGVH	-0.00271 (-0.12)	-0.00397 (-1.35)	0.0333 (1.09)	0.0273 (0.73)
LI	-181.58 (-1.21)	26.95 (1.33)	-51.98 (-0.24)	316.75 (1.23)
DY	-0.00052 (-0.04)	0.00522 (3.14)	0.105 (6.08)	0.0214 (1.01)
IND	0.165 (1.39)	-0.0154 (-0.95)	-0.0118 (-0.07)	-0.527 (-2.57)

Table A1 (continued)

Independent Variable	Dependent Variable: SA	GB	CS	IP
A1	-503.99 (-0.87)	-36.44 (-0.47)	-564.80 (-0.70)	1535.12 (1.54)
A2	-261.76 (-0.50)	-34.15 (-0.48)	-805.60 (-1.09)	963.14 (1.06)
A3	-402.48 (-0.78)	-25.65 (-0.37)	-1078.05 (-1.49)	743.66 (0.84)
A4	223.93 (0.42)	19.67 (0.27)	-942.52 (-1.27)	1345.43 (1.40)
EH1	98.19 (0.22)	-70.12 (-1.17)	476.97 (0.76)	883.81 (1.16)
EH2	299.03 (0.90)	-13.06 (-0.29)	640.76 (1.37)	650.75 (1.14)
EH3	200.68 (1.07)	0.730 (0.03)	742.07 (2.81)	114.04 (0.35)
EH4	-1.04 (-0.01)	16.21 (0.67)	284.16 (1.14)	218.26 (0.72)
EH5	-83.34 (-0.52)	-15.30 (-0.71)	622.50 (2.79)	-94.36 (-0.35)
C1	-1527.40 (-3.67)	53.08 (0.94)	-1282.33 (-2.19)	656.45 (0.91)
C2	-1498.52 (-3.42)	24.33 (0.41)	-1494.93 (-2.42)	1080.72 (1.43)
C3	-1458.63 (-2.94)	29.46 (0.44)	-2382.19 (-3.41)	1919.45 (2.25)
C4	-2075.14 (-2.86)	-14.93 (-0.15)	950.90 (0.93)	1498.77 (1.20)
C[illegible]	-1698.85 (-1.68)	48.36 (0.35)	-2403.63 (-1.70)	-16.21 (-0.01)

Table A1 (continued)

Independent Variable	Dependent Variable SA	GB	CS	IP
C6	-1419.07 (-1.58)	44.13 (0.36)	-1862.59 (-1.47)	474.72 (0.31)
CC1	84.53 (0.49)	-27.71 (-1.18)	105.06 (0.43)	-283.85 (-0.95)
CC2	-908.53 (-2.66)	-41.48 (-0.89)	-528.71 (-1.10)	695.81 (1.18)
CC3	1646.32 (1.65)	-50.59 (-0.38)	-3129.85 (-2.24)	-1579.83 (0.92)
DMC	1498.89 (3.95)	-35.34 (-0.69)	1499.39 (2.81)	-543.83 (-0.83)
PE1	312.21 (1.29)	0.703 (0.02)	-386.21 (-1.13)	-572.46 (-1.37)
PE2	-36.42 (-0.21)	-13.76 (-0.60)	107.97 (0.45)	-261.32 (-0.89)
PE3	62.24 (0.33)	-27.65 (-1.08)	183.04 (0.69)	-562.15 (-1.72)
PE4	300.20 (1.31)	-57.59 (-1.85)	342.63 (1.06)	-442.84 (-1.17)
OCC1	-318.78 (-0.11)	-35.74 (-0.09)	841.82 (0.20)	-1152.20 (-0.22)
OCC2	-432.31 (-1.02)	-14.33 (-0.30)	-463.53 (-0.78)	-164.18 (-0.22)
OCC3	-441.26 (-1.37)	2.03 (0.10)	-513.92 (-1.13)	-213.32 (-0.38)
OCC4	-9.77 (-0.02)	-53.31 (-1.11)	-394.87 (-0.83)	-17.66 (-0.03)
OCC5	-176.83 (-0.62)	-35.95 (-0.93)	-867.42 (-2.15)	-229.49 (-0.46)

Table A1 (continued)

Independent Variable	Dependent Variable SA	GB	CS	IP
OCC6	-84.44 (-0.31)	-30.80 (-0.83)	-541.45 (-1.41)	-181.73 (-0.39)
FTW	56.08 (0.20)	-30.90 (-0.81)	-268.52 (-0.68)	384.57 (0.79)
DJ2	-30.44 (-0.15)	-4.89 (-0.18)	-98.62 (-0.39)	235.02 (0.68)
WS1/WS2	-4.40 (-1.42)	-0.0203 (-0.10)	10.76 (2.47)	7.95 (1.49)
PP	0.0356 (1.10)	0.00048 (0.11)	0.0176 (0.38)	0.00026 (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
$\overline{y}$	4636.34	534.54	657.43	686.28

Table A1 (continued)

Independent Variable	Dependent Variable		
	S1	S2	S3
constant	345.45	-155.45	-2374.27
SA(t-1)	-0.0248 (-3.46)	-.00052 (-0.62)	0.0360 (2.17)
GB(t-1)			
CS(t-1)	-0.0160 (-3.50)	-0.0717 (-9.05)	-0.0687 (-6.47)
OVH	0.00262 (0.35)	0.0318 (2.45)	0.00686 (0.40)
HMD	-0.0103 (-1.37)	-0.0304 (2.32)	-0.0226 (-1.29)
NCO	75.64 (0.87)	53.48 (0.35)	-68.05 (-0.33)
SC1	-273.14 (-1.20)	-514.96 (-1.31)	-484.81 (-0.92)
SC2	113.66 (0.55)	594.37 (1.66)	603.39 (1.26)
HD1	45.14 (0.31)	-266.48 (-1.07)	276.04 (0.83)
HD2	-60.10 (-0.27)	16.46 (0.04)	102.32 (0.20)
HD3	-168.71 (-1.04)	-223.48 (-0.84)	-166.99 (-0.45)
WS1	0.0442 (4.64)	0.175 (10.63)	0.295 (13.35)
WS2	0.00085 (0.03)	-0.245 (-4.62)	-0.128 (-1.81)
WS3	-0.127 (-1.60)	0.00440 (0.03)	0.0172 (0.09)
ID	-0.0625 (-1.90)	0.301 (5.28)	0.289 (3.76)
RI	0.0752 (1.81)	0.0674 (0.94)	0.380 (3.95)

Table A.1 (continued)

Independent Variable	Dependent Variable		
	S1	S2	S3
GI	0.147 (5.45)	0.542 (11.64)	0.657 (10.53)
BI	0.0497 (4.71)	0.131 (0.74)	0.247 (10.08)
SS	0.153 (0.66)	-0.317 (-0.79)	-0.606 (-1.14)
PI	0.0657 (0.82)	0.118 (0.86)	0.207 (1.12)
OI	0.140 (2.91)	0.254 (3.07)	0.193 (1.73)
CG	0.135 (5.98)	0.0371 (0.95)	0.266 (5.07)
CGH	-0.00581 (-0.82)	-0.00182 (-0.15)	0.232 (1.41)
CGVH	-0.0109 (-0.49)	0.0232 (0.60)	0.0569 (1.10)
LI	-157.12 (-1.01)	-218.27 (-0.81)	91.42 (0.25)
DY	-0.00753 (-0.59)	0.0968 (4.41)	0.132 (4.49)
IND	0.149 (1.21)	0.160 (0.75)	-0.335 (1.17)
A1	-520.00 (-0.87)	-989.54 (-0.96)	663.74 (0.48)
A2	-259.51 (-0.48)	-966.98 (-1.03)	141.03 (0.11)
A3	-375.81 (-0.71)	-1364.63 (-1.48)	-461.37 (-0.37)
A4	337.50 (0.62)	-583.36 (-0.62)	702.31 (0.56)

Table A.1 (continued)

Independent Variable	Dependent Variable		
	S1	S2	S3
EH1	-81.37 (-0.18)	423.55 (0.54)	1436.73 (1.36)
EH2	248.82 (1.28)	931.47 (1.57)	1667.14 (2.10)
EH3	171.74 (0.89)	921.26 (2.75)	1038.69 (2.31)
EH4	11.20 (0.06)	323.06 (1.02)	582.05 (1.38)
EH5	-39.27 (-0.24)	592.84 (2.10)	475.90 (1.26)
C1	-1453.52 (-3.38)	-2752.60 (-3.70)	-2115.44 (-2.12)
C2	-1490.75 (-3.29)	-2999.24 (-3.83)	-1933.52 (-1.84)
C3	-1440.09 (-2.81)	-3817.27 (-4.31)	-1945.54 (-1.64)
C4	-2111.85 (-2.82)	-1170.24 (-0.90)	292.39 (0.17)
C5	-1697.22 (-1.63)	-4131.19 (-2.30)	-4229.30 (-1.76)
C6	-1386.47 (-1.49)	-3276.63 (-2.04)	2868.40 (-1.34)
CC1	599.07 (0.56)	1328.08 (0.72)	-711.01 (-0.29)
CC2	-991.62 (-2.81)	-1509.19 (-2.48)	-746.30 (-0.91)
CC3	1644.73 (1.60)	-1478.18 (-0.83)	-3117.92 (-1.31)

Table A.1 (continued)

Independent Variable	Dependent Variable		
	S1	S2	S3
DMC	1478.96 (3.77)	2987.83 (4.41)	2453.61 (2.70)
PE1	353.34 (1.41)	-31.12 (-0.07)	-673.63 (-1.16)
PE2	-12.92 (-0.07)	102.07 (0.34)	-259.96 (-0.64)
PE3	56.79 (0.29)	236.02 (0.70)	-404.44 (-0.89)
PE4	249.78 (1.06)	592.73 (1.44)	95.35 (0.17)
OCC1	-235.26 (-0.08)	649.41 (0.12)	-693.20 (-0.10)
OCC2	-412.17 (-0.94)	-842.50 (-1.11)	-1133.28 (-1.12)
OCC3	-366.62 (-1.10)	-854.78 (-1.49)	-1069.21 (-1.39)
OCC4	-20.92 (-0.06)	-394.35 (-0.66)	-433.82 (-0.54)
OCC5	-187.16 (-0.63)	-1042.08 (-2.03)	1302.39 (-1.89)
OCC6	-70.85 (-0.25)	-586.53 (-1.20)	-811.91 (-1.24)
FIW	48.52 (0.17)	-232.76 (-0.47)	151.29 (0.22)
DJ2	-48.79 (-0.24)	-135.87 (-0.38)	138.23 (0.29)

Table A.1 (continued)

Independent Variable	Dependent Variable		
	S1	S2	S3
WS1/WS2	-4.81 (-1.50)	6.14 (1.11)	14.55 (1.97)
PP	0.0335 (1.00)	0.0447 (0.77)	0.0357 (0.46)
R^2	0.071	0.145	0.177
S_e	3029.84	5232.29	7011.81
df	2816	2816	2816
-	300.32	957.76	1629.74

Table A2

Equations

CAS Data Set

Households Grouped By Wealth Class*
(t-ratios in parentheses)

Independent Variable	Holdings of Savings Accounts Wealth Class 1	2	3
constant	761.33	3498.57	2002.91
SA(t-1)	0.691	0.894	1.000
	(46.06)	(58.43)	(38.45)
GB(t-1)	0.177	-0.0353	0.0365
	(2.37)	(-0.49)	(0.68)
CS(t-1)	-0.0211	-0.0627	-0.0369
	(-1.34)	(-6.57)	(-1.87)
OVH	-0.0122	-0.0524	-0.0331
	(-1.99)	(-3.64)	(-0.81)
HMD	0.00785	0.0333	0.111
	(1.19)	(2.49)	(2.42)
SC1	-57.50	-189.69	-1888.42
	(-0.45)	(-0.45)	(-0.91)
SC2	-5.13	-169.47	-1229.57
	(-0.04)	(-0.48)	(-0.72)
HD1	37.49	248.58	-777.79
	(0.42)	(1.05)	(-0.66)
HD2	-135.68	-433.31	-116.46
	(-1.13)	(-1.01)	(-0.05)
HD3	64.21	-599.33	-797.15
	(0.68)	(-1.97)	(-6.20)
WS1	0.0307	0.0249	0.0586
	(3.48)	(1.71)	(1.63)
WS2	0.0593	0.0154	0.102
	(2.70)	(0.33)	(0.40)

* 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

Table A2 (continued)

Independent Variable	Holdings of Savings Accounts — Wealth Class 1	2	3
WS3	-0.0303 (-0.54)	-0.183 (-1.50)	-0.154 (-0.37)
ID	0.154 (2.77)	0.135 (1.05)	-0.119 (-1.55)
RI	-0.00924 (-0.18)	0.0600 (0.91)	0.108 (0.91)
GI	0.0864 (2.36)	0.0813 (2.07)	0.132 (1.41)
BI	0.0248 (2.36)	0.333 (1.94)	0.0495 (1.47)
SS	0.0109 (0.30)	-0.447 (8.31)	0.277 (-0.34)
PI	0.0177 (0.30)	0.0977 (8.31)	-0.150 (-0.34)
OI	0.102 (3.43)	0.237 (3.21)	0.290 (0.51)
CG	-0.0923 (-1.64)	0.0453 (0.79)	0.116 (1.96)
GH	-0.0215 (-3.36)	-0.0598 (-4.42)	-0.0405 (-1.26)
CGVH	-0.0270 (-0.39)	-0.0392 (-0.81)	-0.0604 (-1.02)
LI	52.64 (0.59)	-634.13 (-2.33	-110.92 (-0.09)
DY	0.0146 (1.64)	-0.0167 (-0.76)	-0.0405 (-1.26)
IND	-0.154 (-2.41)	0.0779 (0.24)	-0.0604 (-1.02)

Table A2 (continued)

Independent Variable	Holdings of Savings Accounts Wealth Class 1	2	3
A1	-159.95 (-0.33)	-11.23 (-0.01)	1108.84 (0.31)
A2	-173.93 (-0.37)	-110.54 (-0.13)	468.70 (1.98)
A3	-145.88 (-0.31)	64.83 (0.08)	-1846.23 (-0.91)
A4	156.33 (0.32)	435.27 (0.55)	37.12 (0.02)
EH1	-273.05 (0.97)	420.92 (0.56)	5211.69 (1.47)
EH2	-78.31 (-0.40)	774.21 (1.25)	-2917.81 (-0.94)
EH3	-66.37 (-0.55)	-129.47 (-0.40)	172.81 (0.31)
EH4	-113.15 (-1.00)	-206.13 (-0.68)	332.31 (0.27)
EH5	-30.49 (-0.29)	-44.33 (-0.17)	-232.97 (0.22)
C1	-655.00 (-3.09)	-673.21 (-0.55)	-58,721.95 (-8.77)
C2	-714.97 (-3.09)	-607.68 (0.52)	-60,158.29 (-9.25)
C3	-639.09 (-2.45)	28.72 (0.02)	-59,568.73 (-8.10)
C4	-862.01 (-1.98)	-1162.77 (-0.82)	
C5	-893.52 (-1.51)	137.75 (0.07)	

Table A2 (continued)

Independent Variable	Holdings of Savings Accounts Wealth Class 1	2	3
C6	-141.27 (-0.28)	-275.59 (-0.13)	-60,091.77 (-7.49)
CC1	116.16 (1.39)	-218.51 (-0.81)	674.54 (0.62)
CC2	-1764.60 (-6.88)	85.98 (0.16)	-737.72 (-0.42)
CC3	614.83 (0.44)	1367.34 (0.97)	6557.24 (1.45)
DMC	664.83 (3.38)	343.78 (3.11)	58,538.80 (9.87)
PE1	-128.46 (-0.86)	871.88 (2.02)	640.66 (0.39)
PE2	-51.46 (-0.48)	321.82 (1.08)	-1113.65 (-0.88)
PE3	-22.73 (-0.19)	586.51 (1.77)	-786.27 (-0.59)
PE4	-90.19 (-0.63)	642.47 (1.57)	391.97 (0.25)
OCC2	-214.01 (-0.91)	-1254.58 (-1.34)	
OCC3	-326.90 (-1.74)	-621.13 (-0.98)	-3472.90 (-0.93)
OCC4	-145.96 (-0.72)	276.02 (0.44)	-17.87 (-0.01)
OCC5	-227.23 (-1.29)	-254.49 (-0.47)	2628.27 (1.34)
OCC6	-227.54 (-1.37)	-85.29 (-0.16)	3047.63 (1.58)

Independent Variable	Holdings of Savings Accounts Wealth Class 1	2	3
FTW	-114.33 (-0.67)	569.91 (1.00)	2161.62 (1.17)
DJ2	-9.11 (-0.08)	75.73 (0.19)	409.71 (0.19)
WS1/WS2	-2.75 (-1.16)	-7.74 (-1.57)	0.0243 (0.002)
PP	0.170 (1.51)	-0.0752 (-0.28)	1.334 (1.41)
R^2	0.649	0.824	0.953
S_e	1333.16	3041.46	4935.56
df	1479	1013	150
-	1567.25	6208.15	18,660.43

Table A2 (continued)

Independent Variable	Holdings of Government Bonds Wealth Class 1	2	3
constant	-16.83	65.52	-2483.24
SA(t-1)	-0.00285 (-1.21)	-0.0049 (-0.27)	
GB(t-1)	1.023 (87.55)	1.011 (118.08)	
CS(t-1)	0.00028 (1.14)	-0.00025 (-0.22)	-0.0237 (-0.84)
OVH	0.0190 (1.98)	-0.00148 (-0.14)	-0.0787 (-1.26)
HMD	-0.00124 (-1.20)	0.00066 (0.41)	0.0191 (0.27)
SC1	0.544 (0.03)	27.44 (0.55)	-1633.16 (-0.51)
SC2	57.72 (3.07)	-40.70 (-0.97)	-641.41 (-0.24)
HD1	-13.22 (-0.96)	18.35 (0.65)	-515.00 (-0.28)
HD2	-25.77 (-1.37)	39.17 (0.76)	4444.58 (1.34)
HD3	26.91 (1.82)	25.31 (0.75)	-356.25 (-0.18)
WS1	0.00178 (1.29)	0.00047 (0.27)	-0.00631 (-0.11)
WS2	0.00173 (0.50)	0.00114 (0.21)	2.068 (5.83)
WS3	0.00797 (0.91)	0.00176 (0.12)	0.149 (1.60)
ID	-0.00345 (-0.40)	0.00820 (0.53)	-0.0121 (-0.71)
RI	-0.00347 (-0.44)	-0.00129 (-0.16)	-0.00102 (-0.04)

Table A2 (continued)

Independent Variable	Holdings of Government Bonds Wealth Class 1	2	3
GI	-0.00128 (-0.22)	0.00978 (2.08)	0.0747 (3.59)
BI	0.00128 (0.78)	-0.00092 (-0.45)	0.00353 (0.47)
SS	-0.00897 (-0.29)	-0.0260 (-0.58)	0.0582 (0.35)
PI	-0.00971 (-1.06)	0.00677 (0.48)	0.0115 (0.12)
OI	0.00405 (0.87)	0.00235 (0.27)	-0.0401 (-0.32)
CG	-0.00220 (-0.25)	-0.00377 (-0.55)	0.00283 (0.22)
CGH	0.00187 (1.87)	-0.00112 (-0.70)	-0.0126 (-1.77)
CGVH	-0.00360 (-0.33)	-0.00447 (-0.07)	-0.00433 (-0.33)
LI	6.90 (0.49)	-2.22 (-0.07)	487.24 (1.72)
DY	-0.00081 (-0.58)	0.00338 (1.28)	0.0292 (2.31)
IND	-0.00918 (-0.92	-0.0159 (-0.41)	-0.212 (-1.11)
A1	17.41 (0.23)	-103.52 (-0.77)	88.51 (0.11)
A2	-9.53 (-0.58)	-46.31 (-0.47)	-212.30 (-0.40)
A3	-16.18 (-0.22)	-14.73 (-0.16)	-45.05 (-0.10)
A4	38.19 (0.50)	7.31 (0.08)	176.95 (0.39)
EH1	-43.55 (-0.99)	-45.36 (-0.50)	-886.41 (-1.13)

Table A2 (continued)

Independent Variable	Holdings of Government Bonds Wealth Class 1	2	3
EH2	-1.78 (-0.06)	39.16 (0.53)	-324.72 (-0.47)
EH3	5.80 (0.31)	48.76 (1.25)	-221.71 (-0.76)
EH4	22.28 (1.26)	41.79 (1.15)	-148.61 (-0.54)
EH5	17.55 (1.08)	13.88 (0.44)	-400.63 (-1.74)
C1	58.86 (1.78)	-44.47 (-0.30)	204.32 (0.14)
C2	40.72 (1.12)	-22.35 (-0.16)	149.52 (0.10)
C3	30.80 (0.75)	-6.03 (-0.38)	-176.31 (-0.11)
C4	89.03 (1.31)	-123.30 (-0.73)	
C5	92.30 (1.00)	-5.74 (-0.03)	
C6	43.87 (0.54)	39.89 (0.16)	86.58 (0.05)
CC1	-15.61 (-0.83)	-6.51 (-0.20)	-361.70 (-1.49)
CC2	-47.19 (-1.18)	-48.06 (-0.73)	416.51 (1.06)
CC3	92.79 (0.43)	90.60 (0.54)	-703.70 (-0.70)
DMC	-47.16 (-1.53)	34.07 (0.26)	17.90 (0.01)
PE1	-0.504 (-0.02)	15.20 (0.30)	-300.64 (-0.83)
PE2	-5.86 (-0.35)	40.77 (1.14)	-437.50 (-1.55)

Table A2 (continued)

Independent Variable	Holdings of Government Bonds Wealth Class 1	2	3
PE3	-2.37	8.87	-348.86
	(-0.13)	(0.22)	(-1.17)
PE4	-37.73	-7.65	-501.15
	(-1.68)	(-0.16)	(-1.44)
OCC2	14.70	-117.13	
	(0.40)	(-1.05)	
OCC3	7.89	7.12	900.61
	(0.27)	(0.09)	(1.08)
OCC4	-25.18	-105.63	289.70
	(-0.79)	(-1.40)	(0.56)
OCC5	4.52	-105.80	50.55
	(0.16)	(-1.40)	(0.12)
OCC6	24.05	-82.18	-170.98
	(0.92)	(-1.31)	(-0.40)
FTW	-14.41	-68.02	150.05
	(-0.54)	(-1.00)	(0.36)
DJ2	4.57	-58.67	-29.64
	(0.26)	(-1.21)	(-0.62)
WS1/WS2	0.288	-0.306	2.42
	(0.77)	(-0.52)	(0.69)
PP	0.0213	0.0568	-0.119
	(1.21)	(1.78)	(-0.57)
R^2	0.845	0.935	0.987
S_e	208.62	362.85	1095.17
df	1479	1013	150
$\bar{\bar{x}}$	218.80	573.95	2586.63

Table A2 (continued)

Independent Variable	Net Investment in Common Stock Wealth Class 1	2	3	Investment in Property Wealth Class 1	2	3
constant	-60.64	3251.67	4500.08	-1915.80	-3624.09	13,724.47
SA(t-1)	0.0197 (2.39)	-0.0367 (-2.02)	-0.0933 (-1.74)	0.109 (2.62)	-0.0213 (-0.95)	0.137 (2.27)
GB(t-1)	-0.0109 (-0.27)	-0.00639 (-0.08)	-0.148 (-1.35)	-0.0471 (-0.23)	-0.0824 (-0.79)	-0.0554 (-0.45)
CS(t-1	-0.00877 (-1.02)	-0.107 (-9.50)	-0.222 (-5.47)	0.00832 (0.19)	0.0122 (0.88)	0.0148 (0.32)
OVH	-0.00152 (-0.45)	-0.0873 (-5.12)	0.00375 (0.04)	-0.00695 (-0.41)	-0.00820 (-0.39)	-0.0633 (-0.66)
HMD	0.00052 (0.14)	0.0866 (5.47)	0.0385 (0.41)	-0.00007 (-0.004)	-0.0315 (-1.62)	-0.0386 (-0.36)
SC1	-37.80 (-0.43)	-312.94 (0.63)	-1851.69 (-0.43)	-212.72 (-0.48)	958.43 (1.57)	-1809.75 (-0.38)
SC2	15.08 (0.23)	679.59 (1.63)	-548.15 (-0.15)	344.50 (1.03)	-273.96 (-0.54)	245.00 (0.06)
HD1	10.87 (0.22)	-256.39 (-0.91)	-6635.38 (-2.74)	275.57 (1.12)	474.71 (1.37)	2210.11 (0.81)
HD2	-40.82 (-0.62)	13.34 (0.03)	1025.67 (0.22)	9.31 (0.03)	864.01 (1.38)	-486.39 (-0.10)
HD3	-20.83 (-0.40)	20.47 (0.06)	-105.83 (-0.04)	197.72 (0.75)	-110.63 (-0.27)	-1493.36 (-0.50)
WS1	0.00817 (1.69)	0.124 (7.19)	0.201 (2.70)	0.0687 (2.80)	0.151 (7.13)	0.158 (1.89)
WS2	0.0248 (2.05)	-0.464 (-8.48)	0.134 (0.26)	-0.0739 (-1.21)	0.224 (3.32)	-0.144 (-0.24)

Table A2 (continued)

Independent Variable	Net Investment in Common Stock Wealth Class 1	2	3	Investment in Property Wealth Class 1	2	3
WS3	-0.00760 (-0.25)	0.0735 (0.51)	-0.591 (-0.69)	0.0693 (0.44)	-0.0463 (-0.26)	-0.504 (-0.52)
ID	0.0117 (0.38)	0.261 (1.70)	0.451 (2.84)	-0.0912 (-0.59)	0.233 (1.23)	0.0563 (0.32)
RI	0.0458 (1.64)	-0.0385 (-0.49)	-0.247 (-1.01)	0.321 (2.27)	0.480 (4.99)	0.119 (0.43)
GI	0.00357 (0.17)	0.140 (3.00)	0.647 (3.35)	-0.0226 (-0.22)	0.00360 (0.06)	0.394 (1.81)
BI	0.0287 (4.97)	0.0300 (1.48)	0.129 (1.86)	0.106 (3.62)	0.168 (6.76)	0.0523 (0.67)
SS	0.0889 (0.08)	-0.296 (-0.67)	-0.743 (-0.48)	0.177 (0.32)	-0.164 (-0.30)	-0.534 (-0.31)
PI	-0.0183 (-0.57)	0.0568 (0.41)	1.083 (1.18)	0.521 (3.21)	-0.00707 (-0.04)	0.291 (0.28)
OI	-0.0117 (-0.71)	0.127 (1.45)	0.443 (0.38)	-0.00268 (-0.03)	-0.176 (-1.64)	-1.111 (-0.85)
CG	0.0619 (2.00)	0.0195 (0.29)	-0.154 (-1.26)	1.860 (11.87)	0.508 (6.12)	-0.0581 (-0.42)
CGH	0.00185 (0.53)	-0.112 (-6.99)	-0.0651 (-0.98)	-0.00914 (-0.51)	0.0439 (2.23)	0.0628 (0.84)
GVH	-0.00441 (-0.12)	-0.0613 (-1.07)	-0.249 (-2.05)	-0.124 (-0.64)	0.0435 (0.62)	0.0315 (0.23)
LI	34.44 (0.70)	-523.79 (-1.69)	4596.01 (1.75)	205.68 (0.82)	-162.69 (-0.41)	4791.14 (1.62)
DY	-0.00036 (-0.07)	0.158 (6.05)	0.201 (1.71)	0.0331 (1.34)	-0.118 (-3.67)	0.368 (2.79)
IND	-0.0602 (-1.72)	-0.0925 (0.24)	-1.708 (-0.96)	-0.0104 (-0.59)	-0.349 (-0.73)	-5.17 (-2.59)
A1	60.90 (0.23)	448.12 (0.34)	15,637.56 (2.15)	634.29 (0.46)	-23.69 (-0.01)	10,921.39 (1.33)
A2	96.81 (0.37)	-688.40 (-0.71)	5928.93 (1.21)	232.19 (0.18)	-194.34 (-0.16)	11,879.81 (2.16)

Table A2 (continued)

Independent Variable	Net Investment in Common Stock Wealth Class 1	2	3	Investment in Property Wealth Class 1	2	3
A3	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)
A4	156.85	-391.40	-372.46	-249.10	875.56	8327.93
	(0.58)	(-0.41)	(0.09)	(-0.18)	(0.75)	(1.73)
EH1	-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)
EH2	21.04	522.39	3977.38	1201.37	147.01	5272.58
	(0.19)	(0.71)	(0.62)	(2.20)	(0.16)	(0.73)
EH3	8.34	997.75	2953.80	78.73	183.79	4014.66
	(0.13)	(2.59)	(1.09)	(0.24)	(0.39)	(1.32)
EH4	64.92	553.14	192.36	382.70	310.63	-22.62
	(1.05)	(1.54)	(0.07)	(1.22)	(0.70)	(-0.01)
EH5	39.27	443.25	3118.29	23.52	133.12	-341.66
	(0.69)	(1.40)	(1.46)	(0.08)	(0.34)	(-0.14)
C1	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)
C2	-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)
C3	-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)
C4	161.81	4980.83		87.55	2922.65	
	(0.68)	(2.96)		(0.07)	(1.41)	
C5	-401.38	-2416.46		-1069.18	-48.14	
	(-1.24)	(-1.08)		(-0.65)	(-0.02)	
C6	-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)
CC1	-42.03	51.90	1829.24	393.57	-351.22	-2817.89
	(-0.64)	(0.16)	(0.81)	(1.18)	(-0.89)	(-1.07)
CC2	44.08	-1931.05	1157.54	418.99	413.36	4707.38
	(0.31)	(-2.97)	(0.32)	(0.59)	(0.52)	(1.14)
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)

Table A2 (continued)

Independent Variable	Net Investment in Common Stock Wealth Class 1	2	3	Investment in Property Wealth Class 1	2	3
DMC	175.26 (1.63)	592.26 (0.45)	48,994.91 (4.01)	-278.31 (-0.51)	-56.75 (-0.04)	1158.47 (0.08)
PE1	-68.03 (-0.83)	-347.98 (-0.68)	-1116.06 (-0.33)	75.67 (0.18)	270.92 (0.43)	-9499.51 (-2.50)
PE2	37.38 (0.64)	283.69 (0.80)	3089.25 (1.18)	95.08 (0.32)	166.99 (0.39)	-2581.90 (-0.87)
PE3	1.54 (0.02)	425.93 (1.09)	4310.27 (1.56)	-268.88 (-0.51)	248.13 (0.51)	-4676.98 (-1.50)
PE4	12.57 (0.16)	1291.74 (2.67)	1193.08 (0.37)	367.00 (0.92)	26.49 (0.04)	-6016.59 (-1.65)
OCC2	-215.23 (-1.67)	-830.50 (-0.75)		302.12 (0.46)	151.35 (0.11)	
OCC3	-79.29 (-0.77)	-903.92 (-1.21)	-1965.03 (-0.25)	318.49 (0.61)	833.25 (0.91)	-7171.22 (-0.82)
OCC4	-67.91 (-0.61)	-591.27 (-0.79)	-758.98 (-0.16)	731.81 (1.29)	202.53 (0.22)	-471.93 (-0.09)
OCC5	-22.64 (-0.23)	-529.32 (-0.82)	-2127.88 (-0.53)	356.32 (0.73)	32.87 (0.04)	368.27 (0.08)
OCC6	-8.77 (-0.10)	-391.48 (-0.63)	1394.68 (0.35)	1.94 (0.004)	813.03 (1.06)	-1665.15 (-0.37)
FTW	-111.83 (-1.20)	-500.26 (-0.74)	2435.44 (0.64)	339.52 (0.72)	-184.24 (-0.22)	3485.85 (0.82)
D2J	-65.54 (-1.06)	72.60 (0.15)	-4651.30 (-1.05)	412.60 (1.33)	124.10 (0.21)	-2057.25 (-0.41)
WS1/WS2	-1.90 (-1.46)	26.41 (4.53)	-32.92 (-1.00)	6.83 (1.03)	11.93 (1.66)	26.17 (0.71)
PP	0.0768 (1.25)	0.518 (1.64)	-1.292 (-0.66)	-0.158 (-0.51)	-0.409 (-1.05)	3.010 (1.37)
R^2	0.063	0.270	0.532	0.135	0.225	0.293
S_e	731.74	3600.72	10,170.79	3707.34	4431.02	11,459.51
df	1479	1013	150	1479	1013	150
$\bar{x}$	132.41	725.46	3926.45	388.98	671.97	3091.93

Table A2 (continued)

Independent Variable	Investment in Fixed Claims Wealth Class 1	2	3	Investment in Financial Assets Wealth Class 1	2	3
constant	746.28	3564.06	2560.42	685.65	6815.70	7060.52
SA(t-1)	-0.311 (-20.45)	-0.107 (-6.88)	0.00336 (0.12)	-0.292 (-17.29)	-0.143 (-6.38)	-0.0899 (-1.65)
GB(t-1)	0.199 (2.63)	-0.0246 (-0.34)	0.0590 (1.05)	0.188 (2.24)	-0.0310 (-0.29)	-0.0893 (-0.80)
CS(t-1)	-0.0208 (-1.31)	-0.0630 (-6.54)	-0.0361 (-1.74)	-0.0296 (-1.68)	-0.170 (-12.17)	-0.258 (-6.25)
OVH	-0.0103 (-2.13)	-0.0539 (-3.71)	-0.0402 (-0.93)	-0.0119 (-1.71)	-0.141 (-6.69)	-0.0364 (-0.42)
HMD	0.00662 (0.99)	0.0340 (2.52)	0.129 (2.66)	0.00714 (0.96)	0.121 (6.15)	0.167 (1.74)
SC1	-71.11 (-0.44)	-162.22 (-0.38)	-1648.97 (-0.76)	-108.91 (-0.60)	-475.16 (-0.77)	-3500.66 (-0.81)
SC2	52.60 (0.43)	-210.17 (-0.59)	-1.64 (-.001)	67.68 (-0.50)	469.42 (0.91)	-549.78 (-1.52)
HD1	24.28 (0.27)	266.94 (1.11)	-617.17 (-0.50)	35.15 (0.35)	10.55 (0.03)	-7252.55 (-2.94)
HD2	-161.76 (-1.32)	-394.14 (-0.91)	-978.36 (-0.46)	-202.58 (-1.49)	-380.80 (-0.60)	47.32 (0.01)
HD3	91.12 (0.95)	-533.96 (-1.86)	-758.06 (-0.56)	70.28 (0.66)	-513.49 (-1.23)	-863.88 (-0.32)
WS1	0.0325 (3.62)	0.0254 (1.73)	0.0696 (1.84)	0.0406 (4.09)	0.150 (7.00)	0.270 (3.58)
WS2	0.0611 (2.73)	0.0165 (0.35)	0.0592 (0.22)	0.0860 (3.46)	-0.448 (-6.61)	0.193 (0.36)

Table A2 (continued)

Independent Variable	Investment in Fixed Claims Wealth Class			Investment in Financial Assets Wealth Class		
	1	2	3	1	2	3
WS3	-0.0223 (-0.39)	-0.181 (-1.47)	-0.00547 (-0.01)	-0.0299 (-0.47)	-0.108 (-0.60)	-0.596 (-0.68)
ID	0.151 (2.67)	0.144 (1.10)	-0.131 (-1.62)	0.163 (2.59)	0.405 (2.14)	0.319 (1.98)
RI	-0.0127 (-0.25)	0.0587 (0.88)	0.107 (0.86)	0.0331 (0.58)	0.0202 (0.21)	-0.140 (-0.57)
GI	0.0851 (2.24)	0.0911 (2.29)	0.207 (2.09)	0.0887 (2.10)	0.231 (4.00)	0.853 (4.34)
BI	0.0261 (2.44)	0.0323 (1.87)	0.0530 (1.50)	0.0548 (4.62)	0.0623 (2.48)	0.182 (2.58)
SS	0.00192 (0.01)	-0.473 (-1.25)	0.336 (0.42)	0.0908 (0.41)	-0.769 (-1.40)	-0.407 (-0.26)
PI	0.00798 (0.13)	0.104 (0.88)	-0.138 (-0.30)	-0.0103 (-0.16)	0.161 (0.94)	0.945 (1.01)
OI	0.106 (3.50)	0.240 (3.21)	0.250 (1.41)	0.0943 (2.81)	0.367 (3.39)	0.693 (0.59)
CG	-0.0945 (-1.65)	0.0416 (0.72)	0.119 (1.91)	-0.0326 (-0.51)	0.0611 (0.73)	-0.0348 (-0.28)
CGH	-0.0196 (-3.02)	-0.0609 (-4.46)	-0.0532 (-1.58)	-0.0178 (-2.47)	-0.173 (-8.73)	-0.118 (-1.76)
CGVH	-0.0306 (-0.43)	-0.0436 (-0.89)	-0.0648 (-1.04)	-0.0350 (-0.44)	-0.105 (-1.48)	-0.314 (-2.54)
LI	59.61 (0.65)	-636.34 (-2.32)	376.36 (0.28)	94.05 (0.93)	-1160.13 (-2.91)	4972.37 (1.86)
DY	0.0138 (1.53)	-0.0134 (-0.60)	-0.0176 (-0.29)	0.0135 (1.34)	0.145 (4.48)	0.183 (1.53)
IND	-0.163 (-2.51)	0.0620 (0.19)	-0.708 (-0.78)	-0.224 (-3.10)	-0.0306 (-0.06)	-2.416 (-1.34)
A1	-142.52 (-0.29)	-114.79 (-0.10)	1197.55 (0.32)	-81.64 (-0.15)	333.33 (0.20)	16,835.09 (2.27)
A2	-183.51 (-0.38)	-156.85 (-0.19)	256.41 (0.10)	-86.72 (-0.16)	-845.24 (-0.71)	6185.32 (1.24)
A3	-162.11 (-0.34)	50.10 (0.06)	-1891.16 (-0.89)	-144.54 (-0.27)	-842.90 (-0.73)	-330.69 (-0.08)

Table A2 (continued)

Independent Variable	Investment in Fixed Claims Wealth Class 1	2	3	Investment in Financial Assets Wealth Class 1	2	3
A4	194.49 (0.39)	442.55 (0.55)	214.05 (0.98)	351.32 (0.64)	51.66 (0.04)	-158.42 (-0.04)
EH1	-316.67 (-1.11)	375.69 (0.49)	4326.02 (1.16)	-395.17 (-1.25)	1180.44 (1.06)	7358.62 (0.99)
EH2	-80.61 (-0.40)	813.48 (1.30)	-3243.07 (-1.00)	-59.57 (-0.27)	1335.88 (1.47)	734.30 (0.11)
EH3	-60.58 (-0.50)	-80.70 (-0.25)	-48.90 (-0.04)	-52.24 (-0.39)	917.05 (1.92)	2904.89 (1.06)
EH4	-90.86 (-0.79)	-164.32 (-0.53)	183.68 (0.14)	-25.94 (-0.20)	388.82 (0.87)	376.05 (0.14)
EH5	-12.94 (-0.12)	-30.46 (-0.11)	-633.59 (-0.58)	26.33 (0.23)	412.80 (1.06)	2484.70 (1.14)
C1	-596.19 (-2.77)	-717.53 (-0.58)	-58,511.52 (-8.31)	-499.17 (-2.09)	-2287.00 (-1.27)	-102,827 (-7.33)
C2	-674.13 (-2.89)	-630.07 (-0.53)	-60,018.80 (-8.78)	-802.74 (-3.08)	-1617.78 (-0.90)	-114,398 (-8.40)
C3	-608.27 (-2.29)	22.69 (0.02)	-59,740.30 (-7.72)	-763.53 (-2.59)	-2354.77 (-1.22)	-121,089 (-7.86)
C4	-773.36 (-1.75)	-1285.76 (-0.90)		-611.55 (-1.25)	3695.05 (1.77)	
C5	-800.93 (-1.34)	132.01 (0.07)		-1202.31 (-1.81)	-2284.48 (-0.83)	
C6	-97.37 (-0.19)	-235.49 (-0.11)	-59,982.15 (-7.11)	-469.22 (-0.81)	-1993.16 (-0.65)	-111,411 (-6.63)
CC1	100.79 (0.83)	-225.01 (-0.82)	312.83 (2.71)	58.76 (0.43)	-173.11 (-0.44)	2142.06 (0.93)
CC2	-1812.15 (-6.95)	37.92 (0.07)	-321.17 (-0.17)	-1768.06 (-6.11)	-1893.13 (-2.36)	836.37 (0.22)
CC3	707.82 (0.50)	1458.69 (1.02)	5853.09 (1.23)	853.96 (0.55)	2783.72 (1.35)	462.65 (0.[illegible])
DMC	617.75 (3.09)	377.82 (0.34)	58,549.79 (9.39)	793.01 (3.58)	970.10 (0.60)	107,545 (8.65)
PE1	-129.01 (-0.84)	886.94 (2.04)	340.02 (0.20)	-197.04 (-1.16)	538.96 (0.85)	-776.05 (-0.23)

Table A2 (continued)

Independent Variable	Investment in Fixed Claims Wealth Class 1	2	3	Investment in Financial Assets Wealth Class 1	2	3
PE2	-57.34 (-0.53)	362.58 (1.20)	-1551.09 (-1.16)	-19.96 (-0.17)	646.27 (1.48)	1538.16 (0.58)
PE3	-25.11 (-0.21)	595.35 (1.78)	-1135.17 (-0.80)	-23.57 (-0.18)	1021.28 (2.11)	3175.09 (1.13)
PE4	-127.97 (-0.88)	634.91 (1.54)	-109.18 (-0.07)	-115.39 (-0.71)	1926.66 (3.22)	1083.89 (0.33)
OCC2	-199.33 (-0.83)	-1371.55 (-1.45)		-414.56 (-1.56)	-2202.04 (-1.60)	
OCC3	-319.01 (-1.67)	-614.00 (-0.96)	-2572.73 (-0.65)	-398.30 (-1.88)	-1517.91 (-1.64)	-4537.77 (-0.58)
OCC4	-171.16 (-0.83)	170.40 (0.27)	271.80 (0.11)	-239.08 (-1.04)	-420.87 (-0.46)	-487.19 (-0.10)
OCC5	-222.74 (-1.24)	-360.29 (-0.65)	2678.80 (1.30)	-245.38 (-1.23)	-889.60 (-1.11)	550.91 (0.13)
OCC6	-203.55 (-1.20)	-167.47 (-0.31)	2876.42 (1.41)	-212.32 (-1.13)	-558.94 (-0.72)	4271.09 (1.05)
FTW	-128.73 (-0.74)	501.94 (0.87)	2311.56 (1.19)	-240.57 (-1.25)	1.69 (0.002)	4746.99 (0.95)
D2J	-4.545 (-0.04)	17.06 (0.04)	380.07 (0.17)	-70.09 (-0.56)	89.66 (0.15)	-4271.21 (-0.95)
WS1/WS2	-2.47 (-1.02)	-8.04 (-1.62)	2.45 (0.15)	-4.37 (-1.63)	18.37 (2.55)	-30.47 (-0.91)
PP	0.191 (1.68)	-0.0184 (-0.07)	1.215 (1.22)	0.268 (2.12)	0.500 (1.28)	-0.0772 (-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
$\bar{x}$	73.20	453.13	1091.03	205.61	1178.59	5017.48

Table A2 (continued)

Independent Variable	Change in Total Assets Wealth Class 1	2	3
constant	-1230.14	3191.64	-6663.98
SA(t-1)	-0.183 (-4.21)	-0.164 (-5.54)	0.0475 (0.57)
GB(t-1)	0.141 (0.65)	-0.113 (-0.81)	-0.145 (-0.85)
CS(t-1)	-0.0213 (-0.47)	-0.158 (-8.54)	-0.243 (-3.85)
OVH	-0.0188 (-1.06)	-0.149 (-5.35)	-0.0997 (-0.76)
HMD	0.00707 (0.37)	0.0891 (3.43)	0.129 (0.87)
SC1	-321.63 (-0.69)	483.26 (0.59)	-5310.40 (-0.80)
SC2	412.18 (1.18)	195.45 (0.29)	-304.77 (-0.06)
HD1	310.72 (1.22)	485.27 (1.05)	-5042.43 (-1.34)
HD2	-193.27 (-0.56)	483.21 (0.58)	-439.07 (-0.06)
HD3	268.00 (0.98)	-624.12 (-1.13)	-2357.25 (-0.57)
WS1	0.109 (4.28)	0.301 (10.64)	0.428 (3.71)
WS2	0.0121 (0.19)	-0.224 (-2.49)	0.0495 (4.28)
WS3	0.0394 (0.24)	-0.154 (-0.65)	-1.100 (-0.82)
ID	0.0716 (0.44)	0.637 (2.54)	0.375 (1.52)
RI	0.354 (2.41)	0.500 (3.90)	-0.0214 (-0.06)
GI	0.0661 (0.61)	0.234 (3.07)	1.248 (4.15)

Table A2 (continued)

Independent Variable	Change in Total Assets Wealth Class 1	2	3
BI	0.160 (5.28)	0.231 (6.95)	0.235 (2.18)
SS	0.268 (0.47)	-0.933 (-1.28)	-0.941 (-0.39)
PI	0.511 (3.01)	0.154 (0.68)	1.236 (0.86)
OI	0.0917 (1.07)	0.190 (1.33)	-0.418 (-0.23)
CG	1.828 (11.21)	0.569 (5.14)	-0.0930 (-0.49)
CGH	-0.0269 (-1.45)	-0.129 (-4.90)	-0.0554 (-0.54)
CGVH	-0.0159 (-0.79)	-0.0614 (-0.65)	-0.282 (-1.49)
LI	299.73 (1.16)	-1322.83 (-2.51)	9763.51 (2.39)
DY	0.0466 (1.81)	0.0269 (0.63)	0.551 (3.02)
IND	-0.328 (-1.77)	-0.380 (-0.60)	-7.588 (-2.75)
A1	552.65 (0.39)	309.63 (0.14)	27,756.53 (2.45)
A2	145.47 (0.11)	-1039.60 (-0.65)	18,065.16 (2.38)
A3	-59.39 (-0.04)	-1215.06 (-0.79)	10,496.53 (1.62)
A4	102.22 (0.07)	926.69 (0.60)	8169.54 (1.23)
EH1	-148.08 (-0.18)	931.03 (0.63)	25,750.50 (2.27)
EH2	1141.80 (2.01)	1482.89 (1.23)	6006.89 (0.61)
EH3	26.49 (0.08)	1100.83 (1.74)	6919.55 (1.64)

Table A2 (continued)

Independent Variable	Change in Total Assets Wealth Class 1	2	3
EH4	356.76 (1.09)	699.45 (1.18)	353.43 (0.09)
EH5	49.85 (0.17)	545.91 (1.05)	2143.04 (0.64)
C1	-64.95 (-0.11)	-2085.33 (-0.88)	-105,271 (-4.90)
C2	-331.49 (-0.50)	-9.18 (-0.004)	-114,961 (-5.51)
C3	84.66 (0.11)	1831.79 (0.72)	-128,197 (-5.44)
C4	-523.99 (-0.42)	6617.72 (2.40)	
C5	-2271.49 (-1.33)	-2332.60 (-0.64)	
C6	-788.59 (-0.53)	-1079.13 (-0.27)	-114,205 (-4.44)
CC1	452.33 (1.30)	-524.33 (-1.00)	-675.83 (-0.19)
CC2	-1349.07 (-1.82)	-1479.77 (-1.39)	5543.77 (0.97)
CC3	-567.72 (-0.14)	1848.73 (0.67)	-9263.11 (-0.64)
DMC	514.69 (0.91)	913.33 (0.43)	108,703 (5.72)
PE1	-121.37 (-0.28)	809.89 (0.97)	-10,276 (-1.95)
PE2	75.11 (0.24)	813.26 (1.40)	-1043.74 (-0.26)
PE3	-292.46 (-0.85)	1269.41 (1.98)	-1501.89 (-0.35)
PE4	251.60 (0.61)	1953.15 (2.47)	-4932.69 (-0.98)
OCC2	-112.44 (-0.17)	-2050.69 (-1.13)	

Table A2 (continued)

Independent Variable	Change in Total Assets Wealth Class 1	2	3
OCC3	-79.81 (-0.15)	-684.67 (-0.56)	-11,709 (-0.97)
OCC4	492.73 (0.84)	-218.34 (-0.18)	-959.13 (-0.13)
OCC5	110.94 (0.22)	-856.74 (-0.81)	919.17 (0.15)
OCC6	-210.38 (-0.44)	254.08 (0.25)	2605.92 (0.42)
FTW	98.95 (0.20)	-182.56 (-0.16)	8232.83 (1.39)
D2J	342.51 (1.06)	213.76 (0.27)	-6328.46 (-0.92)
WS1/WS2	2.46 (0.36)	30.30 (3.21)	-4.30 (-0.08)
PP	0.110 (0.34)	0.0908 (0.17)	2.933 (0.96)
R^2	0.146	0.256	0.549
S_e	3857.45	5902.57	15,825.08
df	1479	1013	150
$\bar{x}$	594.59	1850.55	8109.41

Glossary For

Tables A3 and A4

DD: Holdings of demand deposits

SA: Holdings of savings accounts

FA: Holdings of financial assets

NW: Net worth

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

A1, A2, A3, A4: 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