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## SUMMARY AND CONCLUSIONS

### *Introduction*

Surveys of consumer plans to buy major durable goods—household equipment and automobiles—and of related consumer expectations and attitudes are receiving new and active attention. The ultimate objective is development of tools for forecasting the volatile portion of consumer spending and on relating such forecasts to movements in the national economy. The potential value of such information to business is obvious. Economists concerned with upswings and downswings in business activity also are interested in fluctuations in the ratio of consumer purchases of durable goods to disposable income. It would therefore be valuable to show how plans to make such purchases, say within a half-year or year, are related to subsequent purchases. If this is to be done, it is first necessary to test and improve survey techniques, and to analyze the data obtained from them. Both objectives orient the research project on consumer purchases of the National Bureau of Economic Research.

The survey data we use are derived from unusually large samples of the membership of the Consumers Union of the United States, a product testing organization.<sup>1</sup> We concentrate on two questions. One concerns the interrelations between reported buying plans and other variables—expectations about personal financial prospects and general business conditions, household status in regard to past purchases, debt, assets held, and savings. The other is why households depart from their reported plans, especially what factors lead to unplanned purchases.

This monograph is a progress report on the National Bureau's study of the above problems. Our major findings can be conveniently grouped under three headings: (1) buying plans as a forecasting tool; (2) variables associated with differences in plans and purchases among individual households; and (3) methodological conclusions.

### *Buying Plans as a Forecasting Tool*

#### 1. Year-to-year changes in the CU (Consumers Union) sample's level of

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<sup>1</sup>Surveys were made annually by Consumers Union around the end of summer from 1946 to 1957. In October 1957 and April 1958, the National Bureau conducted two special surveys for intensive analysis; over 25,000 responses were obtained. See sections 1 and 3 for details.

aggregate buying plans for both automobiles and major appliances have foreshadowed changes in purchases by the United States population as a whole over the period 1949 to 1957. Specifically, about 90 per cent of the year-to-year variation in country-wide purchases of major durable goods is associated (statistically) with year-to-year changes in buying plans reported by CU subscribers.

2. After allowing for the effect of changes in disposable income on purchases, some 80 per cent of the residual year-to-year variation in aggregate purchases of durable goods is associated (statistically) with variations in the buying plans of CU members. In the aggregate, about 95 per cent of the total yearly variation in purchases over that period is explained (statistically) by the two variables—changes in disposable income and the buying plans of CU members. The results, (1) and (2), are necessarily tentative because only eight years were covered. Reasons for the good record are offered in terms of several hypotheses.

3. The level of buying plans reported in a given survey is sensitive to variations in the time horizon covered by the question asked. For example, the number of reported plans for the vague question, "What do you plan to buy 'later'?" (than six months from now), was more than four times, on the average, the number of reported plans for a six-month time horizon. Further, if no definition of plan is given in the questionnaire, a great many contingent or highly uncertain plans are reported, since the level of such plans (for a six-month forward period) was higher than the level of plans over a longer (twelve-month) horizon reported in a questionnaire that asked for "definite" plans.

4. Not only the number of plans reported, but also their structure (that is, the relation between plans and other variables) differs widely in response to questions containing different time horizons and degrees of certainty. Relatively short-horizon plans tend to be related to income in much the same way as actual purchases are: the longer the time horizon, the higher the number of purchase plans of low-income groups relative to high-income groups.<sup>2</sup>

5. Six-months buying plans are somewhat more closely related than twelve-months plans to general economic expectations, and to individual financial situations of households. The implication is that shorter-horizon plans are more apt to be meaningful indicators of future actions by households and are probably more useful as ingredients in a forecasting model.

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<sup>2</sup>This description applies to the buying plans of CU members; a random population sample might not show the same characteristics because relatively low-income CU subscribers are more atypical, compared with the population as a whole, than relatively high-income CU subscribers are.

*Variables Associated with Differences in Buying Plans and Purchases Among Individual Households, April 1958 Survey*

1. Family income and age of household head are two of the most important variables associated with both buying plans and purchases, as many other studies have shown. In general, the higher the income level, the more plans and purchases, in groups of households with the same age of household head; the younger the household head, the more plans and purchases, in groups with the same amount of income.

2. The income and age relationships are somewhat different for automobiles and household equipment. Income is more closely related to automobile purchases and plans than to those for household equipment. The reverse is true for age.

*Differences among Households with the Same Income and Age of Household Head April 1958 Survey*

*Financial Variables*

1. For families with the same income and age of household head but differing with respect to recent change in income, it appears that income changes of around 20 per cent or less had little effect on either durable goods purchases or buying plans. This result may be due to the sharp business contraction during the period under observation (October 1957 to April 1958), for forward looking variables, such as expectations about income or general business conditions, will tend to have more influence upon plans and purchases during such a period.

2. The level of financial asset holdings was associated to a relatively small degree with purchases and buying plans, and not at all when asset holdings were above a certain minimum. Insufficient detail in the data on total asset holdings leaves conclusions tentative.

3. In contrast, recent *changes* in financial assets were strongly related to buying plans. Households whose assets had increased reported many more plans than those of the same age and income without increases. Liquid assets changes were not closely related to past purchases of durables, although households with decreased assets tended to show somewhat more purchases than others. These results indicate that the impact of asset changes on buying plans is not due mainly to the discontinuous nature of durable goods purchases. If it were, the relationship between purchases in the recent past and recent asset changes would have been stronger.

4. The amount and maturity of nonmortgage debt exerted a strong influence on buying plans. Households reporting either large amounts of outstanding debt or expecting to be in debt for longer than one year tended

to have substantially fewer buying plans than others. Part of this effect may, of course, result from the larger recent purchases of households with heavy debts compared to other households.

#### *Expectational Variables*

1. Household expectations about personal financial prospects over a five-year future period were strongly related to both buying plans and past purchases, optimistic households generally reporting many more of both. The relationship is not only strikingly apparent among households with the same current age and income, but also became even stronger when comparisons were confined to households with the same one-year income expectations, debt, etc.

2. Expectations about general business conditions one year ahead were strongly related to buying plans and showed some relationship to past purchases. The relationship tends to become weaker when additional variables other than age and income—e.g. long-range financial prospects—are taken into account, indicating that responses to the question were in part simply a reflection of more personally oriented expectations. It seemed clear also that expectations about general business conditions were important for younger but not for older consumers.

3. Income expectations for a one-year future period were strongly related to buying plans, less so to past purchases. The effect of this variable was considerably weakened when long-range financial prospects were taken into account (as noted above).

4. Price expectations showed relatively little relationship to either plans or purchases among households with the same age and income. However, when the household's opinion of the present as a good or bad time to buy was also taken into account, expected price movements turned out to be strongly related to buying plans, but only slightly to purchases. Households that expected prices to fall reported more buying plans and fewer recent purchases than those that expected prices to rise. The implication is that some people had been postponing purchases in anticipation of price declines.

5. Household opinions about current buying conditions were very strongly related to both buying plans and recent purchases. In turn, those opinions seemed to be related most strongly to expectations about business conditions and to recent changes in liquid asset holdings; to a lesser degree they were related to income expectations, price expectations, and debts.

#### *Demographic Variables*

1. There was little relationship between the number of years a couple had been married and the level of buying plans or purchases, probably because the families compared had household heads of the same age.

2. Households that had acquired either new or existing homes within the past two years had made substantially more purchases of household equipment over the previous year than other households had, and had bought about the same number of automobiles. There is an even stronger relationship between plans to buy housing and plans to buy household equipment; people who expected to buy housing within a year reported plans to purchase more than twice as many appliances as other people. The prospective house purchasers reported as many plans to buy automobiles as the others did, so that the difference in home equipment plans represents a net increment rather than a shift in the pattern of durable goods purchases.

#### *Methodological Conclusions*

1. Data from the October 1957 and April 1958 surveys indicate that the character of household responses to any given multiple response question is heavily influenced by the number of alternative responses listed. The greater the number of alternatives, the more likely people are to find an exactly appropriate answer, instead of only the best among alternatives. Thus, each response appearing in the longer of two lists tends to lose some respondents to the additional categories regardless of the apparent precision or vagueness of the categories.

2. A research procedure of sample splitting—i.e., sending different questionnaires to statistically equivalent subsamples at the same time—proves to be an effective device for revealing the relative usefulness of competing questions. It is the only way by which the problem of deciding what questions to use on a survey can be settled. By comparing responses from subsamples to different questions about plans, for example, we can determine which question or which form of it has elicited data most closely related to subsequent actions by the household.