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Chapter Author: John B. Lansing, Stephen B. Withey

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CONSUMER ANTICIPATIONS: THEIR USE IN FORECASTING CONSUMER BEHAVIOR

JOHN B. LANSING AND STEPHEN B. WITHEY
SURVEY RESEARCH CENTER, UNIVERSITY OF MICHIGAN

A. Introduction

THE USE OF ANTICIPATORY DATA in the consumer sector of the economy presents a challenging problem. It has in recent years also proved of great help in forecasting economic fluctuations. Sharp movements in consumer expenditures, unforeseen in advance by many technical economists, have been a feature of much of the short-run business cycle activity in the postwar period.

Surveys of anticipated plant and equipment outlays of business enterprise carry more weight because a significant number, though not all, of these anticipations represent firm contractual commitments. In consumer surveys, however, expressed anticipations are usually not tied to binding contracts, and a more comprehensive analysis of the underlying situation must be attempted. Our approach has been to consider a range of supporting data needed to build *relationships* among such variables as actual purchases, expected purchases, incomes, liquid assets, personal attitudes, family structure, and others. A higher degree of confidence is attached to an appraisal of the economic situation if it is based on firmly established interrelationships, rather than on simple translations of anticipations into action. In addition period to period movements in the various consumer statistics give a firmer base for projections than collections of isolated data in a unique time interval.

In this paper we shall examine the use of data on consumer anticipations from two alternative points of view. In the first section are considered the problems involved in forecasting consumer demand from anticipatory statistics collected in an annual sequence of representative cross-sectional samples of consumer units in the United States. The samples do not, except by small chance, include identical respondents. In the second section a different approach is used: identical consumers are followed from one period to the next. Material on *individual* fulfillment of expectation and changes in *individual* attitudes and economic situations between time periods are then added. Relationships derived from studying reinterviews of

identical units can be used to advantage in the subsequent analysis of repeated interviews from independent cross-sections.

The Surveys of Consumer Finances conducted by the Survey Research Center for the Board of Governors of the Federal Reserve System are the source of our data on consumer anticipations and related data used in forecasting demand. These are relatively new instruments for business cycle analysis and have only a short history (beginning in 1946). The analysis of the reinterviews was made with the help of a grant by the Rockefeller Foundation to the University of Michigan.

In these Surveys, data have been collected on consumer intentions to buy selected durable commodities during a future time period, consumers' opinions about their personal and the general economic climate, consumers' financial condition, and consumer demographic facts. Our experience has shown us some of the lines of influence connecting both actual and anticipated expenditures to these other variables. We are in a somewhat weaker position in trying to account for relationships among these "explanatory" factors. The problem of the origins of consumer attitudes is especially difficult. The problems we have posed are indeed not at a stage of final solution. Nevertheless, we have learned some things about relationships involved in consumer behavior—relevant variables to be considered, techniques of measuring these variables, and the strength and magnitude of some of the relationships.[1] We are far from sure that we have included all the important variables; we have made only first attempts at estimating the underlying relationships. A very important limitation is the fact that the Surveys of Consumer Finances cover only the types of economic conditions found in the postwar boom.

[1] See, for example, George Katona, *Psychological Analysis of Economic Behavior* (McGraw-Hill, 1951). This volume contains analyses of the relations between consumer behavior and attitudes. Results of econometric equations containing several variables relating to consumer behavior are found in L. R. Klein, "Estimating Patterns of Savings Behavior from Sample Survey Data," *Econometrica*, Vol. 19 (1951), pp. 438-454. A volume is now in preparation at the Survey Research Center on the use of survey data for determining basic relationships between demand and explanatory variables. See also *Consumer Attitudes and Demand, 1950-1952*, by George Katona and Eva Mueller (Institute for Social Research, University of Michigan, 1953), for a discussion of the role of economic attitudes in business cycle research, with special reference to the events of 1950-1952.

B. Repeated Interview Data on Cross-Section of Consumer Units[2]

In the annual Surveys of Consumer Finances many of the questions remain the same year after year, although the respondents are different. One of the purposes of these repeated interviews is to provide new data not otherwise available which may contribute to predictions of consumers' behavior.

In the absence of survey data, predictions in the consumer sector must rely on aggregate statistics. For example, an economist may predict that sales of new cars to consumers will amount to $\$x$ million, on the basis of a function involving such variables as total stocks of cars, national income, liquid assets held by private individuals, etc. One contribution of the Survey method to predictions of this type is to make available distributions of magnitudes for which aggregate statistics are available. The distribution of income, the distribution of liquid assets, and the relation between individuals' incomes and their liquid assets can be and are calculated from Survey data.

The Survey method is by no means limited to breaking down aggregates. Perhaps its most interesting contribution is to provide information on variables where no aggregate statistics are available. Psychological variables are inherently of this type. Perceptions, motivations, attitudes—the entire psychological gamut must be investigated on a group or individual basis.

The addition of psychological information to the supply of data at the disposal of forecasters should make possible improvements in the accuracy of forecasts. Although forecasters commonly speak in terms of predicting economic magnitudes, such as the aggregate level of spending by consumers, they are, by implication, predicting the behavior of individuals. To predict that total spending by consumers will be $\$x$ is equivalent to predicting the spending of a mass of individuals, each of whom makes some contribution to the total. We may think of a sequence in which events occur in the economic world, the attitudes of consumers change, and finally the behavior of consumers changes. Evidently there is less risk in proceeding from knowledge about both step 1 and step 2, events and changes in attitudes, to a prediction of step 3, changes in behavior, than there is in predicting from knowledge of only step 1 to step 3.

The forecaster without psychological information must either make that jump or wait until the behavior actually starts to change.

[2] John B. Lansing is primarily responsible for this section.

If people's attitudes, particularly shifts in these attitudes, are known, the forecaster has an opportunity to make use of knowledge about the effects of attitudes on behavior.

Even after the event a forecaster without psychological data may have only a partial picture of what happened. He will know only that a certain event took place and that people behaved in a certain way. He cannot always be certain that he has inferred the correct causal link joining the right event with the right behavior. Psychological knowledge may help to establish what the causal connection actually was. It may also indicate that certain causal connections are impossible. For example, a man cannot be influenced directly by an event about which he has no knowledge.

Thus the addition of psychological data can add much to the information at the disposal of economists. There are difficulties, however, both in gathering and in making use of these new data, and these difficulties have not all been solved in the work done in connection with the Surveys of Consumer Finances.

In the first place, the interpretation of a body of attitudinal material from a survey of consumers is not simple. The analyst must study changes in answers to a dozen questions from one year to the next. Even in a simplified situation where distributions of the population are available only on six three-point scales, the population as a whole may be distributed in any proportions on each scale, and the scales are largely independent. For example, one scale would divide the heads of spending units into three groups according to whether they expect to make more in the current year than in the previous year, about the same, or less (see table 8).[3] Another scale would divide the same individuals according to whether they now feel better off financially than a year ago, the same, or worse off (see table 9). The possible combinations of distributions of the population on different scales are very numerous.

In general the analyst must ask himself the question, Is it possible for people to hold this particular set of attitudes at one time? He must ask this question in the light of general psychological knowledge and of particular knowledge about the attitudes in question. It is possible that answers to one or more questions may seem to make no sense in the pattern. The meaning of the whole body of

[3] Although the example refers only to three-point scales, other types are common. A five-point scale would divide the population into five instead of three groups. For example, those who expect to make more could be split into those who expect to make a lot or a little more.

data may have to be reconsidered, and new data sought out, perhaps by intensive analysis of some subgroup of the population which now seems to be of key importance.

This type of analysis involves some exercise of judgment on the part of the analyst. He has to think, and when he thinks he may err. Judgment is also involved, of course, in the more usual forecasting procedures, but it enters in a different way. Even assuming that, given the same model and the same data, different analysts would reach the same conclusions, not all econometricians would use the same model for forecasting gross national product!

In the second place, the differences in method make difficult the combination of psychological and other survey data with data from other sources. The results of a survey of attitudes are not easily reduced to a form which can be inserted, say, in an econometric model. If other data about the consumer sector are to be taken into account, and we feel that they should be, the problem of articulation arises even within the consumer sector of the economy.

But even if one rashly ignores other data about the consumer sector, one cannot ignore the interrelations among the consumer sector, the business sector, and government. Ideally, one should deal with all three together, but the practical difficulties are serious.

One method of approaching a solution is to make some crude subjective combination of information about the different sectors. One may study the consumer sector more or less in isolation and reach some conclusion about the probable course of consumer demand. If, after a similar study of the other sectors, the indications in all sectors point one way, one can infer that events will move in that direction. The difficulty is that indications in different sectors need not point in the same direction, and movements in one sector may tend to change the course of events in another. Relative magnitudes and interrelations are the heart of the problem. Informed judgments on these points are valuable, but not entirely satisfactory.

An alternative to nonquantitative estimates of the interrelations is the construction of a mathematical model of the economy. To introduce all the relevant data from the Surveys of Consumer Finances into such a model would require a major effort. One method would require a precise dollar estimate of total consumer demand which could be entered as a constant in a system of equations describing the functioning of the economy. Another method would require the development of equations based on Survey data for incorporation in a larger system. As we have observed, the data in the

Surveys are not now in a form appropriate for use in either manner and they are not easily reduced to such a form. A discussion of the difficulties which would confront anyone who attempted this task is beyond the scope of this paper, but some of them will be apparent to anyone who reads the discussion which follows. For the present, at least, the consumer sector is studied in isolation, without attempting to combine it with information from other sectors.

In view of the seriousness of these difficulties, we at the Survey Research Center have tended to avoid making "predictions." We use the word, but only in a loose sense. Strictly speaking, we have obtained and published data which we believe are relevant to the making of predictions about consumer demand. We have even stated, in our bolder moments, that indications in the consumer sector point in a certain direction. We have not undertaken the work of combining our data with data from other sources. For example, we have published data about consumer intentions to buy new cars, and a variety of other data relevant to the analysis of demand for new cars, but we have not attempted to estimate how many new cars actually will be purchased by consumers. It would be dangerous to predict demand for new cars for a year without taking into account what such factors as government policies can do to the level of consumer income and the terms on which consumers can borrow. It would be absurd to predict sales of new cars without considering what may happen on the supply side of the market. Whether one uses the word "prediction" with reference to the Survey data is perhaps a verbal question, but it is both important and difficult to keep in mind that the Survey data at best are limited to the consumer sector.

Specifically, in using the data from the Surveys we have attempted to collect information of two kinds not otherwise available, namely, distributions of economic magnitudes and psychological data about consumers' attitudes. We have also studied these data in isolation and attempted to draw conclusions about them. These conclusions and the supporting data are then published and may be used by others in making prognostications.

The data may be applied to projections for the consumer sector as a whole or for parts of it. Of particular interest is the total consumer demand for goods and services, that is, total spending in dollars for goods and services by the household sector of the economy. The importance of total demand by consumers in forecasting the course of economic events hardly needs emphasis. The basic postulate of

those who work with Survey data is that consumers have a real freedom of choice about what they do with their income and assets, particularly over short periods of time: they may purchase goods and services, or they may increase their liquid assets and claims against the other sectors of the economy. In other words, it is not enough to know consumers' income and asset positions. Forces other than incomes and assets influence spending, and these forces require study.

A more restricted area than total demand by consumers is consumer demand for durable goods, automobiles, and houses. These may be considered individually or collectively, that is, one may be interested in the demand for individual items or for all these items as a group. The methods actually used in the Survey can be applied separately to the three categories (houses, cars, and other durables) or to the three in combination.

Data on demand for the large items may be used for projections of total consumer demand on the assumption that the variability in total demand is entirely in the large items—houses, cars, and other durables. If, for example, consumer purchases of other goods and services always bear a single ratio to income, there is no difficulty in converting a projection for large items into a projection for total consumer demand. The approach in the Surveys can be useful even if the facts are not so neat. The inference may be made that if demand for houses, cars, and other durables will increase in a particular year, total consumer demand will increase for a given level of income.

With this background, the information gathered in the Survey which is relevant to the problem of forecasting may be considered in more detail. This information may be classified under three headings: individuals' ability to buy, individuals' willingness to buy, and individuals' plans to buy. In brief, an individual's *ability to buy* involves his income and his balance-sheet position. An individual's *willingness to buy* involves both his evaluation of his ability to buy and his wants. It includes his expectations of his future income, future prices, and the future of other aspects of his ability to buy. It includes his attitudes and motivations, or, in language more usual among economists, his preference functions. *Plans to buy* comprise people's answers to questions as to what they expect to buy during a calendar year. These expressed intentions involve wishes and hopes which are sometimes not realistic and are always open to the possibility of change, but in some cases, at least, they represent a

joint expression of willingness to buy and ability to buy. Within each of these major categories the most useful information concerns trends, that is, trends on ability to buy, trends on willingness to buy, and trends on plans to buy.[4]

The content of these categories and the reasons for including the particular information gathered are set forth below. There follow a discussion of the method of combining the several types of data, and some remarks about methods of testing the validity of the material for purposes of forecasting. The latter topic is treated in more detail, for a part of the data, in the second section of this paper, and for the data as a whole in a separate paper by Irving Schweiger, elsewhere in this volume.

The problem of estimating the relative importance of the factors mentioned cannot be solved satisfactorily with the available data and is not discussed here. The emphasis, rather, is on what types of data are used.

It should be noted that the period with which we are concerned is the calendar year. We interview in January and February, and inquire about individuals' income for the preceding year, their balance-sheet situation and attitudes at the time of interview, and their plans and expectations for the remainder of the year. We compare these data for one year with data for earlier years, using interviews one year apart. A year is a period commonly used for accounting, and hence it has great advantages for the study of past behavior, particularly of past income. For the study of the future, however, it is an arbitrary interval, and it may well be that in making projections a period or periods of different length should be used. The data discussed below suggest that a shorter future period would be appropriate for some purposes.

1. Ability to buy

The first major type of data on consumers' intentions has to do with individuals' ability to buy. The data about ability to buy fall into the three familiar categories of income, assets, and debts.

The basic information about income obtained by the Surveys is embodied in the income distribution. Trends in median and mean income and in the proportion with very low incomes are computed

[4] The word "trend" as used here refers simply to the comparison of the unadjusted results of repeated interviews. It implies comparability in questions asked, methods of sampling, etc. This use of the word is in contrast to that in discussions of secular trends in the economy.

(see table 1).[5] Changes in the income distribution from year to year must be interpreted in relation to changes in the prices consumers pay, information which is not gathered by the Surveys, but is available.

More elaborate data from the Surveys can be used to fill in the picture of consumers' income. For example, income distributions are prepared for occupational groups. With our present subjective methods of combining different types of data, however, it is diffi-

TABLE 1

Distribution of Spending Units by Money Income, 1947-1950

Annual Money Income before Taxes (dollars)	*1947*	*1948*	*1949*	*1950*
		Per Cent		
Under 1,000	14	12	14	13
1,000 to 1,999	22	18	19	17
2,000 to 2,999	23	23	21	19
3,000 to 3,999	17	20	19	19
4,000 to 4,999	10	12	11	12
5,000 to 5,999	9	10	11	14
7,500 to 9,999	2	2	2	3
10,000 and over	3	3	3	3
All income groups	100	100	100	100
		Number of Cases		
	3,562	3,510	3,512	3,415
		Dollars		
Median income	2,530	2,840	2,700	3,000
Mean income	3,290	3,450	3,270	3,520

Source: Survey of Consumer Finances.

cult to make effective use of distributions for segments of the population in overall projections of demand. It is helpful in interpreting the general income distribution in a given year to compare it with the allocation in the previous year. For example, if incomes generally are higher in a given year, one is fortified in the conclusion that consumers' ability to buy is higher if both savings and durable goods expenditures rose with income (see tables 2 and 3). Median net savings are a useful measure for this purpose, or one may look at the proportion of the population who were positive savers. Similarly, median expenditures for durables, taken together with the trend in

[5] The information presented in this table, and in most of the following tables in this section, has been published already in the *Federal Reserve Bulletin*. The tables are repeated here to illustrate the discussion in the text.

TABLE 2

Distribution of Amounts Saved by Spending Units, 1947-1950

Savings (dollars)	*1947*	*1948*	*1949*	*1950*
		Per Cent		
Positive savings	61	60	57	58
2,000 and over	5	5	4	5
1,000 to 1,999	7	7	7	9
500 to 999	9	11	11	11
200 to 499	13	14	13	13
100 to 199	9	8	8	8
1 to 99	18	15	14	12
Zero savings	8	6	6	7
Negative savings	27	29	33	31
1 to 99	6	6	7	5
100 to 499	11	11	13	14
500 and over	10	12	13	12
Not ascertained	4	5	4	4
All savings	100	100	100	100
		Number of Cases		
	3,562	3,510	3,512	3,415
		Dollars		
Median amount saved	60	75	60	90

Source: Survey of Consumer Finances. For a list of the component elements entering into the definition of saving used here, see Appendix to "The Distribution of Consumer Saving in 1948," *Federal Reserve Bulletin*, January 1950, pp. 33-34.

TABLE 3

Distribution of Purchases of Durable Goods by Spending Units, 1947-1950

Purchases	*1947*	*1948*	*1949*	*1950*
		Per Cent		
Bought one or more durables[a]	35	39	40	42
Did not buy	65	61	60	58
Total	100	100	100	100
		Number of Cases		
	3,562	3,510	3,512	3,415
		Dollars		
Median expenditure of buyers	200	250	250	280

[a] Includes radios, television sets, refrigerators, furniture, washing machines, stoves, and other electrical appliances.

Source: Survey of Consumer Finances.

the proportion who bought at least one durable good, may serve to indicate the level of purchases. If incomes rose, but the proportion of positive savers fell and median expenditures for durables also fell, the increase in income cannot be taken as indicating improved ability to buy. Evidently the increase was offset by price increases. It must be emphasized that the data about income from the Surveys are data about past income. They indicate the situation at the beginning of the period which is to be covered in a projection. Strictly, past incomes are relevant to the future only to the extent that they influence willingness to buy in the future.

The basic information about consumers' assets is incorporated in the distribution of liquid asset holdings. The higher the median holding, and the more individuals with at least some liquid assets, the better are people able to buy (see table 4). However, changes

TABLE 4

Distribution of Liquid Assets of Spending Units, 1947-1951

Total Holdings of Liquid Assets[a] (*dollars*)	*1947*	*1948*	*1949*	*1950*	*1951*
			Per Cent		
None	24	27	29	31	28
1 to 499	26	27	28	27	30
500 to 1,999	28	24	22	20	23
2,000 to 4,999	14	13	12	13	11
5,000 and over	8	9	9	9	8
All holdings	100	100	100	100	100
			Number of Cases		
	3,058	3,562	3,510	3,512	3,415
			Dollars		
Median holdings of those with liquid assets	890	820	790	810	710
Median holdings of all spending units	470	350	300	250	300

[a] "Liquid assets" exclude currency, but include U.S. government bonds, savings accounts, and checking accounts. Holdings are estimated as of the time of interview, that is, in January-February of the years indicated.

Source: Survey of Consumer Finances.

in prices influence the real value of liquid asset holdings just as they influence real incomes. In estimating changes in real income, it is possible to use the Consumer Price Index, at least for large segments of the population. No price index exists, unfortunately, which is properly weighted for estimating the real value of consumers' liquid

asset holdings. The Consumer Price Index uses, in calculating weights, information about the allocation of consumers' incomes among various goods and services. A similar index for liquid assets would require information about the allocation of withdrawals from liquid assets among various goods and services, which is entirely different from the allocation of income. When consumers draw down their liquid assets, the Survey data indicate that a smaller proportion of the total is spent for general living expenses (food, clothing, rent) than is true of expenditures out of income (see table 5). For example, of spending units in the middle income group ($2,000-$4,999) who reduced their liquid assets in 1950, only 30 per cent indicated that any of the money went for food, clothing, or other nondurables. Half mentioned medical expenses. If a "market basket" approach were to be used in preparing an index for liquid assets, the relative weight of the price of food and the price of medical services would be different from their weight in an index developed for the study of income.

The assets which consumers may employ in the purchase of goods and services are not limited to their "liquid assets."[6] To be complete, the list of assets which may be spent should include such items as securities issued by government agencies other than the U.S. Treasury, securities of private corporations, and hoards of currency, as well as nonliquid assets. Information on the distribution of the latter assets, with the notable exception of currency, is available from the Survey but has not been used in making projections. The method of analysis emphasizes changes in the situation of consumers from one year to the next, and these distributions change very little in the period of one year. Information about changes in the distribution of holdings of currency might prove more helpful, but the data have proved difficult, if not impossible, to collect.

Another aspect of consumers' ability to buy is their ability to borrow. Consumers may make a given level of purchases by borrowing, as well as by the use of income and liquid assets. The Surveys provide several types of data about consumer borrowing. The simplest data are trends on the proportion of buyers using credit and on the proportion of the purchase price borrowed (see tables 6 and 7). These data, however, represent a record of the extent to which credit *has* been used rather than an estimate of the extent to which

[6] Liquid assets, as defined and measured in the Surveys, include bank deposits and U.S. government bonds.

TABLE 5

Percentage of Spending Units in Different Income Groups Who Reduced Their Liquid Asset Holdings by Major Items of Expenditure, 1950

Amount of Reduction in Liquid Assets (dollars)	*Number of Cases*	*Medical Expenses*	*Living Expenses*[a]	*Repayment of Debt*	*Investments*[b]	*Automobiles and Other Durable Goods*	*Luxuries*[c]	*Other Large Outlays*[d]
			1950 Income under $2,000					
Any amount	254	52	46	4	12	16	12	27
1 to 199	86	51	48	2	11	11	12	18
200 to 499	69	47	49	2	4	15	16	29
500 to 999	45	48	45	5	10	8	11	40
1,000 or more	49	60	39	8	29	36	6	35
			1950 Income of $2,000 to $4,999					
Any amount	549	53	30	7	14	32	19	25
1 to 199	148	52	43	6	2	14	14	20
200 to 499	158	57	31	7	6	31	23	25
500 to 999	109	56	23	8	15	44	19	27
1,000 or more	131	48	20	8	41	48	21	31
			1950 Income of $5,000 or More					
Any amount	284	45	17	10	24	41	26	37
1 to 199	42	46	23	7	14	19	30	30
200 to 499	56	55	16	8	3	35	27	30
500 to 999	55	40	25	10	20	47	30	41
1000 or more	128	44	12	13	39	49	23	40

[a] Includes food, clothing, and other nondurable expenditures.

[b] Includes business investments, purchase of home or other real estate, and security investments.

[c] Includes travel, amusement, vacations, furs, jewelry, and marriage.

[d] Includes repairs and additions to house, taxes, car repairs, children's education, loans to friends and family, moving, farm operating expenses, etc.

Source: Survey of Consumer Finances.

All spending units treated in this table reduced their liquid asset holdings between early 1950 and early 1951. The rows add to more than 100 per cent since more than one major item of expenditure might be reported by a single spending unit. The table is based on answers to two questions asked of spending units reporting reductions in liquid assets: "What sort of things did you use the money for?" and "Did you have any large expenses we did not talk about, for instance, doctor and hospital bills, expenses for moving or trips or the like?"

it *can* be used. One can assume that the use of credit cannot become more and more important year after year, indefinitely, but that presumption is of limited use in a projection for one particular year.

A second type of data about consumer borrowing concerns the total burden of consumer debt. If debt is not rising, or is rising less rapidly than income, consumers may be able to borrow at the same level or at a higher level. A rising ratio of debt to income may lead to the opposite conclusion. Here, as with income and liquid assets, the essential datum is the frequency distribution, either the frequency distribution of total debt or, better, the frequency distribution of the ratio of debt to income. For example, if the Surveys should show that in one year K per cent of the population had total debt equal to or greater than their income, while a year later $2K$ per cent of the population had total debt equal to or greater than their income, this finding would suggest that consumers had been borrowing at a higher rate than they could maintain. Their ability to finance further purchases by more borrowing would be in doubt. Actual data from the Surveys on trends in debt have not, unfortunately, been fully comparable from year to year.

It hardly seems necessary to demonstrate here that information about trends in the distribution of consumers' holdings of liquid assets and of the burden of debts which they are supporting is rele-

TABLE 6

Method of Financing Durable Goods Purchased, 1947-1950

Method of Financing	*1947*	*1948*	*1949*	*1950*
	Per Cent of Spending Units Who Bought Durables Other than Cars			
All items bought for cash	57	51	46	49
All items bought on installment	31	37	44	40
Some items bought for cash, some items on installment	11	11	10	9
Not ascertained	1	1	[a]	1
Total	100	100	100	100
	Number of Cases			
	1,286	1,384	1,405	1,471
	Per Cent of Sample Purchasing Durables Other than Cars			
	35	39	39	41

[a] Less than 0.5 per cent.

Source: Survey of Consumer Finances.

The durable goods included are radios, television sets, refrigerators, furniture, washing machines, stoves, and other electrical appliances.

TABLE 7

Method of Financing Automobiles Purchased, 1947-1950

Method of Financing	New Cars				Used Cars				All Cars			
	1947	1948	1949	1950	1947	1948	1949	1950	1947	1948	1949	1950
	Per Cent of Spending Units Who Bought Cars											
Cash (including trade-in)	71	66	55	54	63	55	46	42	65	59	50	47
Installment												
Borrowed less than 50 per cent	15	13	15	19	12	13	14	10	13	13	15	13
Borrowed 50 per cent or more	14	20	27	26	24	29	37	45	20	26	33	37
Per cent borrowed not ascertained	[a]	[a]	1	[a]	[a]	[a]	[a]	1	2	[a]	[a]	1
Gift	[a]	[a]	[a]	1	[a]	[a]	1	1	[a]	[a]	1	1
Method of financing not ascertained	[a]	1	2	[a]	[a]	3	1	1	[a]	2	1	1
Total	100	100	100	100	100	100	100	100	100	100	100	100
	Number of Cases											
	264	256	351	400	307	12	433	458	571	628	784	858
	Per Cent of Population Purchasing Cars											
	6	6	10	10	9	11	12	14	15	17	22	25

[a] Less than 0.5 per cent.

Source: Survey of Consumer Finances.

vant to projections of consumers' demand. In the authors' experience few economists question the relevance of these data. The questions at issue are rather: first, What other data are also relevant? and second, How should the relevant data be combined?

2. Willingness to buy

The next major type of information concerns individuals' "willingness to buy." Consumers' estimates of their ability to buy include both their appraisal of their own personal situations and their appraisal of the general economic situation. A consumer certainly may take into account his expectations as to the course of his income in the future (see table 8). He may be influenced by any

TABLE 8

Expectations of Income Change, 1950-1951

Expected Income Change	*1950*	*1951*
	Per Cent of All Spending Units	
Will make more in current year than in previous year	30	39
About the same	43	35
Will make less	16	13
Don't know	9	12
Not ascertained	2	1
Total	100	100
	Number of Cases	
	3,512	3,415

Source: Survey of Consumer Finances. The question was: "Now for the current year, 1951, do you (and your wife) think your income will be larger, the same, or smaller than in 1950?"

changes in his rate of income in the recent past. He will not limit himself, however, to looking at his dollar income. In estimating whether he is *better off* than he was, a consumer may take into account any kind of shift in his financial position, including changes in his estimated future liabilities, changes in the value of his assets, and price changes (see tables 9 and 10). Many individuals whose rate of income has increased over a year feel at the end of the year that they are worse off than they were at the beginning, and the reverse is also true. The trend in the proportions of the population who fall in these deviant groups and the reasons they give for their statements provide valuable sources of information on consumer reactions to economic events (see table 11).

TABLE 9

Subjective Evaluation of Personal Financial Position Compared with Year Ago, 1950-1951

Evaluation of Financial Situation	*1950*	*1951*
	Per Cent of All Spending Units	
Better off	32	32
About the same	32	29
Worse off	34	37
Undecided, don't know	1	1
Not ascertained	1	1
Total	100	100
	Number of Cases	
	3,512	3,415

Source: Survey of Consumer Finances. The question was: "Would you say you folks are better off or worse off financially now than you were a year ago?"

TABLE 10

Causes of Changed Financial Position of Spending Unit, 1950-1951
(*percentage of spending units mentioning different factors*)

	1950	*1951*
Factors making for improved position		
Wage or salary raise, promotion, shift to better job	20	30
More work, steadier work, overtime, more members of spending unit working	8	11
Higher returns from business, farm, profession	3	6
Better net worth position, greater savings, bills paid, house bought	10	11
Other factors	7	9
Factors making for less satisfactory position		
Wage or salary cut, shift to poorer job	5	4
Less work, less steady work, unemployment, less overtime	15	9
Lower returns from business, farm, profession	9	6
Higher prices, high cost of living	3	32
Increased expenses not due to higher prices	6	7
Other factors	10	14

Source: Survey of Consumer Finances. Based on answers to the question cited in the footnote to table 9 and the question: "Are you folks making as much money now as you were a year ago, or more or less?" Each of these questions is followed by a supplemental question such as "How is that?" or "Why is that?"

Since a respondent may mention more than one factor, the columns add to more than 100 per cent.

TABLE 11

Subjective Evaluation of Personal Financial Situation at Present in Relation to a Year Ago within Groups Which Differ in Present Earning Rate Compared with a Year Ago, 1950-1951

Evaluation of Financial Situation	*All Nonfarm Units,*[a] *1950*	*All Spending Units, 1951*	*Present Earning Rate Compared with Last Year*					
			Making More Now		*Making the Same Now*		*Making Less Now*	
			1950	*1951*	*1950*	*1951*	*1950*	*1951*
			Per Cent of Spending Units within Each Group					
Better off than a year ago	33	32	70	53	22	15	10	10
No change	33	29	18	25	56	42	15	17
Worse off than a year ago	32	37	10	21	21	41	74	71
Uncertain, don't know	1	1	1	[b]	1	[b]	1	1
Not ascertained	1	1	1	1	[b]	2	[b]	1
Total	100	100	100	100	100	100	100	100
			Number of Cases					
	3,031	3,415	973	1,607	1,269	1,138	789	602

[a] Only nonfarm spending units were asked about present earning rate compared with a year ago in the Survey made in early 1950; therefore, the figures for 1950 are based on nonfarm spending units only.

[b] Less than 0.5 per cent.

Source: Survey of Consumer Finances.

What is the evidence that people's perceptions of their ability to buy are in fact related to their purchases? One type of substantiation would relate these attitudes as expressed at the beginning of the year to purchases made during the year. Another type consists in showing the existence of a relation between these variables and plans to buy as expressed during another portion of the same interview. Let us examine some illustrations of the latter type of evidence.

Table 12 shows such a relation between feeling "better off" than a year ago and planning to buy. In the income group from $3,000

TABLE 12

Relation between Feeling "Better Off" and Planning to Buy, within Income Groups, 1952

Income in Previous Year (dollars)	*Per Cent Planning to Buy a Car or Other Durable Good within Groups Who Think that, Compared with a Year Ago, Their Position Is:*		
	Better Off	*Unchanged*	*Worse Off*
Under 3,000	34	18	19
3,000 to 4,999	41	30	29
5,000 and over	53	42	36

Source: Survey of Consumer Finances.

to $4,999, for example, of those who feel "better off" 41 per cent plan to buy, while of those who feel "worse off" only 29 per cent plan to buy. Similarly, table 13 shows a relation between both "making more" money now than a year ago and expecting to make more,

TABLE 13

Relation between "Making More" than a Year ago, Income Expectations, and Planning to Buy, within Income Groups, 1952

Change in Earning Rate since a Year Before	*Per Cent Planning to Buy a Car or Other Durable Good within Groups Who:*		
	Expect to Make More	*Expect to Make the Same*	*Expect to Make Less*
Making more now	45	33	33
Making the same	43	20	16
Making less	39	15	21

Source: Survey of Consumer Finances.

on the one hand, and planning to buy, on the other. The population is divided into nine groups in this table. First, each spending unit was classified according to whether it is "making more," "the same," or "less"; then each of these groups was divided according to expected changes in income. The body of the table shows the proportion within each of the nine groups who plan to buy. For example, of those who are making more and also expect to make more, 45 per cent plan to buy, but of those who are making less and expect a further decline, only 21 per cent plan to buy.

Another aspect of consumers' estimates of their personal situation is their underlying attitude toward their liquid assets. For example, there may be changes in people's plans or lack of plans for the use of their series E bonds. In fact there have been no fundamental changes in this area in the postwar period. A related possibility is that continued actual and prospective price increases may lead people to believe that it is unwise to keep their money in liquid assets (see table 14). Plans for the use of liquid assets become particularly interesting at decision points, such as when bonds mature.

Most economists will agree that it is important for the economy whether consumers do or do not continue to hold liquid assets. The point which is open to debate is the validity of the questions used, a matter which might be investigated by reinterviewing spending units to discover what they actually did with their maturing bonds, for example. No such investigation has been undertaken.

Consumers take into account not only their personal financial situation, but also the economic environment in which they live. Their views of the situation in individual markets, and of the underlying economic situation in the country as a whole, may be relevant to their purchases. Consumers' attitudes toward the present level of prices and their price expectations are relevant here (see table 15). Surprisingly, the data indicate little or no relation between consumers' price expectations and their plans to buy or their actual purchases. The available data on price expectations concern expectations for a period of a year, and one may argue that a longer or shorter period is relevant. The data also refer only to the direction of price movement, and it can be argued that more effort should be put into estimating the magnitude of the expected change or the assurance with which consumers predict that prices will behave in a certain way. As matters now stand, however, the actual variations

TABLE 14

"Wisest Place to Put Money," by Income Groups, 1949 and 1951

Wisest Place to Put Money	*$3,000 or Over*		*$3,000 to 3,999*		*$4,000 to 4,999*		*$5,000 to 7,499*		*$7,500 or over*	
	1949	*1951*	*1949*	*1951*	*1949*	*1951*	*1949*	*1951*	*1949*	*1951*
	Per Cent of All Spending Units in Designated Income Groups									
Fixed money assets	79	69	86	80	80	70	74	65	64	47
Banks	18	13	20	16	17	14	17	9	16	7
Savings bonds	54	49	59	54	56	48	49	51	43	37
Banks and bonds	7	7	7	10	7	8	8	5	5	3
Variable money value assets	11	23	8	14	12	23	14	26	22	45
Common stock	2	6	1	2	3	6	3	6	7	16
Real estate	9	16	7	12	9	17	11	19	14	23
Common stock and real estate	[a]	1	[a]	[a]	[a]	[a]	1	1	1	6
All other combinations	5	4	2	3	4	1	7	5	7	7
None of these		1	2	[a]	3	2	3	2	2	1
Doesn't know, not ascertained	5	2	2	3	1	4	2	2	4	1
Total	100	100	100	100	100	100	100	100	100	100
	Number of Cases									
	1,751	1,000[b]	671	300[b]	414	220[b]	407	270[b]	259	150[b]

[a] Less than 0.5 per cent.

[b] Approximation.

Source: Survey of Consumer Finances. The question was: "Now I have one last question about how people save. Suppose a man has some money over and above what he needs for his expenses. What do you think would be the wisest thing for him to do with it nowadays: Put it in the bank, buy government savings bonds with it, invest it in real estate, or buy common stock?"

in consumers' price expectations which we have found do not seem to have much relevance to their purchases.

TABLE 15

Trend on General Price Expectations, 1949-1951

Price Expectations	*1949*	*1950*	*1951*
	Per Cent of All Spending Units		
Prices will (probably) rise	8	15	77
Prices will stay about the same; don't know what prices will do	35	42	19
Prices will (probably) go down	55	41	3
Not ascertained	2	2	1
Total	100	100	100
	Number of Cases		
	3,510	3,512	3,415

Source: Survey of Consumer Finances. The question was: "What do you think will happen to the prices of things you buy in (1951)?—Do you think they will go up, or down, or stay about where they are now?"

Consumers' expectations of shortages and of changes in the quality of available commodities also become relevant in periods of impending shortages. In recent Surveys we have approached this question by asking whether consumers think the present is a good time to buy. The answers to this question tend to give an indication of the importance attached to prices, shortages, quality of goods, and other factors (see table 16).

Also closely related to whether consumers think that now is a good time to buy is their opinion as to the general economic condition of the country. By this is meant whether they think times are good now, how they see the present as compared with the recent past, and their estimate of what movements are likely in the future. People with optimistic expectations for the country are more likely to plan to buy houses and durables than people with pessimistic expectations. Attitudes about the state of affairs in the country as a whole are also related to consumers' estimates of their personal situations. For example, a man who anticipates a depression in the near future is likely to feel insecure about his own income. The investigation of consumers' reactions to general economic conditions may lead into the study of their knowledge of economic processes and their understanding of how the economic system works.

TABLE 16

Opinions of Buying Conditions and Reasons Given for These Opinions, Early 1951
(*percentage of spending units in the population*)

Opinions and Reasons	*Per Cent of Population*	*Per Cent of Reasons*[a]	*Per Cent of Population for Given Reason*
Good or very good time to buy	32		
Reasons given by those who feel it is a good time:			
Shortages, present or expected		39	17
Prices going up, or not coming down		33	14
Quality good now, better than it will be		7	3
People can afford to buy now		3	1
Taxes on goods will be increased		3	1
Personal situation good		2	1
Other supporting reasons		5	2
Subtotal		92	
Reservations expressed ("It's a good time but. . . .")		6	3
Reasons not ascertained		2	1
Total		100	
Middle position: In some ways a good time, in other ways a bad time to buy; or it depends	13		
Reasons why it is a good time given by those who take the middle position:			
Shortages, present or expected		15	3
Prices going up, or not coming down		8	2
People can afford to buy now		3	1
Quality good now, better than it will be		3	1
Other reasons good time to buy		5	1
Subtotal		34	
Factors on which "it depends" (according to some people who take the middle position)			
Depends on personal situation		38	7
Depends on other factors		2	1
Subtotal		40	
Reasons why it is a bad time given by those who take the middle position:			
Prices are high; prices going up		16	3
Other reasons bad time to buy		9	2
Subtotal		25	
Reasons not ascertained		1	
Total		100	

TABLE 16 (continued)

Opinions and Reasons	*Per Cent of Population*	*Per Cent of Reasons*[a]	*Per Cent of Population for Given Reason*
Bad or very bad time to buy	50		
Reasons given by those who feel it is a bad time:			
Prices are high; prices going up		57	37
Quality is poor; emphasis now on quantity		6	4
Personal situation bad		5	3
Shortages, materials needed for war		5	3
Conditions are uncertain		4	3
Taxes on goods are high		2	1
Too many regulations on installment buying		2	1
Buying would *cause* panic buying, inflation, shortages		2	1
Bad times ahead, should save now		2	1
Price controls will keep prices from rising		1	1
Bad time, other reasons		5	3
Subtotal		91	
Reservations expressed		6	4
Reasons not ascertained		3	2
Total		100	
Don't know	3		
Opinions not ascertained	2		
Total	100		
Number of cases	1,925		3,415

[a] The percentage distribution of reasons is given for each segment of the population classified in the three major opinion categories.

Source: Survey of Consumer Finances. The question was: ". . . looking at things in general, do you think it's a good time or a bad time to buy autos and large household items?" After the respondent had expressed his opinion he was asked, "Why?" About one-third of the respondents gave two or more reasons for their opinion, of which two are included in these percentages.

Table 17 indicates that there is a relation between thinking that the present is a good time to buy cars and durables and actually planning to buy. For example, in the income group below $3,000, of those who feel the present is a good time to buy 31 per cent plan to buy, but of those who feel that the present is a bad time to buy, only 20 per cent plan to buy. A positive relation between feeling that the general economic outlook is favorable and planning to buy has been found repeatedly in the Survey.[7] Since 1950, however, the

[7] See Katona, *op.cit.*, table 32, p. 183. The same table includes data showing the lack of relation between price expectations and plans to buy.

question about whether the individual expects good or bad times for the country as a whole has been crowded out of the Surveys.

TABLE 17

Relation between Feeling that Now Is a Good Time to Buy and Planning to Buy, within Income Groups, 1952

Income in Previous Year (dollars)	*Per Cent of Spending Units Planning to Buy a Car or Other Durables within Groups Who Think that:*		
	Now is a Good Time to Buy	*It Depends*	*Now is a Bad Time to Buy*
Under 3,000	31	35	20
3,000 to 4,999	41	32	31
5,000 and over	48	43	41

Source: Survey of Consumer Finances.

Consumers' willingness to buy depends upon their needs and aspirations, as well as upon their estimate of their economic position. Investigation of consumers' wants leads to the consideration of their present stocks of goods. Data about the level of stocks considered in isolation are likely to prove misleading. Consumers' wants are capable of expansion, and anyone who assumes that the proportion of the population who own some commodity will not rise above a certain level can be mistaken. Data about stocks may, however, be used for such purposes as to separate demand into two components: demand for the first purchase of a particular type of good, for example, the first purchase of an automobile by an individual; and replacement demand, for example, trading in a car bought used for a new car.

3. Plans to buy[8]

The final category of data relevant to projections of demand is data about consumers' plans to buy cars, houses, and durable goods. Strictly speaking, these data refer not to plans but to expected purchases, since the questions ask whether individuals "expect to buy" these items. Since what people expect to buy reflects both what they are able to buy and what they wish to, these data are the

[8] A discussion of the data on planning by consumers appeared in "Values and Limitations of Consumer Financial Surveys for Economic Research," by R. A. Young and D. McC. Holthausen, *Federal Reserve Bulletin*, March 1947.

result of the interaction of all the factors just discussed. In a sense these questions represent the direct approach to the problem of projecting demand. If you want to know what a man is going to do, one way to find out is to ask him (see table 18). You may discover

TABLE 18

Consumer Intentions to Purchase Automobiles, Other Durable Goods, and Houses, 1948-1951

Attitude toward Purchase	*1948*	*1949*	*1950*	*1951*
Automobiles	*Per Cent of All Spending Units*			
Will buy[a]	7	9	10	5
Probably will buy, undecided	9	10	7	7
Do not plan to buy	84	81	83	87
Not ascertained	[b]	[b]	[b]	1
Total	100	100	100	100
Other durable goods				
Will buy[a]	16	17	19	20
Probably will buy, undecided	11	14	9	7
Do not plan to buy	72	69	72	72
Not ascertained	[b]	[b]	[b]	1
Total	100	100	100	100
Houses (nonfarm)				
Will buy[a]	3	3	4	3
Probably will buy, undecided	4	4	4	5
Do not plan to buy	83	83	82	83
Not ascertained	[b]	1	1	[b]
Farmer (question not applicable)	10	9	9	9
Total	100	100	100	100
	Number of Cases			
	3,562	3,510	3,512	3,415[c]

[a] Includes those who have already bought during the year. Since interviewing takes place during both January and February, about one month's actual purchases are included in the "will buy" category.

[b] Less than 0.5 per cent.

[c] For 1951 the number of cases is 3,415 for houses only. For automobiles and other durables the number is 1,927.

Source: Survey of Consumer Finances. The questions asked are: "Do you expect to buy a house for your own year-round use this year, 19—?"; "Do you expect to buy a car this year, in 19—?"; "Do you expect to buy any large items such as furniture, a refrigerator, radio, television set, household appliances and so on—during this year 19—?"

what he would like to do, however, instead of what he actually will do.

In reinterviewing persons who stated that they planned to buy houses, cars, or other durables, we have found that there is a considerable degree of agreement between what an individual says he

plans to buy or expects to buy and what he actually buys in the ensuing year. The evidence is complex; it is discussed at length in the second part of this paper.

If individuals always made conscious decisions to buy a year in advance, these data would be much simpler than they are. What is required for a simple interpretation is that the individual find himself in a situation where he is impelled to make a choice, to make it at a conscious level, and to make it far in advance of the consequent action. In some cases these requirements are met. In others none of them may be met. That is, no choice may be involved as the individual sees the situation, the essential processes may be subconscious, and the development of forces leading to the act of purchasing may occur immediately before the act. The answers to the questions about buying intentions, therefore, come from individuals in quite different psychological situations. These differences are not necessarily revealed by differences in the verbalizations used in the answers.

Trends from year to year tend to avoid some of the difficulties implicit in this situation. More people say they are thinking of buying a home at the beginning of a year than actually will buy. (Compare table 18 with table 19.) That fact, however, is of secondary interest.

TABLE 19

Actual Purchases of Houses (Nonfarm), 1948-1950

Buyers	*1948*	*1949*	*1950*
	Per Cent of All Spending Units		
New houses	1.5	1.2	1.5
Old houses	3.1	1.9	2.7
Total buyers	4.6	3.1	4.2
	Number of Cases		
	3,562	3,510	3,512

Source: Survey of Consumer Finances.

One should study the trend from year to year in the proportion who plan to buy homes rather than the absolute level of the proportion. The critical question is whether an increase or a decrease occurs in the level of consumers' intentions.[9]

The assumption involved in studying trends from year to year is that the same proportion as in earlier years of consumers who say

[9] See also the discussion of planning by consumers in Katona, *op.cit.*, pp. 64-69.

they do or do not expect to buy are accurately foreshadowing their behavior. In other words, we assume constancy from year to year in the elements which lead some consumers to understate and others to overstate their intentions.

This assumption is closer to the facts than the assumption that the proportion who do buy will turn out to be exactly equal to the proportion who say they will buy. Nevertheless, there is strong reason to believe it will not always be proved correct. The best method we have of assessing the meaning of trends in expected purchases is to study the underlying factors, consumers' basic ability to buy and willingness to buy.

There are great advantages, then, in interpreting the data on expected purchases in relation to the other data from the Surveys. All the data—consumers' ability to buy, their willingness to buy, and their expected purchases—should form a consistent picture. To the extent that this internal consistency appears in fact, one can have confidence in the conclusions drawn. For example, if a much larger group of people should plan to buy in one year than a year earlier, but people's ability to buy appears weaker, doubt would be cast on the carrying out of the plans. On the other hand, if ability to buy is at a lower level, but plans to buy decline and consumers regard the present as a bad time to buy, the findings form a consistent picture.

By way of summarizing to this point, it may be useful to list the variables we have been discussing in the scheme for analyzing consumer demand. The principal variables are as follows:

I. Ability to buy
   A. Trend in distribution of income
      1. Trend in median income
      2. Trend in proportion with very low incomes
      3. Trends in allocation of income—proportion of positive savers, proportion of durable goods buyers
   B. Trend in distribution of liquid assets
      1. Trend in median
      2. Trend in proportion with no liquid assets
   C. Trend in ability to borrow
      1. Trend in use of borrowing in past purchases
      2. Trend in ratio of total consumer debt to income[a]

[a] Not covered at all or covered only in part in the 1951 Survey of Consumer Finances.

II. Willingness to buy
  A. Trend in perceptions of own ability to buy
    1. Income expectations
    2. Feeling of being financially "better off"
    3. Attitudes toward liquid assets—plans for their use, effect of price changes on their value
  B. Trend in perceptions of the general economic situation
    1. Expected prices
    2. Evaluation of the present as a time to buy
    3. Evaluation of the past, present, and future of the general economic situation[a]
  C. Trend in wants and needs[a]
    1. Stocks in relation to wants[a]

III. Plans to buy
  A. Trend in proportion planning to buy different goods

[a] Not covered at all or covered only in part in the 1951 Survey of Consumer Finances.

Given this list of variables, one should not restrict one's self to simple trends in the frequency distribution for each variable. Interrelations among the variables are important both in setting up and revising the analytical scheme, and in applying it. In setting up the scheme we have studied the question of what variables are correlated with past purchases and expected purchases. In applying the analytical scheme several types of functional relations are useful. The relation between measures of ability to buy and plans to buy may be enlightening. If the same proportion of the population plans to buy cars in one year as in the previous year, is there any difference in the ability to buy of the two groups? Comparing the income distributions of the prospective buyers for the two years may help answer this question (see table 20). In practice these distributions have not differed from year to year. But if and when they do differ for well-established goods, the differences will suggest differences in ability to buy.

Within the analytical scheme, interrelations among variables may also be used to test hypotheses about shifts in the characteristics of people who demand particular goods. One may be interested, for example, in following the change in the income distribution of prospective television buyers. Note that the meanings of a shift in the income distribution of prospective purchasers are different for a new commodity, such as television, and a commodity which has been available for some time, for example, automobiles. One may

also be interested in long-run shifts in a market resulting from such forces as the changing age distribution of the population, but shifts of this sort are likely to be small in any one year and to be obscured by sampling fluctuations.

TABLE 20

Distribution of Prospective Car Purchasers by Income, 1948-1951

Income (dollars)	*1948*	*1949*	*1950*	*1951*
		Per Cent		
Under 1,000	3	4	4	5
1,000 to 1,999	7	9	11	10
2,000 to 2,999	19	16	16	13
3,000 to 3,999	20	23	20	20
4,000 to 4,999	17	16	16	18
5,000 and over	34	32	33	34
Total	100	100	100	100
		Number of Cases		
	438	499	464	145

Source: Survey of Consumer Finances. This table includes those who actually had bought a car in the month or so before they were interviewed in the calendar year, and those who said they "definitely" or "probably" would buy before the end of the year, but not those who were "undecided" about buying.

In applying the scheme it has also proved important to study trends in the relations between certain attitudes. For example, the trend in the relation between answers to a question about whether an individual is making more money than he was a year ago, and answers to a question on whether he feels that he is "better off" than he was a year ago, is revealing. The principal factor which tends to cause changes in this relation is popular awareness of the impact of price changes. When prices are rising, there is a tendency for a smaller proportion of those who are making more to say they are better off. The inference as to the importance of prices is supported by the reasons people give as to why they are better off or worse off than they were a year earlier.

It is also possible to use data from the Surveys to study the underlying structures of demand for automobiles, for houses, and, to some extent, for the other durables. To the extent that the results of analysis of the underlying structures of demand for individual items are available they can be used to supplement, and hence to strengthen, general conclusions about the level of consumers' demand. As the complexity of the analysis increases, however, it takes more time and more effort to complete the preliminary study. Nevertheless,

this is one direction in which it would be possible to expand our efforts in the future.

4. Application of analytical technique

As a means of summarizing the preceding discussion it might be helpful to illustrate the application of the analytical technique to the data for a particular year. Let us select 1951, the year of this Conference. Consumer demand was high in the period following the outbreak of the Korean war and prices of all kinds of commodities rose. The Department of Labor's index of wholesale prices, for example, reached a peak in March 1951, just after the survey was taken.

The data on consumers' ability to buy early in 1951 showed only modest changes from a year earlier. The distribution of income shifted upward, with the median income rising some 10 per cent to a level of $3,000 (see table 1). Since the sampling error of median income is roughly $150 (at the 95 per cent level of probability), we may safely infer that the difference of $300 in income between the two years was not the result of chance fluctuations in the sample.[10] Prices had risen by about the same proportion over the year. The proportion of consumers in the low income group below $2,000 showed a slight decline, from 33 to 30 per cent of all spending units, but this decline must be interpreted in the light of the change in the price level. The decline is large enough not to be attributable to chance. A difference between these two proportions as large as 2.9 per cent might occur by chance, but the actual difference is 3.2 per cent.[11]

The distribution of liquid assets also showed only modest differences from the distribution for a year earlier. The proportion of the population with no liquid asset holdings fell slightly, from 31 to 28 per cent, reversing a trend which had continued from 1947 through 1950. Again the difference is just large enough to be reliable. As a result the median holding of all spending units tended to increase, but there was a decline in the median holdings of all those who had any liquid assets. The median for holders fell, in fact, from $810 to $710. The sampling error of this difference has not been

[10] The estimate of $150 must be taken as rough since it was made on the basis of data for earlier years, but it is highly unlikely that new estimates would be twice as high.

[11] The yardstick of chance used here and in the following discussion is the 95 per cent level of probability.

estimated specifically, in contrast to the situation with respect to median income. But the decline of 3 per cent in the proportion with holdings over $2,000 is reliable (see table 4).

The data on consumers' ability to borrow, as noted earlier, are not entirely satisfactory. The proportion of purchasers of cars and durables who borrowed in the year 1950 appeared to be running at about the same level as the year before. Actually, the data indicate that the proportion of car buyers who paid cash fell by 3 per cent, while the proportion of buyers of other durables who paid cash for all items rose by 3 per cent (see tables 6 and 7). No doubt these average figures for the year obscured opposing tendencies from periods before and after the introduction of credit regulations. By and large, consumers' ability to buy in early 1951 was not too different from their ability to buy in early 1950.

Willingness to buy showed a somewhat more complex picture. Income expectations improved, with a third more expecting income increases than a year earlier. The increase was from 30 to 39 per cent, or three times as much as might be attributed to sampling error (see table 8). People did not feel, however, that they were better off than a year earlier. If anything, a somewhat larger group thought that they were worse off, in spite of the fact that almost one-half the population said they were making more money than they had a year earlier. The proportion reporting that they felt "better off" was unchanged at 32 per cent, but the proportion feeling "worse off" increased from 34 to 37 per cent, a reliable increase. Of those who were making more only about half felt they were better off, compared with 70 per cent the year before (see table 11). Spontaneous mentions of high prices and the high cost of living as factors which tended to make people worse off increased almost ten times, from 3.5 to 32 per cent (see table 10). These changes, of course, are far larger than could be attributed to chance.

People's attitudes toward their liquid assets proved to be undergoing only a slow change. The comparison here is over a two-year period. There was an increase from 11 to 23 per cent in the proportion thinking stocks and real estate were the wisest place to put their money, while the overwhelming majority (69 per cent) still preferred fixed value assets (see table 14).

Consumers' perceptions of the general economic situation changed more rapidly. A large majority (77 per cent) expected price increases in early 1951 (see table 15). These were not interpreted, however, as meaning that the present was a good time to buy. On

the contrary, only 32 per cent of the population felt that the present was a good time to buy and more of these were concerned with present or expected shortages (39 per cent) than with the price level (33 per cent) (table 16). One-half of the population felt the present was a bad time to buy, the remainder being undecided or ambivalent. Of those who felt it was a bad time to buy, by far the largest number referred to high prices.

Plans to buy reflected the cautious conclusions which emerged from the data on ability to buy and willingness to buy. About the same number of people were thinking of buying a house as a year earlier, but they tended to be less certain that they would actually buy. The proportion indicating definite plans fell from 4 to 3 per cent. The unrounded difference is 1.2 per cent, or barely enough for reliability. An equal and opposite movement occurred in the proportion with less definite plans (see table 18). The proportion planning to buy a car showed a definite decline from 17 to 12 per cent of the spending units. The proportion planning to buy other durables remained more or less unchanged at 27 to 28 per cent of the population.

The general conclusion which emerges is that people felt they were in about as strong a position to buy in early 1951 as they had been in 1950, but they had real doubts about the wisdom of making large purchases in 1951. These doubts were much more widely held than the idea that one should convert everything into goods to ride up with the inflation. Traces of the latter attitude may be found in the answers to the question about the wisest place to put one's money, but these answers must be considered along with the statements about being "worse off" because of high prices and about the present being a bad time to buy because of inflation.

Taken together, the data from the Survey suggested that consumer demand would be somewhat weaker in 1951 than in 1950. In other words, a decline in the volume of purchases by consumers was indicated. This projection, like any other, was subject to the possibility that forces not taken into account might change the variables which entered into the analysis sufficiently to alter the course of events. Ability to buy may change as a result of events in other sectors of the economy. Willingness to buy and plans to buy may change similarly. Forces in the consumer sector not taken into account also may cause the projection to go astray. Since the possibilities include any factors which may change willingness to buy, its determinants, as well as the impact of forces in the other sectors

of the economy on the level of income, must be taken into account. Ultimately, we may hope to be able to say more than is now possible about what invalidates projections for the consumer sector.

It is inherently difficult to validate as a whole a method of analysis such as that presented above. Certainly one should examine the record of inferences drawn in the past. Since the paper by Irving Schweiger elsewhere in this volume is concerned with this problem, it need not be discussed here. However favorable the record may be, there is always the possibility that events have moved in the right direction for the wrong reasons. This possibility is particularly serious, as mentioned earlier, for projections based on one sector considered in isolation.

The reinterviewing of identical economic units offers another tool for the analysis of projections which we have employed for the study of one major element in the analytical scheme, the data on intentions to buy. The separate study of these data has proved enlightening for the method as a whole, though it does not constitute a test of it.

C. Reinterview Data[12]

In practice, prediction of forthcoming purchases of durable goods will generally be based on trend data derived from repeated interviews. However, one's understanding of the data is deepened by a reinterview investigation of individual expectancies, abilities, and fulfillments. This approach is the subject of this section. It is primarily an exploratory look at subjective expectancies as a predictive instrument. Analytically, it is little more than a presentation of data, but much of the confidence that is placed in the previously developed schema arises out of analyses of this nature.

In the Surveys of Consumer Finances, data on expectancies regarding purchases of durable goods are only one item or element in the set of those factors that offer some insight into the consumer sector of the economy.

When one concentrates on "expectancies" (the resultants of needs, wants, means, etc.) as a predictor, one is making several assumptions about the functions of the other elements in the situation—as impediments or facilitators. Knowledge of their influence and relevance is therefore important. Reinterviews with identical respondents enable the investigator to check on the realization of expect-

[12] Stephen B. Withey is primarily responsible for this section.

ancies by individuals and also the predictive value of aggregate expectancy data, and to relate them to impeding or facilitating factors.

On an a priori basis one would not expect all those expressing a purchase expectancy actually to carry out their plans, even in a period as long as a year. This is one reason why no attempt is made in this analysis to develop equations for prediction of individual behavior. The development of formulae for aggregate prediction would require either repeat reinterviews or repeat interviews over an extended period.

There are many circumstances that would prevent realization of even realistic expectancies. Such circumstances might be predicted for a population on an actuarial basis if sufficient data were available. For events to work out as predicted for the population, the miscalculations for individuals must more or less cancel out, or the bias must be known and therefore be correctable. The peculiar advantage of the approach through individual predictions is that it is possible to go back to the people originally investigated and, by studying in detail why some of the expectancies were fulfilled and some not, gain some insight into the type of bias present in aggregate predictions.

The Survey Research Center conducted reinterviews of this kind in January-February 1949, a year after the original interview took place, and in October 1949, nine months after the first interview.

The procedure followed for reinterview was to pick, by random selection, a sample of the representative sample interviewed in the first study. The reinterview sample was drawn only from urban addresses. The identification of a house by a street name and house number facilitates recontact identification. In rural areas one often has to resort to house descriptions and these sometimes make relocation difficult.

The reinterviews totaled 655 cases with the one-year interval and 590 cases with the nine-month interval. It is apparent that with such small samples a valid check on some items bought by a very small section of the urban population cannot be made. This is another reason why no mathematical or statistical manipulations of the data seemed to be warranted.

The following tables will include some absolute figures where the number of cases is too few to permit the confident use of percentages. Only the rare opportunity for a reinterview prompts the presentation of so few cases. Further, there are so many variables rele-

vant to the topic that the text will be kept to a minimum to permit tabular presentation of the data. Much of the interpretation of the tables is left to the reader, since in many cases it would be repetitious to summarize the table in the text, and in other cases a larger frequency would be needed before statistical treatment could clarify the relations for interpretive insight.

From these studies data will be offered on: (1) ratio of aggregate purchases to aggregate expectancies; (2) ratio of individual fulfillment of expectancies to individual expectancies; (3) factors in expectancy realization or nonfulfillment, involving chiefly (a) period of consideration of purchase and period involved in prediction; (b) postponement of purchase; (c) imprecision in measured expectancies due to vagueness in the expectancy, imprecise measuring instruments, and not interviewing the person most involved in the decision; (d) miscellaneous factors such as illness, accident, and altered circumstances; (e) financial and economic factors affecting fulfillment or nonfulfillment.

Initially, the method used for measuring expectancies and certain conditions at the time of the surveys will be summarily recalled. The first problem that confronts the investigator and the one most subject to manipulative experimentation is the method of measuring expectancies. The method used in the Surveys of Consumer Finances has been the simple one of asking each respondent whether he planned to buy the item during the coming year. The answer, recorded verbatim by the interviewer, is evaluated by the content analysts and the reply categorized on a five-point scale of expectancy, reading: definitely will buy; probably will buy; undecided; probably will not buy; definitely will not buy.

This method of measuring expectancies gives rise to the so-called *cutting-point problem.* Should one assume that only those categorized as "definitely will buy" are actually going to purchase? If not, should one include the entire "probably will buy" group in one's prediction or a fraction of them? If a fraction, then what fraction? The predictor needs to decide on some point on the scale, so that persons above such a point are going to be regarded as future "purchasers" and those below that point as "nonpurchasers." Or he has to devise a formula with fractional predictions from each grouping. The customary solution has been to present the entire scale and base one's interpretation on trend data using the entire column. For purposes of convenience in this analysis, the first two categories are usually lumped together when the category "expect to buy" is used.

The data for car purchases will be presented first and treated in a much more detailed fashion than the data for other durable goods. The most expensive consumer purchase is probably a house, but since a realization of this expectancy involves a move, this cannot usually be checked on an address reinterview study. The next most expensive purchase—a car, particularly a new car—would seem to be the area meriting major emphasis. It should be stressed, however, that at least on the first reinterview study, the one involving a year interval, and that year being 1948, there was still a shortage in the automobile market. There was not the freedom to purchase, in terms of car availability, that existed in, say, 1950.

1. CAR PURCHASES

a. Ratio of aggregate purchases to aggregate expectancies. The data indicate that prediction of the proportion making a purchase of a used car is distinctly poorer than that for new cars. Tables 21 and 22 give percentages of identical spending units interviewed twice.

TABLE 21

Comparison of Percentages of Spending Units Expecting to Buy and Actually Buying Cars, First Reinterview Study

Definitely or probably will buy new	5.3	Bought new	6.1
Definitely, probably, or undecided on buying new	7.9		
Definitely or probably will buy used	2.9	Bought used	8.7
Definitely, probably, or undecided on buying used	3.3		

Source: Survey of Consumer Finances. "Definitely will buy" and "bought" categories both include the few cases of cars bought between January 1 and the interview.

TABLE 22

Comparison of Percentages of Spending Units Expecting to Buy and Actually Buying Cars, Second Reinterview Study

Definitely or probably will buy new	6.7	Bought new	6.8
Definitely, probably, or undecided on buying new	9.3		
Definitely or probably will buy used	3.8	Bought used	11.6
Definitely, probably, or undecided on buying used	5.5		

Source: Survey of Consumer Finances. "Definitely will buy" and "bought" categories both include the few cases of cars bought between January 1 and the interview.

b. Ratio of individual fulfillment of expectancies to individual expectancies. Tables 23 and 24 would seem to indicate that individual

TABLE 23

Realization of Expectancies of New and Used Car Purchasers, First Reinterview Study, 1948
(*per cent of spending units*)

1948 Purchasing	*Definitely Will Buy*		*Probably Will Buy*		*Undecided about Buying*		*Do Not Expect to Buy*
	New	*Used*	*New*	*Used*	*New*	*Used*	
Bought new	57		32		7		4
Bought used	10	54	10	42	11	86	7
Did not buy	33	46	58	58	82	14	89
Total	100	100	100	100	100	100	100
Per cent of sample	4	2	1	1	3	[a]	86

[a] Less than 0.5 per cent.
Source: Survey of Consumer Finances.

TABLE 24

Realization of Expectancies of New and Used Car Purchasers, Second Reinterview Study, 1949
(*per cent of spending units*)

1949 Purchasing	*Definitely Will Buy*		*Probably Will Buy*		*Undecided about Buying*		*Do Not Expect to Buy*
	New	*Used*	*New*	*Used*	*New*	*Used*	
Bought new	43		38	7	40		3
Bought used	8	60	3		15	77	9
Did not buy	49	40	59	93	45	23	88
Total	100	100	100	100	100	100	100
Per cent of sample	5	3	2	1	3	2	82

Source: Survey of Consumer Finances.

predictions based on expectancy are, roughly speaking, equal for new and used cars. The difference between the two lies largely in the large number of persons buying used cars who did not report any expectancy of purchase (see table 25).

These data seem to indicate that there is no clear basis on which to ignore or take into account the "undecided" group. The "definitely will buy" group are more certain of realizing their intentions than any other, but even in this group only about 50 per cent fulfill expectations.

Another way of analyzing the data is to examine the degree of expectancy among those purchasing. This approach is presented in tables 25 and 26.

This series of tables indicates that there is a sizable group that expected to purchase a new car but did not, and also a sizable group that did not expect to purchase one but did. These two groups whose expectancies were not confirmed are the ones that are especially interesting for analysis.

TABLE 25

Breakdown of Expectancies among Car Purchasers, First Reinterview Study
(*per cent*)

	Bought	
Expectancy	*New Car*	*Used Car*
Definitely will buy new	2.4	0.4
Probably will buy new	0.4	0.1
Undecided about buying new	0.2	0.3
Definitely will buy used		0.8
Probably will buy used		0.6
Undecided about buying used		0.3
Do not expect to buy new or used	3.1	6.2
Total	6.1	8.7

Source: Survey of Consumer Finances.

TABLE 26

Breakdown of Expectancies among Car Purchasers, Second Reinterview Study
(*per cent*)

	Bought	
Expectancy	*New Car*	*Used Car*
Definitely will buy new	2.1	0.3
Probably will buy new	0.7	[a]
Undecided about buying new	1.0	0.3
Definitely will buy used		1.7
Probably will buy used	[a]	
Undecided about buying used		1.3
Do not expect to buy new or used	3.0	8.0
Total	6.8	11.6

[a] Less than 0.5 per cent.
Source: Survey of Consumer Finances.

It would seem that prediction of individual behavior, with as simple an instrument as was used, is somewhat futile if not naïve. The approach which is obviously more fruitful and theoretically

sensible is to regard the responses as measuring changes in inclinations to buy.

c. Factors in expectancy realization or nonfulfillment. The availability of information in the interview schedule limited the study of the factors selected to throw light on why intentions changed or were realized. Among the factors chosen for study were those that might offer insight into the nature, quality, worth, and strength of the expectancy itself, and those that might operate in such a way that a genuine expectancy either could not be carried out or was fulfilled after the first interview.

The following questions were asked: (1) Do people plan a purchase far enough in advance so that expectancies at one point in time could be regarded as covering expectancies for periods as long as nine months or a year? (2) How important is the choice of respondent in determining the expectancies of a family unit out of whose budget the expenditure must be made? (3) To what extent should expectancies be regarded as an ongoing psychological state with realization postponed by prevailing and changing market conditions or the financial situation of the spending unit? (4) What sort of events intervene between the time of stated expectancy and the time of purchase in such a way as to void the expectancy? (5) What sort of factors lead to "unexpected" purchasing?

1. Period of consideration of purchase and period involved in prediction. An obvious question relates to the time period covered by the expressed expectancies. Is it too long, or too short? In the *second reinterview* study we asked about the month of purchase. The data indicate that the expectancies reflect the majority of imminent purchases (made within three months), while purchases after three months or at least after six months tend to be largely those not expected at the time of first interview. This is predominantly true for purchases of used cars. However, even first-quarter predictions for individuals are better with new than with used cars (see tables 27 and 28).

Table 29 contains data on the length of consideration prior to the purchase. The question used was, "How long had you been considering buying a car?" and it was asked only of those who bought. It is apparent that most used car purchases entail less than six months' consideration. Furthermore, those who expected to buy and bought tend to be persons who deliberated longer over the purchase than buyers who did not expect to buy.

TABLE 27

Expectancy Related to Time of Purchase of New Car in 1949, Second Reinterview Study
(*per cent*)

	Bought New Car in:		
Expectancy	*1st Quarter*	*2nd Quarter*	*3rd Quarter*
Expected to buy	81	36	26
Uncertain		9	24
Didn't expect to buy	19	55	50
Total	100	100	100
Distribution of purchasers	29	24	47

Source: Survey of Consumer Finances.

TABLE 28

Expectancy Related to Time of Purchase of Used Car in 1949, Second Reinterview Study
(*per cent*)

	Bought Used Car in:		
Expectancy	*1st Quarter*	*2nd Quarter*	*3rd Quarter*
Expected to buy	44	2	
Uncertain	10	10	10
Didn't expect to buy	46	88	90
Total	100	100	100
Distribution of purchasers	34	32	34

Source: Survey of Consumer Finances.

TABLE 29

Length of Time of Consideration of Car Purchase for Specific Expectancy-Realization Groups, Second Reinterview Study
(*per cent*)

Length of Time of Consideration	*Expected to Buy New Car and Did*	*Did Not Expect to Buy and Bought New*	*Did Not Expect to Buy and Bought Used*
Less than 1 month		21	35
1 to 2 months	11	5	10
3 to 5 months	11	5	12
6 to 11 months	24	39	12
12 months or more	39	16	20
A short time	5	3	2
A long time		11	2
Don't know			3
Not ascertained	10		4
Total	100	100	100

Source: Survey of Consumer Finances.

Data are also available on the degree or seriousness of consideration of car purchases. Here again, those expecting to buy and actually buying cars report more involvement and concern over the purchase than the group who bought cars without previously expecting to do so (see table 30).

TABLE 30

Recalled Degree of Consideration Given Purchase Plans for Various Purchasing Groups, Second Reinterview Study
(*per cent*)

Recalled Degree of Consideration	*Expected to Buy New Car and Did*	*Did Not Expect to Buy and Bought New*	*Did Not Expect to Buy and Bought Used*
Purchase followed careful consideration	69	24	16
Purchase followed some consideration	26	50	47
No careful consideration	5	26	33
Not ascertained			4
Total	100	100	100

Source: Survey of Consumer Finances.

2. Postponement of purchase. For an item as expensive as a car it is probably easy to procrastinate for several months. Also, in 1948 there was considerable delay due to late deliveries and limited availability of new models. Thus continued expectancies in spite of nonpurchase become a possible explanation of nonfulfillment of plans to buy.

A check on expectancies of persons previously expecting to purchase but not doing so indicates that a sizable group still expected to purchase a car, especially in the second reinterview study, which involved only a nine-month interval (see tables 31 and 32).

3. Imprecision and vagueness in measured expectancies. In addition to the problem of the cutting point on the five-item expectancy scale and the problem of meaning and nuance in the words used by the respondents that are the basis for classification, there is a problem of who should be interviewed to obtain the most valid information on the expectancy for the spending unit involved. Usually one would regard this key person as being the head of the spending unit.

That this problem cannot be ignored is shown by a comparison of respondent similarity on the two interviews with expectancy realizations in table 33. The group not fulfilling expectancies to pur-

TABLE 31

Expectancies for 1949 of Persons Thinking of Buying a New Car in 1948 but Not Doing So, First Reinterview Study
(*per cent*)

Expectancy to Buy New Car in 1949	*Expected to Buy in 1948 but Did Not*
Definitely or probably will buy	31
Undecided	14
Probably will not or will not buy	49
Not ascertained	6
Total	100

Source: Survey of Consumer Finances.

TABLE 32

Expectancies of Persons Thinking of Buying a New Car in 1949 but Not Doing So, Second Reinterview Study
(*per cent*)

Expectancy to Buy New Car after October 1948	*Expected to Buy in 1949 and Did Not in First Nine Months of 1949*
Definitely or probably will buy in 1950	71
Expect to buy in 1951	4
Expect to buy in next few years	7
Uncertain	9
Don't expect to buy	9
Total	100

Source: Survey of Consumer Finances.

TABLE 33

Realization of Expectancies Related to Identity of Respondents, Both Surveys
(*per cent*)

	Interview on Each Occasion with:		
	Same Respondent		
Expectancy	*Head*	*Not Head*	*Different Respondent*
Expected to buy new, did	82	18	
Expected to buy new, did not	56	11	33
Did not expect to buy			
Bought new	71	11	18
Bought used	62	29	9
Did not buy	69	21	10

Source: Survey of Consumer Finances.

chase has the highest frequency of "different respondents" on both interviews.

An analogous problem is whether the expectancies were real enough or general enough in terms of involving the whole spending unit. A series of questions was used covering reasons for failure to carry out purchasing plans. The leading question in the series asked whether the respondent had planned such a purchase. The short life of some expectancies, or the fact that recall is influenced by subsequent developments, is reflected in the high proportion of persons who did not recall the expectancies they had mentioned nine months previously.

TABLE 34

Responses to Probe on Reasons for Nonpurchase of a New Car of Those Not Buying but Stating Expectancy
(*per cent*)

Reasons for not buying	
Prices too high	31
Did not need one as expected	18
Waiting for new models (made old one do)	5
Did not expect to buy	46
Total[a]	100

[a] Four per cent of sample.
Source: Survey of Consumer Finances.

TABLE 35

Responses to Probe on Reasons for Nonpurchase of Used Cars of Those Not Buying but Stating Expectancy
(*per cent*)

Reasons for not buying	
Price too high	16
Did not expect to buy	84
Total[a]	100

[a] Two per cent of sample.
Source: Survey of Consumer Finances.

Tables 34 and 35 show that among the persons who expected to but did not buy a new car 46 per cent did not recall any such expectancy. In the similar group previously expecting to buy a used car 84 per cent did not recall any such consideration. This may be a matter of glib answers to an interviewer, of repression, or of the influence of subsequent developments.

4. Miscellaneous factors. Tables 34 and 35 also include other reasons why persons expecting to buy a car did not do so.

Whether one has a car, whether it is in good condition, the quality of performance or appearance that one requires—all these are factors that could be relevant to expectancy realization. These factors were not covered in detail in the questionnaire, but some relevant data were obtained. A loose estimate of condition of car owned previous to purchase was given by all those making a car purchase in the period between interviews. The data so obtained indicate that persons not stating an expectancy but nevertheless purchasing tend to regard their cars as in *better* shape than other groups who purchase (see table 36).

TABLE 36

Evaluation of Condition of "Old" Car by Purchasers
(*per cent*)

Condition of Old Car	*Expected to Buy New Car and Did*	*Did Not Expect to Buy and Bought New*	*Did Not Expect to Buy and Bought Used*
Very good		5	
Fairly good	16	71	15
Middle positions	24	13	5
Fairly poor	16		5
Very poor	10	5	20
Did not trade in or sell an old car	31	6	47
Not ascertained	3		8
Total	100	100	100

Source: Survey of Consumer Finances.

However, 70 per cent of those not expecting to buy a car who later purchased a new one claimed, when they were asked why, that they did so because their old one was in poor condition (see table 37).

When respondents were asked how they happened to buy a car at the time they did, their reasons showed that the emphasis was on "need" (either through not having one or owning one in poor mechanical condition), or chance, or lucky events. While it is true that hardly anyone buys a car for reasons other than some type of "need," those offered can be divided on the basis of major emphasis.

TABLE 37
Rationale for Purchase Offered by Various Car-Purchasing Groups
(*per cent*)

Expectancy of Purchasers	*Need One*		*Wanted One*[a]	*Good Deal, Lucky Chance, "Good Time" to Buy*	*Other*	*Total Purchasing*
	None Owned	*Old One in Poor Condition*				
Expected to buy, bought new	21	50	19	10		100
Did not expect to buy, bought new[b]		70	24	5	1	100
Did not expect to buy, bought used	20	36	2	33	9	100

[a] Refers to liking new models or prestige reasons; can include none owned.
[b] Only 15 per cent of this group did not own a car before purchase.
Source: Survey of Consumer Finances.

It seems that those who expect to buy new cars and do so are persons who may not have cars or have cars in poorer condition than those of the less predictable purchasers. They consider purchasing for a longer period and more seriously.

Finally, there is no doubt that the price of the car was an important factor in influencing the purchase of a used car. Considering the number of cases involved, there does not seem to be any significant difference between the expected and the unexpected purchases of new cars. One can say with some confidence, however, that the "unexpected" purchasers of new cars do not buy cars that are any cheaper than those bought by people who state expectancies (see table 38).

5. Financial and economic factors affecting fulfillment and nonfulfillment. Tables 39 to 46 indicate the economic characteristics of persons in differing expectancy or realization groups. The factors selected include: level and change in income; level and change in liquid assets; expected 1948 income; comparison of 1946, 1947, and 1948 financial positions; and year model of car owned in 1947. This analysis could be carried out in the *first reinterview* survey only.

From these tables it is apparent that the factors considered are related in varying degrees to both expectancy and purchase. The general picture seems to be that those whose financial position was stable or improved realized their expectancies and bought a new

TABLE 38

Price of Car Purchased by Varying Expectancy Groups
(*per cent*)

Price of Car (dollars)	*Expected to Buy New Car, Did*	*Did Not Expect to Buy a Car*	
		Bought New	*Bought Used*
1 to 500			35
600 to 1,000			39
1,100 to 1,500			9
1,600 to 2,000	58	37	12
2,100 to 3,000	37	42	
3,100 or over	5	5	
Not ascertained		16	5
Total	100	100	100

Source: Survey of Consumer Finances.

TABLE 39

Income of Various Expectancy and Purchase Groups
(*per cent*)

1947 Income (dollars)	*Expected to Buy New Car*		*Did Not Expect to Buy*	
	Bought New	*Did Not Buy Car*	*Bought New*	*Did Not Buy Car*[a]
Under 3,000		23	15	56
3,000 to 4,999	54	20	30	30
5,000 or over	44	57	53	13
Not ascertained	2		2	1
Total	100	100	100	100

[a] In this series of tables the last column is close to the total sample (about 90 per cent).

Source: Survey of Consumer Finances.

TABLE 40

Liquid Assets of Various Expectancy and Purchase Groups
(*per cent*)

1947 Liquid Assets (dollars)	*Expected to Buy New Car*		*Did Not Expect to Buy*	
	Bought New	*Did Not Buy Car*	*Bought New*	*Did Not Buy Car*
Under 1,000	28	26	28	63
1,000 to 1,999	13	11	18	12
2,000 or over	55	63	43	21
Not ascertained	4		11	4
Total	100	100	100	100

Source: Survey of Consumer Finances.

TABLE 41

Evaluation of 1947 Financial Position of Various Expectancy and Purchase Groups
(*per cent*)

Evaluation of 1947 Financial Position	*Expected to Buy New Car*		*Did Not Expect to Buy*	
	Bought New	*Did Not Buy Car*	*Bought New*	*Did Not Buy Car*
Better off than 1946	40	51	26	26
About the same	54	26	52	37
Worse off than 1946	6	20	15	31
Not ascertained		3	7	6
Total	100	100	100	100

Source: Survey of Consumer Finances.

TABLE 42

Income Change as Measured on Two Surveys of Various Expectancy and Purchase Groups
(*per cent*)

Income Change from 1947 to 1948	*Expected to Buy New Car*		*Did Not Expect to Buy*	
	Bought New	*Did Not Buy Car*	*Bought New*	*Did Not Buy Car*
Had an increase	63	43	63	55
About the same	12	9	20	13
Had a decrease	23	37	11	29
Not ascertained	2	11	6	3
Total	100	100	100	100

Source: Survey of Consumer Finances.

TABLE 43

Comparison of Expected and Actual 1948 Income for Various Expectancy and Purchase Groups
(*per cent*)

Expected and Actual Income, 1948	*Expected to Buy New Car*		*Did Not Expect to Buy*	
	Bought New	*Did Not Buy Car*	*Bought New*	*Did Not Buy Car*
Received more than expected	27	17	63	30
Received expected income	50	40	20	32
Received less than expected	17	32	4	22
Not ascertained	6	11	13	16
Total	100	100	100	100

Source: Survey of Consumer Finances.

In the first interview a question was asked about expected dollar income in the following year. This figure was compared with the income reported in the second interview.

TABLE 44

Comparison of Liquid Asset Changes from 1947 to 1948 of Various Expectancy and Purchase Groups
(*per cent*)

Liquid Asset Change from 1947 to 1948	*Expected to Buy New Car*		*Did Not Expect to Buy*	
	Bought New	*Did Not Buy Car*	*Bought New*	*Did Not Buy Car*
Increase	50	46	37	32
About same	8		4	5
Decrease	30	43	37	38
No liquid assets both years	8	11	4	20
Not ascertained	4		18	5
Total	100	100	100	100

Source: Survey of Consumer Finances.

TABLE 45

Evaluation of 1948 Financial Position of Various Expectancy and Purchase Groups
(*per cent*)

Evaluation of 1948 Financial Position	*Expected to Buy New Car*		*Did Not Expect to Buy*	
	Bought New	*Did Not Buy Car*	*Bought New*	*Did Not Buy Car*
Better off than in 1947	40	51	26	26
About same	54	26	52	37
Worse off than in 1947	6	20	15	31
Not ascertained		3	8	6
Total	100	100	100	100

Source: Survey of Consumer Finances.

TABLE 46

Year Model of Car Owned in 1947 for Various Expectancy and Purchase Groups
(*per cent*)

Year Model	*Expected to Buy New Car*		*Did Not Expect to Buy*	
	Bought New	*Did Not Buy Car*	*Bought New*	*Did Not Buy Car*
Postwar	36	40	42	6
Prewar	35	8	41	31
No car	25	46	15	61
Model not ascertained	4	6	2	2
Total	100	100	100	100

Source: Survey of Consumer Finances.

car. In addition those who were "well off" and/or those whose financial condition improved bought cars when they had not expected to do so. However, no single factor seems to be overwhelmingly significant.

d. Analysis of patterns of financial characteristics. No one factor alone (i.e. income change, level of liquid assets, etc.) appears to explain fully the failure to buy of persons expecting to buy a new car or the unexpected purchase of a new car by persons stating no expectancy. However, the possibility remains that a combination of financial characteristics might serve as a complete explanation. For instance, while a high 1947 income level alone may not insure that a man who expects to buy a new car will do so, a high level of income in 1947 combined with the same or higher level in 1948 may make it possible to predict his purchase behavior.

The characteristics selected might be regarded as factors facilitating the purchase of a car if the need or desire for a car exists. The idea behind the pattern analysis was not that all the listed factors must be present in each individual, but rather that a combination of some should be present. Financial improvement or stability may result from various combinations of these factors. Moreover, the presence of some factors may tend to compensate for the absence of others. For instance, if a person's income went up but his assets did not, he might still be regarded as being in a favorable situation for the purchase of a car. The factors used in the pattern analysis were: (1) Had income of $3,000 or more in 1947. (2) Felt his financial situation in 1948 was the same as or better than in 1947. (3) Received expected income or more income than expected in 1948. (4) Level of income stayed the same or increased from 1947 to 1948. (5) Had liquid assets of $1,000 or more in 1947. (6) Level of liquid assets stayed the same or increased from 1947 to 1948.

As table 47 shows, in 84 per cent of the cases persons who carried out their expectations to buy a new car were found to have 1947 incomes of $3,000 or more and to feel that financially they were the same or better off (factors 1 and 2). Along with these two conditions, either they received the same or more income in 1948 (factor 4) and the amount which they received was the amount which they expected or was more than expected (factor 3), or they had $1,000 or more in liquid assets in 1947 (factor 5) and had liquid asset stability or increase in 1948 (factor 6). The 6 per cent who felt that they were worse off financially (factor 2 absent) reported meeting the other conditional factors.

TABLE 47

Pattern of Certain Chosen Characteristics in Persons Fulfilling or Not Fulfilling Expectancies of New Car Purchase
(*per cent*)

	Expected to Buy New Car			
Pattern[a]	*Bought*		*Did Not Buy*	
1, 2, 3, 4, 5, 6	21	90	20	28
1, 2, 3, 4	46			
1, 2, 5, 6	17		8	
1, 3, 4, 5, 6	6			
Other than above	4		69	
Not ascertainable	6		3	
Total	100		100	

[a] A number means that the specified factor was present. The absence of a number indicates absence of the factor; e.g. if the number 6 is absent, the level of liquid assets *decreased* in 1947-1948.

Source: Survey of Consumer Finances.

Only 28 per cent of the persons who changed their minds about buying had financial characteristics similar to the characteristics of those who did buy. This group totals ten cases. One bought in January 1949, the orders of three did not come in, and two did not buy because of illness and doctor's orders.

Further analysis of the financial characteristics of persons who did not realize their expectations to buy (see table 48) revealed that the majority of them had met financial reversals or were in poor financial condition, situations not found among any of those who expected to buy and bought a new car.

TABLE 48

Predominant Patterns of Financial Characteristics for Persons Not Fulfilling New Car Purchase Expectancies
(*per cent*)

Received less income than expected, had income decrease, and had either liquid assets under $1,000 or liquid asset decrease	23
Income decrease and liquid asset decrease	14
Less income than expected, liquid assets under $1,000, and liquid asset decrease	6
Income under $3,000 (and prewar model car or no car)	23
Failed to buy for other than financial reasons	17
Pattern not ascertainable	6
Did not fit above patterns	11
Total	100

Source: Survey of Consumer Finances.

An attempt was next made to find the financial patterns among those who did not expect to buy and bought a new car. The following financial characteristics were selected as conditions under which a person who did not expect to buy a car might change his mind. It will be noted that they present a somewhat rosier financial picture than do those used in realization of purchase expectancy. (1) Income of $3,000 or more in 1947. (2) Respondent feels he is better off financially in 1948. (3) Received more income than expected. (4) Received income increase from 1947 to 1948. (5) Had liquid assets of $1,000 or more in 1947. (6) Had liquid asset increase from 1947 to 1948. (7) Owned postwar model car.

In order to determine whether these factors had predictive value, the frequency of their occurrence among those who did not expect to buy and did not was also tabulated. Table 49 indicates as well the data for people who expected to buy and did so.

It is not surprising that there are no larger financial differences between those who bought "unexpectedly" and those who did not buy. In the first place, reasons for not expecting to purchase a car undoubtedly vary from respondent to respondent. Some may not expect to buy because they do not think they will be able to afford a new car. Others may not feel the need of a new car or may even feel extremely attached to their old one. An unexpected increase in income would not have the same effect on their purchase behavior.

A second factor, related to the first, is that equal financial improvements on the part of those who felt they could not afford to buy a car would not necessarily lead to equal facilitation of purchase. Under such circumstances a man with no responsibilities would be more apt to change his mind and buy a car than a man with many demands on him. It is also impossible for a respondent to predict accidents or other needs for car repairs, and in the event they occur his purchase expectations may change without any change in his income or assets.

In a further effort to determine reasons for unexpected new car purchases the interviews of the respondents in question were reinvestigated, with the following results. It was found that for 59 per cent of such respondents there were obvious financial conditions which facilitated the unexpected new car purchase, such as:

1947 or 1948 income of $10,000 or more	30 per cent
Received more than new car price on trade-in	7
Had saved the money for a car	4

Income doubled unexpectedly	7
Unmarried, no dependents, income over $3,000 and liquid assets over $1,000	7
Liquid assets over $10,000 in 1947 or 1948	4

TABLE 49

Predominant Patterns of Financial Characteristics for Persons Not Expecting to Buy and Then Purchasing a Car Compared with the Distribution of Identical Characteristics of Groups Fulfilling Expectancies
(*per cent*)

Pattern	*Did Not Expect to Buy a Car, Bought New*		*Did Not Expect to Buy a Car, Did Not*		*Expected to Buy, Bought*	
1, 2, 4, 5, 6, 7	11		1			
1, 3, 4, 5, 7	4		1		4	
1, 2, 5, 6, 7	4		[a]		4	
1, 3, 5, 6, 7	4					
1, 3, 4, 6, 7	4		[a]		4	
1, 3, 4, 6	11	57	5	23		27
1, 3, 4	2		5		11	
1, 3, 5	4		1			
1, 5, 7	4		1			
1, 4, 5	4		2			
1, 5	5		7		4	
Total pattern not ascertained	36[b]		7		6	
None of above patterns	7		70		67	
Total	100		100		100	

[a] Less than 0.5 per cent.

[b] This high figure is due largely to uncertainty in respondents' answers on 3: "income expected."

Source: Survey of Consumer Finances.

It should be pointed out, however, that such conditions also existed among those who did not buy.

Although these various factors and measures aid in understanding the failure of one's predictions, they are not precise enough to enable one materially to improve forecasting. Also some of the factors are developments subsequent to the time of stated expectancy and need to be predicted themselves. They serve as guides to the type of data that might be collected and reflect the corelevance of background variables of an economic nature.

2. Purchases of other durable goods

The Surveys of Consumer Finances also contain questions about buying plans for refrigerators, furniture, radios, and, in the later

study, television sets. These being smaller expense items, one would expect that overall predictive efficiency on these would be worse than that on autos—prediction, that is, from stated expectancy, not trend data.

a. First reinterview study. The stated expectancies on these items seem to be fulfilled about as frequently as car purchase expectancies. However, more than twice as many persons bought radios as expected to do so and 46 per cent more bought furniture (see table 50).

TABLE 50

Expected and Actual Purchases of Durable Goods, First Reinterview Study
(*per cent*)

	Radio	*Refrigerator*	*Furniture*	*All Durables Excluding Car*
Expected to buy	5.4	6.4	9.4	21.2
Actually bought	10.3	7.8	13.1	31.2

Source: Survey of Consumer Finances.

Along with the fact that many more people bought radios and furniture than expected to do so, it should be noted that at least half of those who expected to buy radios or furniture did not, and 44 per cent of those who expected to buy refrigerators did not do so (see table 51). In the case of all three durables over 50 per cent

TABLE 51

Actual Purchase of Radio, Refrigerator, or Furniture by Persons Expecting Definitely or Probably to Buy, First Reinterview Study
(*per cent*)

	Expected to Buy:		
	Radio	*Refrigerator*	*Furniture*
Bought	47	56	50
Did not buy	53	44	50
Total	100	100	100

Source: Survey of Consumer Finances.

of the purchases were made by persons who did not expect to buy (see table 52). This is somewhat the same as in car purchasing (see tables 25 and 26).

TABLE 52

Degree of Expectancy of Purchase of Persons Who Bought a Radio, Refrigerator, or Furniture, First Reinterview Study
(*per cent*)

Expectancy	*Bought in 1948*		
	Radio	*Refrigerator*	*Furniture*
Definitely expected to buy	20	29	29
Probably will buy	5	17	7
Undecided	2	1	2
Did not expect to buy	73	53	62
Total	100	100	100

Source: Survey of Consumer Finances.

When all durable goods are combined (excluding cars) the actual purchases exceed the expected purchases by 46 per cent (see table 50). If persons who were undecided had been included among those expecting to buy, the discrepancy would have been smaller (see table 53).

TABLE 53

Degree of Certainty of Purchase of Persons Who Actually Purchased Durable Goods, First Reinterview Study
(*per cent*)

Expectancy	*Radio*	*Refrigerator*	*Furniture*
Definitely expected to buy	3.4	4.6	7.0
Did buy	2.1	2.3	4.0
Did not buy	1.3	2.3	3.0
Probably will buy	2.0	1.8	2.4
Did buy	0.6	1.4	0.9
Did not buy	1.4	0.4	1.5
Undecided about buying	0.9	0.9	1.2
Did buy	0.2	0.1	0.2
Did not buy	0.7	0.8	1.0
Did not expect to buy	93.4	92.4	89.0
Did buy	7.7	4.2	8.4
Did not buy	85.7	88.2	80.6
Not ascertainable	0.3	0.3	0.4
Total	100.0	100.0	100.0

Source: Survey of Consumer Finances.

b. Second reinterview study. Results obtained in the second reinterview study are given in tables 54 to 57.

TABLE 54

Expected and Actual Purchases of Durable Goods, Second Reinterview Study
(*per cent*)

Expectancy	*Radio*	*Refrigerator*	*Furniture*	*Television*	*All durables excluding car*
Expected to buy	4.2	6.0	10.5	3.8	24.5
Actually bought	4.5	8.3	11.3	3.7	27.8

Source: Survey of Consumer Finances.

TABLE 55

Degree of Certainty of Purchase of Persons Who Actually Purchased Durable Goods, Second Reinterview Study
(*per cent*)

Expectancy	*Radio*	*Refrigerator*	*Furniture*	*Television*
Definitely expected to buy	2.3	4.8	7.4	2.0
Bought	0.8	2.3	1.9	0.8
Did not buy	1.5	2.5	5.5	1.2
Probably will buy	1.9	1.4	2.9	1.4
Bought	0.5	0.3	1.0	0.4
Did not buy	1.4	1.1	1.9	1.0
Undecided about buying		2.4	1.7	0.5
Bought		0.6	1.3	
Did not buy	[a]	1.8	0.4	0.5
Did not expect to buy	94.4	91.0	87.1	95.0
Bought	3.2	5.5	7.1	2.5
Did not buy	91.2	85.5	80.0	92.5
Various expectancies, will buy before 1950	1.3	0.4	0.9	1.1
Total	100.0	100.0	100.0	100.0

[a] Less than 0.2 per cent.
Source: Survey of Consumer Finances.

TABLE 56

Degree of Expectancy of Purchase of Persons Buying a Durable Goods Item, Second Reinterview Study
(*per cent*)

Expectancy	*Radio*	*Refrigerator*	*Furniture*	*Television*
Definitely expected to buy	17	24	17	22
Probably will buy	11	3	8	10
Undecided		7	12	
Did not expect to buy	72	66	63	68
Total	100	100	100	100

Source: Survey of Consumer Finances.

TABLE 57

Actual Purchase of Durable Goods by Persons Expecting to Buy, Second Reinterview Study
(*per cent*)

	Expected to Buy:			
	Radio	*Refrigerator*	*Furniture*	*Television*
Bought	30	38	27	32
Did not buy	70	62	73	68
Total	100	100	100	100

Source: Survey of Consumer Finances.

Table 58 offers data showing a conflict between seasonality of purchase and time within which the anticipation is most likely to be fulfilled.

TABLE 58

Expectancy to Purchase Selected Durable Goods Related to Time of Purchase, Second Reinterview Study
(*per cent*)

	Bought Item in:		
Expectancy	*1st Quarter*	*2nd Quarter*	*3rd Quarter*
Radio			
Expected to buy	29	28	25
Did not expect to buy	71	72	75
Total	100	100	100
Refrigerator			
Expected to buy	32	43	15
Did not expect to buy	68	57	85
Total	100	100	100
Furniture			
Expected to buy	52	31	27
Did not expect to buy	48	69	73
Total	100	100	100
Television set			
Expected to buy	25	75	21
Did not expect to buy	75	25	79
Total	100	100	100

Source: Survey of Consumer Finances.

Tables 59 and 60 show that a large group of purchasers make up their minds to buy durable goods in a very short period of time. This finding may account for a large share of the discrepancy in the fulfillment rates.

TABLE 59

Length of Time of Consideration of Purchase of Selected Durable Goods, Second Reinterview Study
(*per cent*)

Length of Time of Consideration of Purchase	*Item Bought*			
	Refrigerator	*Furniture*	*Radio*	*Television Set*
Less than 1 month	41	20	51	31
1 to 2 months	5	11		14
3 to 5 months	6	12	8	8
6 to 8 months	8	5	13	17
9 to 11 months	3	3		7
12 months or more	24	28	6	10
Short time	5	5	8	3
Long time	8	10	11	10
Don't know				
Not ascertained		9	3	
Total[a]	100	100	100	100

[a] All persons who purchased regardless of expectancy to purchase.
Source: Survey of Consumer Finances.

It should be noted that approximately one-third of the persons who expected to buy refrigerators and furniture in 1948, and did not, merely postponed their purchases and expected to buy these items in 1949. However, only 11 per cent of those who failed to purchase a radio expected to buy it in 1949 (see table 61).

TABLE 61

Comparison of Expected Durable Goods Purchases Not Realized in 1948 with Expected Purchases in 1949, First Reinterview Study
(*per cent*)

	Expected to Buy in 1948 and Did Not Buy:		
	Radio	*Refrigerator*	*Furniture*
Expected to buy in 1949	11	34	36
Did not expect to buy	85	58	56
Not ascertainable	4	8	8
Total	100	100	100

Source: Survey of Consumer Finances.

In the second reinterview study, expectancies were checked only for the remainder of 1949. There were too few of those expecting to purchase at the beginning of the year, and still expecting to purchase in 1949, to merit tabular presentation.

TABLE 60

Length of Time of Consideration Related to Degree of Expectancy, Second Reinterview Study
(*per cent*)

Length of Time of Consideration of Purchase	*Refrigerator*		*Furniture*		*Radio*		*Television set*	
	Expected to Buy[a]	*Did Not Expect to Buy*	*Expected to Buy*[a]	*Did Not Expect to Buy*	*Expected to Buy*[a]	*Did Not Expect to Buy*	*Expected to Buy*[a]	*Did Not Expect to Buy*
Less than 1 month	17	51	21	20	30	59		45
1 to 2 months		7	13	11			26	8
3 to 5 months	11	5	21	11	10	8		12
6 to 8 months	11	7	2	7	20	10	42	5
9 to 11 months	11		2	4				10
12 months or more	50	14	28	29	20		21	5
Short time		6		4	10	8		5
Long time		10	4	7		15	11	10
Don't know								
Not ascertained			9	7	10			
Total	100	100	100	100	100	100	100	100

[a] "Expected to buy" includes "definitely will buy" and "probably will buy" and bought in 1947 prior to the Survey.
Source: Survey of Consumer Finances.

Very little can be discovered as to the reasons for failure on the part of the respondents to buy the durable goods which they stated they intended to buy. A comparison was made of financial characteristics of persons who definitely expected to buy and did, and who definitely expected to buy and did not; but for the most part the differences between the two groups were too small, in the light of the small number of cases, to be considered significant.

Persons who did not expect to buy and did were compared with those who did not expect to buy and did not, with not much more success. Again, the differences between the two groups were, for the most part, not significant.

D. Conclusions

1. General conclusions

1. Data on intentions to buy should be used with caution. Trends and direction of change may be more significant than absolute percentage levels. The necessity of including other information at the time the expectancy data are evaluated is borne out by the analysis in the section on repeated interviews and by the data from the reinterview studies.

2. The analytical scheme outlined in the first section of this paper cannot be validated by the available reinterview analysis. However, these data do tend to support strongly the suggested approach to the analysis of prospective demand through using data on ability to buy and willingness to buy in conjunction with the intentions data.

3. The prediction, on an individual basis, of something as complexly determined as the purchase of a car over a period as long as a year is a very difficult task. However, pessimism about individual predictions should not imply pessimism about aggregate prediction using a multivariate approach. This analysis has suggested points at which the methodology might be improved.

4. A major predictive problem concerns purchasers without expectancies at the time of questioning. The relevance of economic conditions to their behavior casts doubts on the assumption of a constant ratio of such persons to expecters.

5. The reinterview analysis indicates that financial ability and financial change influence fulfillment and nonfulfillment of expectancy. It also demonstrates the difficulty of locating those unabstracted items that explain many facets of fulfillment and nonfulfillment of expectancies. However, even a simple combination of various

factors without statistical weighting or mathematical formalization indicates certain significant differences in the purchase and non-purchase groups of expecters. *In toto*, these combinations of factors offer an exploratory base for further development of the analytical technique outlined in the initial section of this report.

2. Recommendations for improving techniques

1. Ideally, the combination of variables into a single predictive measure should be by an objective method of mathematical manipulation, rather than by a method that relies heavily on the subjective weighting of factors by the analyst or interpreter. Future efforts should be focused in that direction both in analyzing the consumer sector of the economy and in attempting to combine data from that area with data from other sectors. An index of ability to buy combined with expectancies would be a small step in this projected direction.

2. The intentions data are weak for radios and used cars in particular. The difficulty appears to be with low-priced items. This suggests the possibility of limiting intentions data to high-priced items in these categories.

3. The time interval of one year, covered by the intentions data, appears to be too long. Exactly what the interval should be is not clear, but it seems that, for example, a time period of six months might be more appropriate for the prediction of new car purchases. The results raise a question as to whether the interval should not be varied for different commodities. The length of time to be covered should also be studied in the light of the seasonality of purchase of many of the items, e.g. refrigerators.

4. The present method of measuring intentions to buy should be improved. Both higher reliability and higher validity should be attainable from the adaptation of more refined techniques involving information about the psychological and economic setting of expectancies, past behavior, locus of decision-making, etc.

COMMENT

Elmer C. Bratt, *Lehigh University*

For the purpose of a limited analysis of consumer expenditures the problems of forecasting are not carried beyond the personal sector into the interrelations with other sectors of the economy.

Several different approaches are now employed to anticipate consumer expenditures:

1. Consumer expenditures, classified as durable, nondurable, and services (and further broken down when possible), are projected by naïve model methods, specifically tailored to the requirements at each point of time, as a section in the pattern-of-relationship method of forecasting (what Bassie calls "statistical analysis" in his paper) applied to gross national product. This is currently an important working hypothesis.

2. Forecasts are developed from the level of disposable income and knowledge of the consumption function. Such overall methods have passed rapidly out of fashion in the last three years, partly as a result of improvement in our analytical understanding and partly from the irregularity in the movement that has been occurring in consumer expenditures in relation to disposable income.

3. Forecasts on the basis of study of past consumer behavior are used. Such studies are well illustrated by the Survey analysis of ability and willingness to buy. I am not going to offer any criticism of the work along this line that has been done at the Survey Research Center, but I do enter a plea for greater coverage of consumer behavior.

Consumer stocks represent an extremely important area that has been ignored. One method of analyzing the behavior of consumer stocks of durables is what is known as saturation analysis. This implies a concept of a relatively fixed total market for an individual product, a life curve to develop replacement demand (modified by assumptions as to obsolescence), and the filling of new demand (partly related to the flow of consumer income). Techniques need to be developed to reflect the changes taking place in consumer stocks of semidurables, notably clothing. I recommend that the Center make experiments to see what can be done in this area. I think on the whole the Center could profitably give more attention to the study of individual commodities in analyzing consumer behavior.

One major aim in the study of consumer behavior should be the separation of disposable income handled automatically from that part spent or saved only after careful consideration. Contractual saving and many food and service items fall in the former category, and probably most durables and nonrecurrent expenditures such as vacations fall in the second. But the Center should give us better information on these points. Not only do we need a static classification, but we need to learn about its dynamic variation. How do

changes in income influence the automatic (what Katona calls routine) items?

4. Surveys to determine consumer plans (or better, as Lansing notes, expected purchases) constitute another approach. Unlike other methods of forecasting consumer expenditure, this one depends on what the consumer says he expects to do. The first problem here, I believe, is to define the area to be covered. The appropriate area seems to be the nonautomatic (nonroutine) or discretionary type of expenditure. This can be more clearly identified if automatic expenditures are more carefully separated in studies of consumer behavior. Within the discretionary area it would be useful to try a classification of the degree of urgency of demand. How closely does the urgency of demand tally with the reliability of expected purchases for various commodities?

The specific purpose of the survey of expected purchases is highly important. It is stated that emphasis is on diagnostic analysis. I understand this to mean that the surveys of consumer plans are intended to interpret typical behavior, rather than directly to assist projection. Again, it is held that the interpretation must rest primarily on the time trend. The most important thing to be found from the time trend is the cyclical shift in optimistic or pessimistic expectations. This position is buttressed by the fact that admittedly the expectation of any particular individual is quite unreliable, while the average trend appears indicative. What is happening would appear to be a general social reaction to changes in income or psychological attitude. The most fruitful questions therefore would appear to relate to *ex ante* income and liquid assets if we follow the theory that these factors come closest to regulating shifting business cycle psychology.

The aim of the authors is not to use the expected-purchases study to interpret consumer behavior in relation to the individual commodities considered, for they say that "the inference may be made that if demand for houses, cars, and other durables will increase in a particular year, total demand by consumers for goods and services will increase for a given level of income." This would appear to be on the wrong track. If questions are to be asked about particular items of durable demand, is it not more to the point to interpret the estimated changes as additional to the automatic (or routine)? If all consumer expenditures are to behave similarly, perhaps we can return to the general consumption function analysis.

On the other hand, it is plausible that, where cracks appear on

the surface of a continuation of a trend of consumer performance, they are related to the behavior of *particular* types of expenditure or saving. What is the best way to anticipate the demand for particular commodities? The role in this respect that surveys of expected purchases can play is not clarified by appeal to the complexity of economic motivation, for however complex it may be, consumers do decide to purchase. If consumers plan purchases for the commodities in question far enough in advance, the Survey can help us determine what influence consumer purchase of individual commodities has on economic change. Certainly the plans must be made at least three months in advance to be of any help. We very much need to know what the length of this planning period is for various commodities.

In a survey of expected purchases, the difference between micro- and macro- is important only in a psychological sense. The macro-expenditures for individual commodities are merely the sum of the micro- (but this is not true of savings). However, from the point of view of social psychology, the intereffects of the plans of individuals are extremely important. The fruition of plans to purchase is probably more a social than an individual process. Until we understand better the social process by which consumer plans are made, perhaps we should limit our studies on expected purchases (or consumer plans) to: (1) the length of the planning period for various individual commodities which might be studied; (2) expectations as reflections of consumers' optimism or pessimism in relation to business cycle changes—largely feelings about income; (3) possibly experiments to estimate consumer stocks; and (4) general methodological experiments.

JAMES TOBIN, *Yale University*

The annual Surveys of Consumer Finances place economists in tremendous debt to the Survey Research Center and to the Federal Reserve Board. Not only do these Surveys add substantially to economic information, but their design and analysis have already contributed greatly to the methodology of empirical research in economics, and we may look forward to even greater advances in the future.

Moreover, the record of predictions made from the Surveys, set forth both in this paper and in Schweiger's paper, is impressive. Lansing and Withey have, therefore, performed a great service in

explaining to us how the Center interprets the data of the Surveys for the purpose of making predictions. But they do not claim to have given us the complete story, and we may hope for future papers that will tell us more about the analytical scheme. What they have given us is mainly a list of the factors they consider in making a prediction. The weighting of these factors in arriving at a final diagnosis appears to be a matter of judgment; although the judgment appears to be good, it would be helpful to know more about the weighting process.

The role left to good judgment may be illustrated by the authors' treatment of the data on the "wisest place to put money" (table 14). These show what strikes me as a substantial rise since 1949 in the proportion of spending units preferring assets of variable money value to those of fixed money value; it is especially pronounced in the income groups who have the resources to make their opinions count. The judgment of the authors was that this rise was less important than the fact that the proportion favoring assets of fixed money value was still, in absolute terms, high. Consequently, instead of interpreting this evidence as inflationary, they construed it as anti-inflationary. This was good judgment, but the fact that it was judgment is accented by the stress that the authors elsewhere place on looking at changes from year to year rather than absolute levels.

The main methodological issue raised by the paper seems to me to be the role, in short-term forecasting of consumer behavior, of analyses of two kinds of information. One kind is information of an *ex post*, realized nature concerning past consumer behavior. Its analysis seeks to discover inductively relationships of predictive value between consumers' actions and certain "objective" factors in their situation. The other kind of information is of an *ex ante*, unrealized nature, and concerns consumers' expectations, attitudes, and intentions. Its analysis seeks to discover, no less inductively, relationships of predictive value between such "subjective" data and subsequent consumer actions. The issue is one of emphasis—no one believes that either type of information should be completely disregarded—and it has practical consequences in the distribution of effort in the design and analysis of consumer surveys.

Consumer surveys are an important source of both kinds of information. Obviously they are practically the sole source of *ex ante* data. Their importance as a source of *ex post* information we have learned from the inadequacies of quantitative relationships based on aggregate time-series alone. In an approach based on "objective"

information, surveys are necessary not only to provide raw material for the building of relationships to be used in prediction, but also, as the authors point out, to permit the use of those relationships in forecasting by supplying current information on the joint distribution of consumer units according to the relevant variables. The methodological issue, therefore, is not *whether* consumer surveys are to be used in short-term forecasting, but *how* they are to be used.

The Survey Research Center evidently believes strongly in the inadequacy of *ex post* information and in the fruitfulness of gathering and analyzing *ex ante* data. George Katona, in his recent interesting and stimulating book, contrasts "mechanistic" attempts to explain consumption behavior, by reference to "income, assets, age, and similar 'objective' factors," unfavorably with explanations that attribute significant influence to "subjective" factors. He asserts that consumers make "genuine decisions" that can "influence economic developments."[1] In the present paper there is an early declaration of faith that "consumers have a real freedom of choice as to what they do with their income and assets."

The determinism–free will controversy is unlikely to be resolved in the realm of consumer economics. In any case the issue may be more philosophical than operational. No "mechanist" expects to be able to muster enough "objective" factors to explain completely the actions of individual consumers, or even those of consumers in the aggregate. It matters little whether the random error term in the determinist's equation is taken to stand for omitted variables or to allow for consumers' genuine spontaneity. Moreover, the objections of the Center to "objective" empirical analysis of consumer demand seem to be directed mainly against attempts to estimate unique relationships between consumer expenditure and income, or between expenditure and two variables, income and asset holdings. A more inclusive conception of "objective" factors, although in principle equally "mechanistic," would presumably encounter less objection.

One might hope that in short-run forecasting, in contrast to long-run projection, systematic relationships derived from *ex post* information could be dispensed with, altogether or in large part, by substituting more direct prediction from the stated intentions of consumers. As it has been put by others in these meetings, consumers themselves could serve as our calculating machines, weighing the many factors that affect their spending decisions and coming

[1] George Katona, *Psychological Analysis of Economic Behavior* (McGraw-Hill, 1951), pp. 6, 69.

up with the answer. This method might be both more reliable and easier than the multiple correlations of an outside observer. I believe this hope to be illusory; consumers are not likely to be good calculating machines.

Consumer purchases may be what we would like to predict. But they will, in general, be influenced by variables exogenous to the consumer sector. Some relevant variables will be capable of change in the interval between interviews and the end of the period for which predictions are desired; and to some or all of these, consumers will react with no lag at all or with a lag shorter than that interval. Consequently, the best that can be done is to predict relationships between consumer purchases and the relevant current exogenous variables. It is the need to predict relationships rather than variables that, in my view, makes it no less necessary in short-term forecasting than in long-term projection to rely on inductive relationships between the realized actions of consumers and their "objective" determinants. If a consumer says at the beginning of the year that he plans to buy, or not to buy, a car, he gives no hint of what he will do should his income rise, car prices change, or his old car break down. (Note the evidence in table 43 in the Lansing and Withey paper on "unexpected" car purchases by persons whose incomes turned out to be higher than they had anticipated.) To gauge the effects of such changes we must—since answers to hypothetical questions are the most unreliable kind of anticipatory information—look elsewhere, and that means to past experience as recorded in *ex post* information. What the "subjective" data may tell us, however, is whether to expect actual car purchases to deviate above or below their relationship to other "objective" variables as derived from past experience. Such data are more likely to tell us that than to tell us whether car purchases will be bigger or smaller than last year.

A second factor limiting the usefulness of statements of the intentions of individual consumers is the existence of types of expenditure that are, in the aggregate, bound to occur every year, but are inherently unforeseeable by consumer units interviewed at the beginning of the year. Such expenditures cannot be predicted except by relationships based on *ex post* information, including aggregate time-series. To give a ridiculously extreme illustration, anyone interested in predicting funeral expenditures for the coming year would be better advised to consult vital statistics and data on past expenditures than to ask consumer units their plans. Of more significance

are the contributions to the demand for housing and household durables of spending units that will be newly formed during the year. These cannot be ascertained from interviews in January. Another example is the replacement demand for durable goods. No individual owner of a ten-year-old car knows that his ancient vehicle will break down during its eleventh year. But it is certain that a good proportion of old cars will break down and place their owners, regardless of the owners' expectations at the beginning of the year, in the car market.

In the second part of their paper the authors expended considerable ingenuity in explaining why car-buying plans stated at the beginning of the year were or were not fulfilled. It occurred to this reader that similar effort and ingenuity devoted to identifying the differentiating characteristics, not of plan-fulfillers but of car-buyers, might have led them by a more direct route to the ultimate goal of being able to predict automobile demand. The data collected in the Surveys over a number of years would, I imagine, permit an analysis of car purchases in terms of such factors as income (current and past), assets, age of head of family, size of family, car ownership or nonownership, age of present car, location, and occupation. It would be of great interest to know whether *ex ante* information on car-buying plans could add to the predictive value of such an analysis.[2]

The shift in emphasis for which I am arguing can be exemplified by considering two findings of the 1951 Survey. One was that only 12 per cent of all spending units planned to purchase cars in 1951; this was considerably lower than the corresponding percentages for 1950 (17 per cent) and all other postwar years (table 18). The second finding concerned the aggregate size, and the distribution by age of car and by income of owning family, of the stock of automobiles at the beginning of 1951. This showed that the proportion of families owning cars, and the proportion owning new or relatively young cars, exceeded for the first time the prewar proportions. This was true both in the aggregate and throughout the income distribution.[3] Either of these findings might lead, in conjunction with other information, to the conclusion that, barring changes in exogenous variables, the market for new cars would be somewhat weaker

[2] A reader interested in this question would find tables 39 to 46 more informative if they were turned around: if table 46, for example, gave the percentages of owners of various models of cars and of nonowners who were in each of the expectancy-action categories.

[3] "1951 Survey of Consumer Finances, Part II," *Federal Reserve Bulletin*, July 1951, table 7, p. 766, and table 8, p. 767.

in 1951 than in 1950. The authors arrived at this conclusion with the help of the first finding, and there is no evidence that they paid attention to the second. Indeed, they are somewhat disdainful of the use of data on stocks, which they associate with the assumption that the market can be satiated. It is not necessary to deny their assertion that consumer wants are capable of indefinite expansion to believe that old durable goods are competitive with new durable goods and that the size, age composition, and distribution of the existing stock are relevant to the net new demand.[4]

Another reason for questioning extensive reliance on *ex ante* data is provided by the discrepancies between individual plans and realizations shown in section C of the paper. The authors admit that the usefulness of plans data depends on cancellation, in the aggregate, of opposite errors concerning individuals. It depends also, they say, on consistency over time in the relationship of actual purchases to expectancies—as they put it, "constancy from year to year in the elements that lead some consumers to understate and others to overstate their intentions." Since these elements include unanticipated changes in relevant exogenous factors, there is little basis for expecting such constancy. I see no reason, either a priori or empirical, for believing that there will be more constancy in propensities to understate and overstate than in the effects of such "objective" factors as the age of cars on the road.

Surveys of consumer buying plans are not going to spare us the necessity for exhaustive multivariate analysis of consumer behavior. Consumer demand is not going to be explained adequately or predicted accurately by simple relationships, whether these relationships involve *ex post* or *ex ante* information. Statistical data—micro-economic as well as macro-economic, cross-section as well as time-series, *ex ante* as well as *ex post*—can easily be misinterpreted in terms of overly simple hypotheses. The authors are right to be scornful of efforts to relate differences in the behavior of spending units, either intertemporal or interfamily, exclusively to differences in

[4] This matter, like the genuine free will of consumers, is evidently one on which the Center feels strongly. Katona, questioning the value of stock data, points out that any salesman knows that "the best prospects for new cars are normally those who bought cars one, two, or three years ago, and the worst prospects are those who have no cars at all (*op.cit.*, p. 106). But the close relationship between the new and used car markets cannot be ignored. The new car demand of the owners of young cars is dependent on trade-in values; and these depend on the demand for used cars by those who own no cars at all or cars ready for the junk yard. Table 36 in the present paper shows the importance in the market of those who did not trade in or sell a car.

financial position. In survey data the effects of income and liquid assets on consumer demand are obscured by and entangled with (a) dynamic effects not revealed by a single cross-section, and (b) effects of nonfinancial differences among families—age, occupation, size, composition, location, etc. In the Surveys of Consumer Finances, for example, the value of the numerous published tabulations relating some kind of behavior to income class is vitiated by high correlation between size of family, or spending unit, and income. Even year to year changes in the behavior of units with the same income and asset holdings—on which the authors rely in assessing "ability to buy"—are difficult to interpret if there is a possibility that the samples differ in respect to other relevant factors, such as family size.

We shall not make substantial progress in the prediction of consumer demand until the many difficulties of this kind are overcome and relationships are derived that take account of the many variables affecting household behavior. In this task, as stated at the outset, consumer surveys must play a large part, and reinterviews of identical samples can be especially useful. In applying these complex relationships to the problems of short-run prediction the *ex ante* information of consumer surveys should be very helpful.

REPLY BY MR. LANSING

Tobin and Bratt raise a number of interesting and difficult problems. There are several points at which further discussion than is contained in the paper seems in order. Both Tobin and Bratt suggest that further attention be paid to data on the stocks of durables. This suggestion has much to commend it. We have never felt that information about stocks should be ignored—stocks are mentioned, for example, in the analytical outline under "willingness to buy." Further investigations in this area should be part of our future work.

The type of analysis of which we are skeptical is that based on what might be called a naïve satiation hypothesis. This hypothesis in its simplest form runs as follows: If at a given point of time, such as late 1940, x per cent of the spending units in the population owned good A, it is unlikely that in 1952 the proportion owning good A will rise above x per cent. If one applies our analytical framework to this problem, one first must ask, Have there been any changes in ability to buy? and What has happened to real income, to holdings of liquid assets, and to debt? The simple argument outlined above assumes: (1) real incomes have not changed, or, if they

have, the income elasticity of demand for good A is so low that it may be ignored; (2) liquid asset holdings of consumers have not changed, or, if they have, these changes have no effect on consumers' purchases of durables once a certain level of stocks has been reached; (3) the credit position of consumers has not changed, or, if it has, the changes may be ignored.

These are strong assumptions. Even if they are correct, one must still ask, Have there been any changes in "willingness to buy"? "Willingness to buy" includes what we refer to as "wants, needs, and aspirations," which coincide more or less with what economists call "tastes." The assumption that tastes have not changed becomes especially dangerous when periods of a decade or more are involved. Consumers' perceptions of their own ability to buy and their appraisal of the economic situation also are subject to change. In our view these factors can be of great importance, especially in the short run, which is what is under discussion. Once again the naïve satiation hypothesis assumes either that these factors have not changed, or that they may be neglected.

Any comparison of stocks of durables over an extended period is subject to the limitation that the nature of the good will change. This point arises in analysis based on age distributions of durable goods at two points of time. Differences in age may have a different meaning. Take, for example, data on the age distribution of automobiles in 1940 and 1950. The cars on the road in 1940 included a substantial number that had been built in the late twenties and early thirties. The rate of change in the life expectancy of automobiles continued to be rapid at least up to the time of universal adoption of the all-steel body and roof, about 1936. Thus a ten-year-old car in 1940, or even a seven-year-old car, was one with quite a different life expectancy from that of a car four or five years old. In 1950, however, a ten-year-old car was less drastically different from a five-year-old car. Thus a comparison of age distributions in 1940 and 1950 is not simple—an element of judgment may slip in.

It is a basic limitation of any approach through the analysis of stocks that a small percentage change in stocks can lead to a large change in output in any given year. For example, one may find that 45 per cent of the population own good A. Assume 50 million consumer units in the population. If one estimates the "saturation level" at 50 per cent ownership, the implication is a total demand for A equal to whatever may be necessary for replacement plus up to 5 per cent of 50 million, or 2.5 million, units. But if there is an error

of five percentage points in the estimate of the "saturation level," that is, if the "true" level is known only to be between 45 and 55 per cent, demand will be anywhere from replacement only up to replacement plus 5 million.

From a practical point of view the question must be raised of the accuracy and validity of whatever data may be available. The only data on stocks of durables in the Survey of Consumer Finances in 1951 were those referred to by Tobin.[1] The tables show the proportion of each rural and each urban income quintile owning a car, and the age distribution of cars owned. These data, as noted in the footnotes to those tables, are subject to important technical weaknesses in addition to the conceptual problems outlined above. They involve comparisons between surveys conducted by the Survey Research Center and surveys conducted by the Department of Labor. The surveys in question differ in definition of automobile ownership and family unit, in universe covered, and in sampling methods. The data as reported from the 1941 survey were not in the form shown in the table; they had to be adjusted by a process of freehand graphic interpolation. Finally, the sampling errors of the differences in the proportion of owners in table 7 (which are incremental to any errors from the sources just enumerated) amount to from 6 to 11 per cent. In view of these technical problems, in addition to the conceptual difficulties, it seemed appropriate to rely upon other data in appraising the immediate outlook in early 1951.

Another topic discussed by Tobin is whether one should rely on *ex post* or *ex ante* information. The difference, as he observes, is one of emphasis, but there is probably also a real difference of opinion. The argument seems difficult to settle on the basis of a priori reasoning. For example, there is no question that some types of expenditures like funerals are inherently unforeseeable by the consumer units interviewed and that the frequency of funerals should be predicted through the analysis of *ex post* information. An interesting question is, What proportion of consumers' expenditures are of this type? Even more interesting is this: Can the *variation* in consumers' expenditures from year to year be explained by the study of such expenditures?

It seems to us open to question whether the replacement demand for durable goods has quite the autonomous and unpredictable character Tobin ascribes to funerals. Consider the most important of the

[1] "Purchases of Durable Goods and Houses in 1950 and Buying Plans for 1951," *Federal Reserve Bulletin*, July 1951, tables 7 and 8.

durables, automobiles. In the first place, a car that is going to break down during a particular year is likely to have given some preliminary indication of the approaching catastrophe. In the second place, the actual course of events seems to be that cars do not collapse all at once, like the one-horse shay. More commonly, the owner of a dilapidated vehicle decides that the game is not worth the candle and trades his car to a used car dealer for a slightly more modern vehicle. The dealer then does the actual scrapping—or installs a rebuilt engine. The date when the owner makes a last trade-in may well be open to a certain amount of variation. He may elect to put in a little more money and a little more effort and get the car to cough along for a few more miles. Or he may decide a few weeks or months in advance that the old car is good for only another 1,000 miles, and then he may elect to drive only 10 miles a week for the next 100 weeks. But one point is quite clear: that the holder of the used car, in the last miles of its life, is the only individual whose demand for a replacement is stimulated by the possibility of complete mechanical collapse. The individual who bought this car *new* presumably traded it in after a few years' wear, when there was a good deal of life left in it. In all probability he was the individual (of all the owners of the car in its lifetime) who then bought another new car. Replacement demand for new automobiles is only indirectly connected with scrapping. The chain of events by which a new car is turned out and an old one scrapped involves conscious decisions on the part of several people. We feel it worth while to explore the possibility that the individuals know in advance something about their decisions and can tell us something about them.

Bratt argues convincingly that we need to study the length of the planning period for various individual commodities. We have made some attempts in this direction, but we have been handicapped by the limited number of cases we have had in our reinterview analysis of people who bought particular items during a given year. The data we do have suggest a good deal of dispersion in the length of the planning period; that is, some people seem to plan for one length of time and others for different periods without as much central tendency as one might hope.

Another interesting suggestion made by Bratt is that we should study more closely the distinction between automatic and nonautomatic consumer expenditures. This distinction plays an important role in the thinking of people at the Center, especially that of Katona, and it may well be that further empirical investigations would prove fruitful.