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This paper endeavors to outline the factors that appear to have been responsible for changes over time in aggregate shoe buying by consumers in the United States in the interwar period.

The buying of a single commodity group like shoes certainly is influenced by factors that affect consumer buying as a whole. In addition, shoe buying is related to factors that might operate in one direction for shoes and in another for automobiles or foods, and whose impact on total buying, therefore, might be obscure; consumer stocks of goods and the rate of change in income are cases in point. By a study of a single commodity, then, one may learn something of the factors that would be expected to affect total consumer buying as well as the buying of that commodity. Analogous studies of other commodity groups would deepen and solidify our understanding of total buying and of saving.

There is a formal aspect to this statement: unless we assume that the amount of money that a family saves is a discrete decision independent of goods offered for sale, their prices, the history of recent buying, and everything else except income and attitudes about saving proper — unless one makes this unrealistic assumption, then aggregate buying and aggregate saving are a function of the buying of each commodity group. The whole system involves an intricate, simultaneous balance of the factors governing buying of each commodity and service as well as saving. I need not add that the theoretical solution would also have to comprehend the effect of buying on the supply of commodities, their prices, consumer income, expectations, and so on and on.

Of course, there would be little reason to trouble about empirical study of individual commodities were this formal problem our only concern, since it is nonsense to attempt quantitative studies of such a fantastically intricate model. Nevertheless, so long as we aim at something other than precise quantitative statement, we might, I would expect, learn quite a bit about how changes occur in consumption as a whole and in its internal constitution by studying several major commodity groups separately. In any event, this paper is devoted to the study of one such group — footwear.

One difficulty that ordinarily haunts a study of this sort is that of obtaining for a single commodity estimates of buying sufficiently accurate, frequent, and lengthy to support careful empirical study of the factors that influence change. Footwear provides a favorable opportunity, since it is the dominant product sold by retail stores or departments which have been reporting their monthly sales for some time — shoe departments of department stores and chain shoe

stores. Further, these institutions have, unlike those in many other fields, maintained considerable continuity of function over the years.

Starting with information from eight Federal Reserve district banks and a group of chain shoe stores, we were able to construct a monthly index of retail shoe sales in the United States beginning in January 1926. December 1941 was selected as the terminal date for the major calculations, since the disruption accompanying a war economy and subsequent readjustment is a study in itself. Preparation of the estimates of shoe sales from the basic statistics was an arduous undertaking, the chronicles of which appear as an Appendix.

In the Appendix, too, is an effort to evaluate the work. How to do this raises all sorts of vexing technical problems; and insofar as satisfactory solutions have been achieved, they are applicable to a considerable variety of other data. Certainly, careful appraisal of a statistical series is prerequisite to using it in exacting contexts. It would, for example, make little sense to launch a detailed study of shoe sales without an explicit decision that our record of sales was good enough, so that having "explained" it by hook or crook, there was a reasonable chance that it was largely actual shoe sales rather than some literary construct that had been "explained." This judgment does not, of course, have to be made in one piece; in the Appendix and from time to time in the body of this paper, aspects of our estimates of shoe sales are pointed out which seem less securely represented than others. I might add that there is a reverse side to this coin: close similarities between shoe sales and other data to which they seem logically related buttress confidence in the estimates.

THE PLAN OF THE STUDY

In our culture almost anything can influence what, when, and how much people buy. This proposition has the happy faculty of being too general to use and too complicated to test. The problem, therefore, is to develop a more specific hypothesis.

Though all sorts of factors seem capable of shifting the kinds and amounts of shoes (as well as of anything else) that people buy, some influences are certainly far stronger than others and if they could be designated would account for the major outline of aggregate shoe buying from one time to another. A "strong" factor in this context is one that, in view of the extent to which shoe buying of individuals is typically sensitive to the factor and in view of the variation over time that the factor is likely to undergo, is capable of causing substantial changes in aggregate shoe buying.

This paper endeavors to select the "strong" factors. We do this by examining such evidence as can be mustered — testing, revising, testing again. Thus the final specific hypothesis is produced from the empirical evidence.

The available evidence is of several sorts: First, the insights furnished by introspection and by psychology and anthropology point to what sort of factors can influence how people spend (and make) money. Second, the monthly time series on shoe buying and the patterns we have found in them are full of preliminary suggestions as to which factors are and which are not likely to play an important part in buying. Third, other time series are available that show the impact of factors that might influence buying. Fourth, studies of the income and expenditures of numbers of individual families (area surveys) can serve as a foundation, if used with care, for tentative judgments concerning how the buying of groups of people changes.

In analyzing the effect of an eligible variable on consumer shoe buying, we look first for gross correlation between the variable and shoe sales either in time series or area surveys. But though the presence of gross correlation argues in favor of the influence of the variable on sales, absence of gross correlation does not preclude such influence. There are many reasons why a relationship of significance could be obscured. For one thing, it might be impossible to isolate the variable from one with which it is associated. The income variable is a special troublemaker, for income is not only extremely important in its own right but is correlated with many other variables, the influence of which it swallows up. For another thing, the gross impact on buying of one variable may be damped and confused by the influence of one or more others that parallel it sometimes but not always. Finally, the influence may be too faint to be visible in the choppy and necessarily imperfect statistical data. If gross

association of a given variable with sales is not visible, we can go one step further and see whether it appears after the influence of one or more of the more important variables has been steadied, as best we may, by correlation techniques. In the end the candidates for inclusion may be tested in a multivariate scheme.

This "test" itself goes only a very little farther than the preliminary ones, and its limits will become apparent as we dwell on the problems of selecting the proper simplified models, giving them passable statistical representation and enforcing the *ceteris paribus* condition.