SOME RELATIONSHIPS BETWEEN CONSUMER ATTITUDES AND SPENDING

John McNeil, Bureau of the Census

Introduction

A number of organizations are engaged in the collection of periodic survey data on consumer anticipations. These data are usually thought of as falling into two categories: attitudes and intentions. The former category includes those questions which seek to reveal the respondents feelings about his personal economic situation or about the economic situation in general. Intentions questions are concerned with expected purchases of specific items or groups of items.

Consumer anticipations data have been collected in the United States at least since the 1946 Survey of Consumer Finances. Among the organizations now engaged in collecting this information are the Survey Research Center of the University of Michigan, the Conference Board, the Albert Sindlinger Co., and the U.S. Bureau of the Census.

These data are collected with the expectation that they will make a net contribution to forecasts of consumer spending. The importance and difficulty of forecasting changes in consumer spending can hardly be exaggerated. Changes in consumer spending on durable goods, especially automobiles, are probably the most important source of cyclical instability,1/ and most forecasters regard consumer spending as the most intractable of sectors. Anticipations surveys owe their existence to the generally poor record of forecast equations which contain only the traditional stock, income, and price variables. The man who is most responsible for the initiation of consumer anticipations surveys, George Katona, states flatly that "attitudes matter" and "willingness to spend" must be given equal consideration with "ability to spend."

The failure of traditional equations and the acceptance of the proposition that attitudes are important does not necessarily lead to the conclusion that forecasts of consumer spending can be improved by using any of the survey results currently available. Twenty five years have passed since consumer anticipations data were first collected on a national basis, and the issue of predictive value is still alive. There have been, of course, a number of studies designed to measure the explanatory and predictive power of anticipations data. Before we consider the implications of some of the new results from the experimental Consumer Anticipations Survey, it might be useful to summarize some of these earlier studies.

A Review of Selected Studies

(1) In 1955, Klein and Lansing2/ offered this conclusion after a cross-section study of 1,000 households interviewed initially in early 1952 and again in early 1953:

> "In working with the attitudinal variables, we were particularly impressed with the importance of buying plans. The coefficient for this term in the equation was highly reliable, amounting to almost 4½ times its own standard error. Fluctuations from year to year in the estimated proportion who buy turned out to be dominated by plans to buy and by the feeling of financial well being. Nevertheless the whole analysis shows that buying plans alone are not adequate to discriminate between purchasers and nonpurchasers."
>
> "In addition to plans to buy, the question on feeling of financial well being stood up well. In each of our calculations, those who felt 'better off' were more likely to buy even after taking plans to buy and the other variables into account."

(2) In 1955, the report of the Consultant Committee on Consumer Survey Statistics3/ (organized by the Federal Reserve Board at the request of the Joint Committee on the Economic Report) contained this summary:

> (a) "Buying intentions, properly interpreted, appear to have predictive value. The extent of their predictive usefulness and the optimal way of combining them with other information are still to be determined by further research and experience.
>
> (b) Other attitudes are highly correlated with buying intentions, both over time and as among spending units; and there is so far no convincing evidence that they make an independent contribution to ability to predict, however interesting these attitudes may be for other purposes."

(3) In a paper published in 1960, Mueller4/ reported on the results of a panel study which involved four interviews with 800 households at 6 month intervals over the period June 1954 - December 1955. Mueller offers this conclusion:

> "The results of the tests described here are not yet conclusive. On the positive side were (1) the strong relationship between attitudes and purchases obtained in the aggregative test over the short period for which data were available, and (2) the findings that at the individual level attitudes exhibited a pronounced influence on purchases in two of the three periods studied (as long as buying plans were disregarded). On the negative side is the finding that data on consumer attitudes consistently made only a small net contribution to forecasts of consumer spending at the individual level, when income, age, and buying plans were also taken into account. However, theoretical considerations suggest that a small net contribution by the attitudinal data at the individual level is not inconsistent with a considerably greater contribution to forecasting at the aggregative level."

Mueller's paper presents an interesting discussion of the validity of using cross-section results to make judgements about probable time-series performance, she states:

"More important, some variables vary more over time than others. There are variables such as age or thrift which vary considerably between individuals, producing correlations with spending behavior in a cross-section without varying appreciably over time; their value to business cycle analysts or forecasters is almost nil. Hence any conclusions about the significance and relative importance of attitudes and buying plans must be drawn in the light of their cross-section relation to behavior and their variation over time.

Consideration of the bias imparted by omitted variables leads to similar conclusions. Kuh has demonstrated that 'the biases from excluded variables are likely to be of strikingly different nature in the two cases, time series and cross sections. Therefore, the propriety of applying estimated behavior relations for prediction purposes in one context that were estimated in another context is highly questionable.' The time-series error is likely to be caused by dynamic excluded variables, which vary to some extent with the business cycle; the cross-section error primarily to static excluded variables such as demographic characteristics, personality traits, stocks of durable goods owned. Conceivably consumer attitudes, having a clear business cycle reference, are correlated with the dynamic excluded variables and reflect some of their impact on spending, while buying plans may be more closely related to the static excluded variables. If this assumption is correct, time-series tests would have a tendency to overestimate the influence of attitudes and cross-section tests a tendency to overestimate the influence of buying plans."

In a comment on Mueller's paper, Eisner makes this statement:

"To summarize, I think the weight of evidence including the new data presented by Miss Mueller suggest that consumer-intentions data in the major household expenditures on durable goods area do have predictive value, whereas the evidence for consumer attitudes as distinct from intentions is mostly negative though not conclusive."

(4) In a paper published in 1960, Arthur Okun[5/] examined the time-series performance of the anticipations data collected by the Survey Research Center during the period 1949-1955. His results showed that buying plans made a net contribution to the explanation of expenditures on cars, but were not useful in explaining expenditures on other durables. No other SRC attitudinal measure made a contribution to the explanation of expenditures net of buying plans.

Okun also demonstrated mathematically that if intentions have predictive value in the cross-section, they will also have, except under certain unrealistic conditions, predictive value over time. Unfortunately, the demonstration does not tell us anything about the amount of variance intentions are likely to explain, nor does it tell us whether predictive value will exist net of other variables.

(5) In 1959, Tobin[6/] offered these conclusions from a cross-section study:

"Buying intentions have predictive value; other attitudinal questions do not. This conclusion is the inescapable testimony of this analysis of the evidence of this reinterview sample."

(6) In 1963, Mueller[7/] presented the results of a time-series study, of the explanatory value of attitudes and intentions. Her regression results indicated that attitudes, but not intentions, had predictive value. The analysis did not attempt to prove that attitudinal variables had predictive usefulness net of all "objective" variables, but several income variables as well as lagged depedent variables were included to test their effect on the estimated coefficients of the attitudinal variables.

(7) In an exhaustive cross-section study published in 1964, Juster[8/] found that intentions to buy were highly significant in explaining actual purchases. Only income and a question asking "whether there is a good or bad time to buy durables" are consistently significant when intentions are present in the equation.

Juster also states: "The most important finding is that consumer buying intentions essentially reflect judgements by respondents about their probability of purchasing a particular commodity. It follows as a matter of course that surveys should attempt to estimate mean purchase probability in the population, not the proportion with sufficiently high probabilities to report that they 'intend to buy'."

(8) In a 1964 paper, Adams[9/] investigated the time series performance of the SRC measures of attitudes and intentions to buy, using 24 observations covering the period 1952-62. His conclusion:

"Regression analysis of attitudes and of buying plans as predictors of consumer durable expenditures show that attitudes made a significant contribution to forecasting durable expenditures. Buying plans do not improve the correlation once the income and attitudes are present in the equation..."

(9) In a 1966 paper, Juster[10/] reported on a test of a "new" method of measuring expected purchases. The test was the basis for the Census Bureau's decision to move from an "intentions" format to a "probability" format. The intentions question asked respondents if they "expected to buy." The probability question asks respondents about their "chances (in 100) of buying." According to Juster:

"A number of points stand out. First, it is clear that households classified as nonintenders have been successfully distributed into more homogeneous subgroups by the probability

survey.... It is not so clear that the probability scale works as well among the straightforward intender classes.... On the other hand, the intentions classes do not generally appear to be effective discriminators within probability classes.... Finally, it should be noted that the vast majority of purchases are made by households that report non-zero purchase probabilities."

(10) In a paper prepared in 1967 but published in 1969, Juster[11] examined a number of models, based primarily on anticipatory variables. This was one of the first studies to include an analysis of the time-series performance of the Census Bureau series on buying intentions. The models were estimated over several time periods, including the period 1953-1967. The buying intentions series used for the longer time periods linked the SRC series on intentions to the Census Bureau series to obtain pre-1959 values (the Census Bureau survey began in 1959). Juster concludes:

"On the whole, this examination of anticipatory demand models brings out two clear-cut conclusions. First, the anticipations series themselves are strong cyclical indicators; both consumer attitudes and consumer buying intentions have cyclical turning points which precede those in durable goods and automobile expenditures by about six months. The attitude index appears to be a bit better at reflecting turning points than buying intentions, partly because the series itself is considerably reduced since the initiation of the large sample Census Bureau survey in 1959.

Although both anticipations series contain pronounced cyclical movements, only buying intentions appear to have a distinct trend component. This factor works to the comparative disadvantage of the attitude variable in regression models, since all of the trend influences on durable goods expenditures must be picked up by other variables. This difference in ability to measure trends is very probably the explanation for results obtained in Section III, where it was found that the attitude index was comparatively more useful in predicting changes in the purchase rate of nonintenders than in predicting changes in the population purchase rate."

(11) A December 1969 paper by Burch and Steckler[12] provided an analysis of the performance of the SRC Index of Consumer Sentiment in predicting turns in the consumption of real durables. Their conclusion:

"When the index is used as an indicator with every reversal of movement counted as a 'signal' the index correctly forecasts every major movement in durable consumption but also provides a number of false turns. When stringent minimum criteria are applied, the number of false leads declines, but the date at which turns in the index can be identified often lag the consumption movements."

(12) In a 1969 paper, Juster and Wachtel[13] introduced the hypothesis that attitudes are a measure of "uncertainty." According to this hypothesis, a survey measure of expected car purchases together with a variable intended to reflect the influence of unforeseen events are enough to provide unbiased forecasts, given the "typical" amount of consumer uncertainty. The variable selected to represent unforeseen events is the rate of unemployment during the forecast period: hence the model produces contingent forecasts. Forecasts based on these two variables must be corrected, however, by a measure of the extent of deterioration of improvement in attitudes during periods when uncertainty is changing. The third variable in the (contingent) forecast equation becomes, therefore, a "filtered" Index of Consumer Sentiment. During periods when the SRC Index is stable or moving randomly, the amount of uncertainty is considered "typical" and the sentiment variable takes on a value of zero. The sentiment variable takes on a non-zero value only when the change over two quarters is large or the change over three quarters is small but consistent.

The paper presents regression results using the three variable model described above. The results show that the "filtered" Index of Consumer Sentiment is superior to the "continuous" Index in terms of significance and parameter stability (the model was tested for various time periods).

(13) In a 1970 paper, Hymans[14] tested both the continuous and "filtered" SRC Index of Consumer Sentiment in a stock-adjustment automobile equation. He found that the "filtered" variable significantly improved the explanatory power of the equation. Attempts to include the continuous variable proved fruitless. Hymans concluded:

"Economists who make substantial use of sentiment variables, stock market changes, and other such non-real (as distinct from unreal) quantities in their own forecasts of consumer spending tend to shun the structural stock-adjustment framework preferred by the majority to econometric forecasters. The latter, in turn, have tended to reject the complex of stock market-sentiment-expectational variables as of dubious value and in any case unpredictable. There no longer appear to be many good reasons to maintain this dichotomy of approaches.

Changes in consumer sentiment -- if properly filtered -- do improve the forecasting accuracy of a stock-adjustment model of automobile expenditures. It is apparently possible to forecast ahead at least one quarter (and perhaps further investigation will suggest still longer) on the basis of the current quarter's sentiment index. It is also possible to forecast the systematic component of the sentiment index one quarter ahead with the aid of current stock market prices, thus permitting an auto forecast at least two quarters ahead without a forecast of stock market prices. Beyond this, the need to forecast the stock market may well establish the practical limit of the usefulness of the sentiment index in auto forecasting, except

for conditional projections of the kind undertaken in the previous section. Nonetheless, the potential of meaningful improvement in forecasting accuracy for two quarters into the future is not to be taken lightly. Many four-quarter forecasts would have been much more accurate if only the errors present in the first quarter or two of the forecast could have been measurably reduced."

Some Comments on Previous Studies

Studies of the predictive (or explanatory) usefulness of anticipations data fall into three categories; (1) cross-section, (2) panel, and (3) time-series. Some of the early studies illustrate an apparent paradox which has received widespread publicity: in cross-section tests, intentions to buy are significant but attitudes are not; in time-series tests, attitudes are significant but intentions are not.

Juster has shown that at least a portion of the paradox is illusory. Analysts who claimed that intentions data had no signficance in a time-series test made that judgement after examining the performance of a SRC series on intentions which was based on a quarterly sample of fewer than 3,000 households and had not been adjusted for seasonal variation. Regression studies of the series produced by the Census Bureau indicate that intentions to buy are significant if adjusted for seasonal variation and collected from a sample of sufficient size (in this case, about 12,000 households per quarter).

A more basic question is whether cross-section and time-series results should necessarily be consistent. Mueller's (and Kuh's) conclusion that they need not be seems well taken. In a cross-section test (involving a single observation on attitudes), attitudes are basically a reflection of interpersonal differences in optimism. Intentions reflect the age and condition of the present car, and such considerations as whether a son or daughter is about to reach the driving age. Consider the case of two neighbors involved in a cross-section study. Neighbor A has been having mechanical difficulties with his 3 year old car and says the probability of his buying a car is positive. He thinks that business conditions will be "about the same" next year as they are now. Neighbor B purchased a car last month and reports a zero probability of buying. He thinks that business conditions will be "better" next year. When these two are visited six months later we find that Neighbor A did buy a car but Neighbor B did not. The conclusion: intentions have predictive power; attitudes do not.

The limitations of cross-section tests are clear. The intentions data may and often do reflect variables which explain individual behavior but which have no importance in explaining aggregate behavior over time. Such important explanations of individual behavior as accidents, mechanical difficulties, and a son or daughter reaching the age of 16 are of no interest to the forecaster. It seems equally true that attitudes reflect variables which are important cyclically, e.g., consumer reaction to news about unemployment, prices, and income, but which should not be expected to explain differences in individual behavior over a single time period.

Judgements concerning the predictive power of anticipations data must rest on time-series and panel evidence.

The time-series evidence presented in the above studies can be summarized as follows:

1. The SRC Index of Consumer Sentiment has little or no net explanatory power when continuous values of the index are tested in a relatively sophisticated forecast equation. The "filtered" version of the Index is consistently significant in such equations.

2. Buying intentions are consistently significant in equations seeking to explain the variation in new car sales since 1960. The contribution of intentions is weakened when the period of fit is expanded to include years when Census Bureau intentions data are not available, and the series must be taken from the smaller sample SRC. A qualification to this time-series evidence is the presence of trend in both car sales and intentions during the 1960's.

There is no published panel evidence on the predictive value of anticipations data although Mueller's 1960 paper was based on data collected from a panel (800 households were visited four times at six month intervals). Her analysis involved the classification of households by their attitude score at the beginning of a period and by their change of attitude during the period. She then computed each group's "expected" purchase rate for major durable goods based on the income level of the families in the group. She then examined the ratio of actual to expected purchases for each group to measure the net influence of attitude change. The analysis was repeated for four time periods. The results showed a rather weak net relationship between attitude change and purchases of major durables. Households with improving attitudes had the highest relative purchase rate twice in the four tests; households with no change in attitudes and households with deteriorating attitudes had the highest rate once each.

Some Evidence from the Consumer Anticipations Survey

The experimental Consumer Anticipations Survey (CAS), conducted by the Bureau of the Census, collected data on both purchase probabilities and attitudes several times on a panel of approximately 3,500 households. The CAS data on attitudes are rather limited; five attitudinal questions were asked in the first visit, but only two each in the second and third and none in the fourth and fifth.

Tables 1 through 3 show that results usually shown for cross-section studies of anticipations data. They are based on data collected in the first two CAS visits; May 1968 and November 1968. The tables are based on data for 3,527 CAS respondents and show average household expenditures on a collection of major items including appliances, television

sets, hi-fi equipment, furniture, home improvements, cars and light trucks (less trade-ins), and vacation trips, cross-classified by income level and responses to questions on attitudes and expected purchases. Tables 4 through 6 are based on data collected in four of the CAS visits and show changes in actual expenditures by changes in attitudes and expected purchases. The changes in expenditures are from the six month period May 1968-November 1968; to the six month period May 1969-November 1969. The changes in attitudes and expected purchases are from May 1968 to May 1969.

The CAS method of asking attitudinal questions required interviewers to probe in an effort to distinguish between "very good" and "good" and between "very bad" and "bad." For example, if a respondent said he expected business conditions to be better a year from now, he was asked if he thought conditions would be "much better" or just "better." These "very good" and "very bad" categories are usually so small so as to be of little analytical use.

Tables 1 and 2 show that there is a tendency for optimists to spend more than pessimists, and this tendency persists when households are classified by income. The relationship is not particularly strong, however. It tends to break down at the "much better" and "much worse" categories, and there are a number of exceptions throughout the income categories. Table 3 shows expenditures on cars and trucks by responses to a question on the chances of buying a car within 6 months. There is a fairly strong relationship between the expected and actual measures, but the table also illustrates the old problem of the "nonintenders purchase rate!' In this instance, households with a reported zero probability of buying actually spent an average of $251 during the subsequent 6 months, and accounted for 35 percent of the total expenditures of the group.

Tables 4 through 6 show changes in expenditures by changes in responses to questions on attitudes and chances of buying. The following scales were used to code answers to questions on attitudes:

Expected business conditions	Good/bad time to buy
1. Much better	1. Very good
2. Better	2. Good
3. Same	3. Partly good/ partly bad
4. Worse	4. Bad
5. Much worse	5. Very bad

The changes in attitudes shown in tables 4 and 5 are calculated by substracting the May 1969 code from the May 1968 code. For example, a change from "good time to buy" to "partly good/partly bad" would equal minus one.

Tables 4 and 5 show almost no relationship between changes in attitudes and changes in spending. Households reporting a one or two point decline in their responses to the question on expected business conditions increased their spending more than those with no change, and those reporting no change had a larger spending increase than those with a one or two point improvement. The question on good/bad time to buy produced no better results. Households with one or two point declines in attitudes did have a relatively small spending increase, but households with no change in attitudes had a much larger increase than those with an improvement in attitudes.

Table 6 shows the relationship between changes in expected car purchases and changes in actual spending. Households reporting lower purchase probabilities tend to reduce their spending; households reporting higher probabilities tend to increase their spending.

Tables A and B present selected regression results based on 1,747 observations, or about one-half of the households represented in tables 1 through 6. Table A shows results using expenditures on household durables, home improvements, cars and light trucks, and vacation trips as the dependent variable and as the independent variable (1) annual levels of income, and (2) amount in liquid assets (savings accounts, bonds, and stocks), (3) probability of buying a car within 6 months, (4) expected expenditures on appliances, entertainment items, furniture, and home improvements, (5) probability of buying a house within 12 months, (6) expected business conditions, and (7) good or bad time to buy. Table B shows the results of using changes in these items.

Table A shows that four of the seven independent variables are significant in explaining the level of aggregate expenditures. In descending order of significance, they are, (1) the probability of buying a car within 6 months, (2) expected expenditures on appliances, entertainment items, furniture and home improvements, (3) income, and (4) liquid assets. Both attitudinal measures have the right sign (scaled from 1 "very good" to 5 "very bad," but neither is significant.

Table B shows that the income and assets variables lose their significance when first differences are taken. The car probability variable is just as powerful as in the levels regression and the significance of the expected expenditures variable is only slightly diminished. Neither attitudinal measure is significant but the change in expected business conditions has the right sign and a "t" ratio of over 1.

Conclusion

There is time-series evidence that anticipations data, in the form of both attitudes and intentions, have net predictive value. The evidence must be qualified by two considerations: (1) attitudes appear to be important at some but not all, points in time, and (2) the relationship between intentions and actual car purchases is strongly influenced by trends in both series.

If the evidence that both attitudes and intentions provide unique information which is helpful in explaining and predicting consumer behavior over time is accepted, it should be possible to demonstrate the usefulness of such data on the individual level. By individual level, we do not mean the sort of cross-section test reviewed above. Comparing the purchase rates of optimists and pessi-

mists is not a very useful exercise. But if individual changes in attitudes and intentions are not related to individual changes in spending, the time-series evidence should be called into question.

The CAS results shown above are not inconsistent with the time-series evidence concerning intentions. There appears to be a reasonably strong first difference relationship on the individual level. The CAS results on attitudes are less favorable. Changes in attitudes were not associated with subsequent changes in spending. Even this result is not necessarily inconsistent with the Juster-Wachtel hypothesis that only large and/or persistent attitudinal changes matter.

The failure of attitudes in this panel test suggests that changes in attitudes are important only if they reflect widespread changes in other economic phenomena. The contribution of attitudes in the Juster-Wachtel and Hymans studies suggest either that these "other" variables have yet to be identified or that their relationships to spending are not simple and linear. Until these "other" variables are identified and correctly specified, forecast equations can be improved by including an attitudinal variable.

FOOTNOTES

1/ E. Scott Maynes has calculated that expenditures on cars account for 51 percent of the time-series variance in total consumption. See E. Scott Maynes, "Consumer Attitudes and Buying Intentions: Retrospect and Prospect," 1966 (Mimeographed).

2/ "Decisions to Purchase Consumer Durable Goods," L.R. Klein and J.B. Lansing, The Journal of Marketing, October, 1955.

3/ Consumer Survey Statistics, Report of the Consultant Committee on Consumer Survey Statistics, 1955 (Organized by the Federal Reserve Board at the request of the Joint Committee on the Economic Report).

4/ E. Mueller, "Consumer Attitudes: Their Influence and Forecasting Value." In The Quality and Significance of Anticipations Data. A Report of the National Bureau of Economic Research. Princeton University Press, 1960.

5/ Arthur M. Okun, "The Value of Anticipations Data in Forecasting National Product," In The Quality and Economic Significance of Anticipations Data.

6/ James Tobin, "On the Predictive Value of Consumer Intentions and Attitudes," The Review of Economics and Statistics, Feb., 1959.

7/ Eva Mueller, "Ten Years of Consumer Attitude Surveys: Their Forecasting Record," Journal of the American Statistical Association, Dec., 1963.

8/ F. Thomas Juster, Anticipations and Purchases, National Bureau of Economic Research, 1964.

9/ F. Gerard Adams, "Consumer Attitudes, Buying Plans, and Purchases of Durable Goods: A Principal Components, Time Series Approach," Review of Economics and Statistics, November, 1964.

10/ F. Thomas Juster, "Consumer Buying Intentions and Purchase Probability: An Experiment in Survey Design," Journal of the American Statistical Association, September, 1966.

11/ F. Thomas Juster, "Consumer Anticipations and Models of Durable Goods Demand," Economic Forecasts and Expectations, Jacob Mincer, Editor, National Bureau of Economic Research, 1969.

12/ S.W. Burch and H.O. Stekler, "The Forecasting Accuracy of Consumer Attitude Data." Journal of the American Statistical Association, December, 1969.

13/ F. Thomas Juster and Paul Wachtel, "A Note on Uncertainty, Expectations and Durable Goods Demand Models," 1969 (Mimeographed).

14/ Saul H. Hymans, "Consumer Durable Spending: Explanation and Prediction," Brookings Papers on Economic Activity (2:1970).

Table 1.--EXPENDITURES ON HOUSEHOLD DURABLES, CARS AND LIGHT TRUCKS, AND VACATIONS BY LEVEL OF ANNUAL INCOME AND RESPONSE TO QUESTION ON EXPECTED BUSINESS CONDITIONS ONE YEAR HENCE

(Average reported expenditure during the period May 1968-November 1968)

1967 Income	Total	May 1968 response to question on expected business conditions one year hence					
		Much better	Better	Same	Worse	Much worse	Don't know
All households...	$1,100 (3,527)	$930 (73)	$1,171 (1,606)	$1,063 (997)	$970 (509)	$1,148 (30)	$1,106 (312)
Under $5,000.....	$813 (124)	$1,033 (3)	$897 (58)	$915 (31)	$831 (18)	$425 (1)	$145 (13)
$5,000 to $9,999.....	$632 (310)	$270 (9)	$700 (115)	$704 (107)	$449 (52)	$238 (1)	$542 (26)
$10,000 to $14,999....	$860 (1,121)	$265 (12)	$849 (511)	$883 (308)	$767 (170)	$1,659 (12)	$975 (108)
$15,000 to $19,999....	$1,046 (946)	$413 (21)	$1,125 (429)	$1,025 (277)	$842 (120)	$432 (9)	$1,210 (90)
$20,000 to $29,999....	$1,384 (449)	$1,903 (8)	$1,538 (208)	$1,239 (128)	$1,118 (70)	$1,774 (1)	$1,397 (34)
$30,000 and over.....	$1,749 (577)	$1,763 (20)	$1,793 (285)	$1,651 (146)	$1,845 (79)	$1,370 (6)	$1,645 (41)

NOTE: Household durables include kitchen range, washing machine, clothes dryer, refrigerator, freezer, dishwasher, television set, hi-fi equipment, musical instrument, room air conditioner, furniture, floor coverings, and home improvements.

Table 2.--EXPENDITURES ON HOUSEHOLD DURABLES, CARS AND LIGHT TRUCKS, AND VACATIONS BY LEVEL OF ANNUAL INCOME AND RESPONSE TO QUESTION ON GOOD/BAD TIME TO BUY

(Average reported expenditure during the period May 1968-November 1968)

1967 Income	Total	May 1968 response to good/bad time to buy question					
		Very good	Good	Partly good, partly bad	Bad	Very bad	Don't know
All households.....	$1,100 (3,527)	$1,059 (48)	$1,176 (1,611)	$1,098 (859)	$903 (605)	$856 (61)	$1,149 (343)
Under $5,000.....	$813 (124)	$204 (7)	$852 (50)	$256 (24)	$1,050 (27)	- (2)	$1,111 (14)
$5,000 to $9,999.....	$632 (310)	$666 (6)	$737 (110)	$594 (76)	$527 (79)	$533 (7)	$636 (32)
$10,000 to $14,999.....	$860 (1,121)	$810 (6)	$894 (480)	$868 (283)	$709 (208)	$1,146 (25)	$913 (119)
$15,000 to $19,999.....	$1,046 (946)	$617 (11)	$1,056 (437)	$1,059 (248)	$984 (145)	$640 (16)	$1,186 (89)
$20,000 to $29,999.....	$1,384 (449)	$1,910 (5)	$1,467 (239)	$1,489 (92)	$1,164 (63)	$279 (6)	$1,117 (44)
$30,000 and over.....	$1,749 (577)	$1,863 (13)	$1,794 (295)	$1,767 (136)	$1,357 (83)	$1,580 (5)	$2,106 (45)

Table 3.--NET EXPENDITURES ON CARS AND LIGHT TRUCKS BY LEVEL OF ANNUAL INCOME AND RESPONSE TO QUESTION ON PROBABILITY OF BUYING A CAR WITHIN 6 MONTHS

(Average reported expenditure during the period May 1968-November 1968)

1967 Income	Total	May 1968 response to question on probability of buying a car within 6 months (Number of chances in 100)				
		0	10 to 30	40 to 60	70 to 90	100
All households.....	$463 (3,527)	$251 (2,286)	$443 (439)	$740 (177)	$938 (332)	$1,435 (293)
Under $5,000.....	$308 (124)	$165 (89)	$105 (11)	$292 (6)	$925 (10)	$1,425 (8)
$5,000 to $9,999.....	$338 (310)	$263 (219)	$110 (34)	$1,089 (14)	$426 (23)	$913 (20)
$10,000 to $14,999.....	$405 (1,121)	$231 (761)	$465 (138)	$580 (46)	$978 (95)	$1,155 (81)
$15,000 to $19,999.....	$409 (946)	$228 (614)	$428 (123)	$498 (53)	$909 (85)	$1,277 (71)
$20,000 to $29,999.....	$569 (449)	$277 (268)	$369 (69)	$725 (20)	$890 (45)	$2,157 (47)
$30,000 and over.....	$680 (577)	$333 (335)	$742 (64)	$1,221 (38)	$1,110 (74)	$1,592 (66)

Table 4.--CHANGE IN EXPENDITURES ON HOUSEHOLD DURABLES, CARS AND LIGHT TRUCKS, AND VACATIONS BY LEVEL OF ANNUAL INCOME AND CHANGE IN RESPONSE TO QUESTION ON EXPECTED BUSINESS CONDITIONS

(Change in expenditures from May 68-Nov. 68 to May 69-Nov. 69: Change in attitudes towards expected business conditions from May 68 to May 69)

1967 Income	Total	Change in attitude towards expected business conditions					
		-3 to -4	-1 to -2	0	+1 to +2	+3 to +4	Don't know
All households....	$129 (3,527)	$101 (22)	$151 (892)	$142 (1,449)	$137 (765)	$873 (14)	-$12 (385)
Under $5,000.....	$163 (124)	$3,838 (2)	$98 (35)	-$106 (48)	$170 (19)	- -	$550 (20)
$5,000 to $9,999.....	$40 (310)	-$273 (5)	$1 (74)	-$98 (113)	$245 (79)	$925 (1)	$99 (38)
$10,000 to $14,999.....	$56 (1,121)	$20 (6)	$65 (312)	$85 (442)	$104 (232)	$945 (5)	-$196 (124)
$15,000 to $19,999.....	$148 (946)	$163 (2)	$250 (228)	$105 (398)	$186 (199)	$822 (8)	-$28 (111)
$20,000 to $29,999.....	$256 (449)	-$1,400 (2)	$232 (111)	$418 (181)	$407 (113)	- -	-$704 (42)
$30,000 and over.....	$181 (577)	-$345 (5)	$212 (132)	$247 (267)	-$204 (123)	- -	$748 (50)

Table 5.--CHANGE IN EXPENDITURES ON HOUSEHOLD DURABLES, CARS AND LIGHT TRUCKS, AND VACATIONS BY LEVEL OF ANNUAL INCOME AND CHANGE IN RESPONSE TO QUESTION ON GOOD/BAD TIME TO BUY

(Change in expenditures from May 68-Nov. 68 to May 69-Nov. 69: Change in attitude towards good/bad time to buy from May 68 to May 69)

1967 Income	Total	Change in attitude towards good/bad time to buy					
		-3 to -4	-1 to -2	0	+1 to +2	+3 to +4	Don't know
All households....	$129 (3,527)	$376 (43)	$42 (878)	$246 (1,421)	$89 (727)	$801 (27)	-$82 (431)
Under $5,000.....	$163 (124)	$575 (6)	$645 (35)	$202 (45)	-$482 (21)	$1,325 (1)	-$381 (16)
$5,000 to $9,999.....	$40 (310)	$392 (3)	-$67 (80)	$69 (121)	$149 (61)	$1,192 (3)	-$106 (42)
$10,000 to $14,999.....	$56 (1,121)	$91 (12)	-$24 (302)	$207 (404)	$63 (245)	$181 (9)	-$192 (149)
$15,000 to $19,999.....	$148 (946)	-$23 (11)	$51 (236)	$265 (396)	$204 (188)	$539 (4)	-$157 (111)
$20,000 to $29,999.....	$256 (449)	$689 (5)	-$22 (102)	$354 (204)	-$19 (82)	$3,775 (3)	$601 (53)
$30,000 and over.....	$181 (577)	$1,211 (6)	$140 (123)	$286 (251)	$106 (130)	$698 (7)	-$175 (60)

Table 6.--CHANGE IN NET EXPENDITURES ON CARS AND LIGHT TRUCKS BY LEVEL OF ANNUAL INCOME AND CHANGE IN RESPONSE TO QUESTION ON PROBABILITY OF BUYING A CAR WITHIN 6 MONTHS

(Change in expenditures from May 68-Nov. 68 to May 69-Nov. 69: Change in response to question on car buying probability from May 68 to May 69)

1967 Income	Total	Change in reported probability of buying a car within 6 months (Number of chances in 100)				
		-70 to -100	-20 to -60	-10 to +10	+20 to +60	+70 to +100
All households...	$177 (3,527)	-$868 (409)	-$319 (370)	$57 (1,862)	$764 (507)	$1,592 (379)
Under $5,000.....	$286 (124)	-$350 (14)	-$261 (9)	$125 (81)	$1,250 (12)	$1,612 (8)
$5,000 to $9,999.....	$31 (310)	-$360 (30)	-$245 (33)	-$137 (188)	$971 (33)	$852 (26)
$10,000 to $14,999....	$48 (1,121)	-$1,006 (115)	-$201 (114)	$16 (634)	$409 (158)	$1,175 (100)
$15,000 to $19,999....	$232 (946)	-$941 (105)	-$299 (94)	$93 (486)	$814 (158)	$1,672 (103)
$20,000 to $29,999....	$357 (449)	-$884 (54)	-$233 (58)	$164 (207)	$899 (70)	$2,079 (60)
$30,000 and over.....	$251 (577)	-$848 (91)	-$772 (62)	$121 (266)	$1,106 (76)	$1,877 (82)

Table A.--SELECTED REGRESSION RESULTS USING MAY 1968 - NOVEMBER 1968 EXPENDITURES ON HOUSEHOLD DURABLES, CARS AND LIGHT TRUCKS, AND VACATIONS AS THE DEPENDENT VARIABLE

(Independent variables as measured in May 1968 survey, "t" ratios shown in parentheses)

Equation	Constant	1967 income	Amount in liquid assets	Probability of buying a car within 6 months	Expected expenditures on household durables and vacations	Probability of buying a house within 12 months	Expected business conditions 1 year hence	Good or bad time to buy large durable goods like cars and appliances	R^2	SEy.x
I.....	570.5 (9.5)	.0315 (10.4)							.059	1314.4
II.....	548.3 (9.0)	.0278 (8.1)	.0074 (2.3)						.062	1312.8
III....	822.0 (23.0)			132.2 (15.1)					.116	1274.2
IV.....	261.9 (4.3)	.0171 (5.2)	.0089 (2.9)	115.5 (13.5)	.2512 (7.1)				.180	1228.0
V.....	420.7 (3.5)	.0169 (5.1)	.0085 (2.8)	115.5 (13.5)	.2490 (7.0)			-54.9 (1.5)	.181	1227.5
VI.....	503.5 (3.3)	.0169 (5.1)	.0086 (2.8)	115.2 (13.4)	.2488 (7.0)		-33.6 (0.8)	-52.3 (1.5)	.181	1227.6
VII....	503.9 (3.3)	.0169 (5.1)	.0086 (2.8)	115.2 (13.4)	.2493 (7.0)	.1801 (0.1)	-33.6 (0.9)	-52.1 (1.4)	.181	1227.9

Table B.--SELECTED REGRESSION RESULTS USING CHANGE IN EXPENDITURES ON HOUSEHOLD DURABLES, CARS AND LIGHT TRUCKS, AND VACATIONS FROM MAY 1968 - NOVEMBER 1968 TO MAY 1969 - NOVEMBER 1969 AS THE DEPENDENT VARIABLE

Equation	Constant	Change in income	Change in liquid assets	Change in probability of buying a car within 6 months	Change in expected expenditures on durables and vacations	Change in probability of buying a house within 12 months	Change in expected business conditions	Change in attitude towards good/bad time to buy	R^2	SEy.x
I.....	127.5 (2.7)	-.0073 (1.2)							.030	1956.8
II....	118.8 (2.4)	-.0081 (1.4)	.0036 (0.9)						.036	1956.9
III...	132.5 (3.0)			139.1 (14.3)					.105	1852.4
IV....	174.2 (3.9)	-.0087 (1.6)		138.5 (14.3)	.2228 (4.9)				.118	1839.6
V.....	177.5 (3.9)	-.0089 (1.6)		138.7 (14.3)	.2228 (4.9)		46.7 (1.1)		.119	1839.5
VI....	170.0 (3.7)	-.0096 (1.7)	.0030 (0.8)	138.7 (14.3)	.2212 (4.9)		46.1 (1.1)		.119	1839.7
VII...	169.5 (3.6)	-.0095 (1.7)	.0030 (0.8)	138.7 (14.3)	.2214 (4.9)		46.6 (1.1)	-5.5 (0.1)	.119	1840.2
VIII..	169.5 (3.6)	-.0095 (1.7)	.0030 (0.8)	138.7 (14.3)	.2219 (4.9)	-.1949 (0.1)	46.7 (1.1)	-5.5 (0.1)	.119	1840.8