Volume Title: Factors Influencing Consumption: An Experimental Analysis of Shoe Buying

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Volume Publisher: NBER

Volume ISBN: 0-87014-416-2

Volume URL: http://www.nber.org/books/mack54-1

Publication Date: 1954

Chapter Title: Stocks

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Chapter URL: http://www.nber.org/chapters/c9377

Chapter pages in book: (p. 25 - 36)

STOCKS

Another variable that might affect consumer buying of any durable or semidurable commodity is the stock of that commodity already in consumers' possession; it is necessary to attempt to evaluate the importance of this influence on shoe buying. We need to decide in the first place whether stocks play a sufficiently important part to warrant their inclusion in the final multivariate scheme and, if so, how this might be accomplished. Of particular interest is the question whether they might be at least partly responsible for the short waves in shoe buying which the time series display so prominently. The theory that consumer stocks are important has been advanced from time to time in connection with the textile industry, and the logic would apply equally well to shoes. It holds that short cycles are primarily a function of the intermediate life term of these semidurable goods.[1] Semidurables last a year or a year and a half, and the short swings in business last on the average about the same time; the wearing out and consequent need for renewal is thought to cause an initial wave in buying to echo in subsequent waves.[2]

Unfortunately the delineation of the stock-influence on buying presents nasty problems at both an analytic and a statistical level.[3] There is little that might influence current buying that could not be reasonably interpreted as doing so through its effect on the efforts of people to increase or decrease their existing stocks. Taken in conjunction with the rate at which stocks wear out and are discarded, these efforts would determine the amount of current buying. Such an interpretation means in effect that instead of trying to explain shoe buying directly, we might, alternatively, try to explain shoe holdings. This might be done in terms of the same group of so-called "independent variables" which could directly govern buying, although for some of them at least one might wish to include earlier as well as current values.

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less sensitive to changes in a specific price than to the buying power of money. This seems to me to be altogether sound procedure, providing the price histories are sufficiently different to give adequately reliable separate coefficients. I have not followed it because I have tried to economize variables introduced in the correlation analysis. Besides, Stone's findings suggest that shoes might well be a type of product for which a simple ratio between particular and general prices provides a good approximation to consumers' reactions. See his article "The Analysis of Market Demand," *Journal of the Royal Statistical Society*, 1945, Vol. CVIII, Parts III and IV.

[1] See Norman J. Silberling, *The Dynamics of Business* (McGraw-Hill, 1943), Chap. 19; George F. Warren and Frank A. Pearson, *World Prices and the Building Industry* (Wiley, 1937), Chap. VIII, especially p. 165; T. M. McNiece, "The Economic Significance of Replacement Cycles in Demand," *Transactions of the American Society of Mechanical Engineers*, May 1934, pp. 337-353.

[2] Where the goods last just one year, as when they are always renewed in a given month, a tendency toward echo waves would be largely removed by the seasonal correction.

[3] This discussion of stock-influence has benefited enormously from the patient and extensive help of Daniel Suits, and Geoffrey Moore's criticisms have also been exceedingly helpful.

We may, in other words, choose between two equally acceptable conceptual schemes. In the first, current buying is the "dependent" variable which is "explained" by a group of "independent" variables including the stock-influence. In the second, consumer stock is the "dependent" variable which is "explained" by a group of "independent" variables including perhaps, though not necessarily, a "timing-of-buying" variable. Thus the fact that stock can and indeed must be stated in terms of sales, just as sales can be stated in terms of changes in stocks and depreciation, presents a technical problem in connection with the analysis of the stock variable not present for others such as, for example, income or price.

For a number of reasons it is preferable not to shift our frame of reference but to continue focusing the analysis on the explanation of current sales. Stock, then, should contribute to this explanation. It would do so in several ways.

Say consumer shoe buying in month t, or P_t, is a function of the following variables:

$S^*_t - S_t$, where S^*_t is the stock- or ownership-objective at the end of the period and S_t the stocks actually held; thus the difference measures the extent to which stocks differ from desired stock.

R_t, discards or loss of value of stock during the period; it creates a wish to replace.

Y_t, income during the period; it helps to determine the willingness to satisfy the sensed need by current buying of shoes.

V_t, a composite of other variables; such as the ratio of shoe to other prices, expectations, recent changes in income; it likewise helps to determine the willingness to satisfy the sensed need by current buying of shoes.

Thus $P_t = a_1(S^*_t - S_t) + a_2R_t + a_3Y_t + a_4V_t + u$. This model, which is of course a crude one, might be used to study consumer behavior were the requisite data available in either time series or area surveys.

But actually there are no eligible materials on consumer shoe stocks combined with the other requisite information for individual families, nor are there periodic reports on "consumers' closet shoe inventories" that might provide a continuous record. At best, then, a time series on stocks would have to be constructed on the basis of information about shoe sales and an assumption about the character of depreciation. Could one confidently select a thoroughly realistic assumption, such a series would really not be inferior to one obtained by counting shoes in consumers' closets, for even with an actual count it would still be necessary to make assumptions as to the character of sensed depreciation and other matters.

What then is a proper assumption to make as to the pattern whereby shoes lose their usefulness? Needless to say, any assumption would involve even more than the usual resolution to ignore material differences – differences not only among individuals but for large groups at different times. In a ruthless mood,

however, we might, for example, assume that shoes retained their full useful life for a specified interval, say, nine months, and then collapsed and were discarded; call this the "sudden death" formula. Stocks would then be equal to sales for the past nine months; discards would be the sales of nine months ago. It might seem more realistic to assume that shoes lost their value slowly, say in even monthly increments over a period of eighteen months (average stocks would then be the same size as in the previous formula). Stocks would be equal to sales last month plus those for the seventeen previous months, each sequentially carrying one-eighteenth less weight. Discards, or rather the loss of value, would simply be one-eighteenth of the sales for each of the previous eighteen months. On the other hand, this "straight-line depreciation" formula might seem less realistic than one in which depreciation was assumed to have a bell-like shape – slow at first, accelerating to a peak at, say, twelve months or so, and then tapering off.

Whatever the decision, both stocks and requirements for replacement would be determined were monthly shoe sales known.[4] In Chart 4 the resulting time series are shown for the two extreme assumptions – that of straight-line depreciation and that of no depreciation until the moment of sudden death. We use a nine-month life in the second instance and fifteen months in the first.[5]

To build a picture of the stock-objective presents a still wider set of choices. For one thing, the concept of a standard of shoe ownership or stock-objective is itself ambiguous. It can be regarded as subject to so many considerations and reconsiderations that in the end it is simply the outcome that is achieved. Thus the objective for the end of period t, or S^*_t, would equal $S_{t-1} - R_t + P_t$ and all the factors that influence buying comprehended in P_t (income, change in income, past income, etc.) will have conspired to produce this result. The result may be accepted as, by definition, the objective.

But my own preference is to conceive of S^* as a factor having some stability – one that changes slowly with the social environment in which people live and dream. In this case, S^* would virtually never be achieved but merely exert a force; there would be a gap between the ownership-objective and actual stock that would draw buying toward it. Thus the coefficient measuring the impact on purchasing of $S^* - S$ could not be more than 1 and would typically be less. Also, there would be broad consumer choice as to whether, in view of current income, expectations, and the like, this was or was not the moment when the shoes that were definitely needed ought to be purchased.[6]

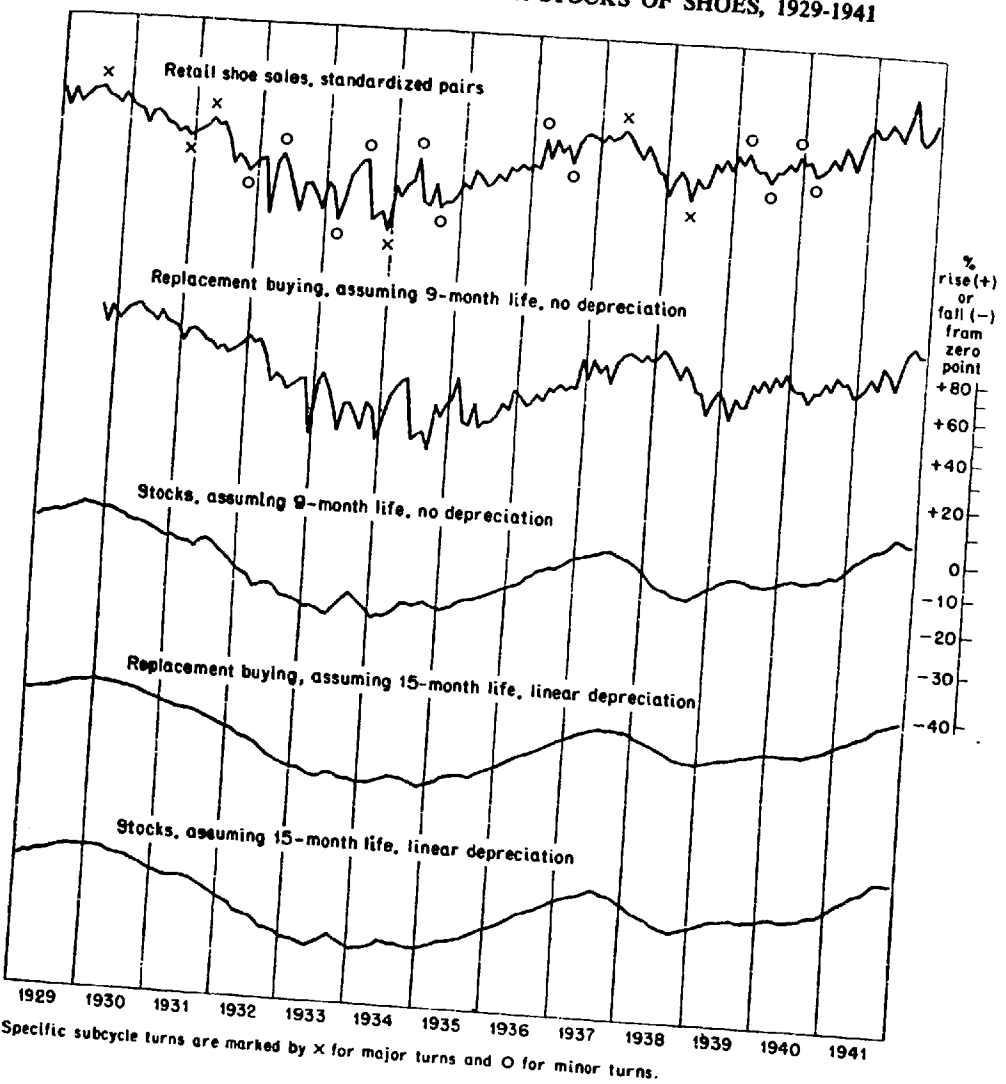
[4] For the purpose the appropriate measure of shoe sales is probably shoe sales in "standardized pairs." This is dollar shoe sales adjusted for change in price of a more or less standard and uniform group of shoes.

[5] The assumption of a fifteen-month life seems to make the comparison between the two types of computations more informative than would be the case were the average stocks held to the same size by assuming an eighteen-month total life.

[6] This is an oversimplification, since the definition of stock itself, involving as it must an assumption about the length of life for which shoes are deemed useful, would certainly be a function of income and therefore subject to change. This would be true, too, of the firmness with which the standards, whatever they are, would be held.

CHART 4

ESTIMATES OF CONSUMER STOCKS OF SHOES, 1929-1941



So conceived, the ownership-objective for shoes would be a function of the shoes that others were known to have and of the shoe service to which each individual had grown accustomed; it would thus be a function of others' and one's own stocks – in short, of aggregate stocks. If only current stocks set the standard, then $S^* - S = 0$, and R would be the sole determinant of the stock influence. But it seems more likely that standards would not be formed in a day but be dependent on stocks for some period of the past, too. How long the time would be is hard to say. If it were very long indeed, so that standards hardly changed at all, S^* would be a constant and have no incremental influence on buying, which would, therefore, so far as the stock influence is concerned, be a function only of S (with a negative sign) and R. If objectives changed slowly, say in accordance with stocks of the past two years, then S^* also would enter the picture of change. $S^* - S$ would be roughly the difference between, on the

one hand, average purchases during months for which stock was still extant (n) and, on the other hand, average purchases for this period plus the number of months for which stock influenced objectives (m), with a weighting system that emphasized the n to m months.[7]

We have discussed a very limited number of all eligible and thoroughly reasonable assumptions concerning each of the three parts of the total stock influence. Nevertheless, a bewildering variety of possible patterns of the influence of stock on buying follow from what has already been said. Before it is possible to judge whether and how the influence of stock might be included in a multivariate scheme, it will be necessary to examine some of these patterns.

But prior to taking on this unhappy task, I want to study the simplest possible effect of stock on buying which, were it actually apparent, would eliminate some of the necessity of more subtle analysis. This, at least, would be the case with respect to one important question: Could the subcycles in shoe sales be due to the stock influence?

Casual inspection of Chart 4 makes it clear that, of the several factors that might represent some portion of the stock-influence on buying, only that of R under the sudden death formula is capable of causing an initial spurt in buying to recur with a periodicity which reflects the durability of shoes, thus producing short waves of buying in the gross figures. A similar effect would be achieved by a very strongly peaked bell-like depreciation formula which in effect approaches the characteristic of the sudden death formula. The contours of the other series smooth the short waves to the point of losing them, and the inclusion of S^* under various assumptions would not change the picture.

A similar conclusion emerges, Daniel Suits has found, when difference equations are used to determine the limits that would be approached under equilibrium conditions in which a stock-objective was completely achieved. The echo effect seems perfectly clear only when the good is conceived of as having a useful life of fixed duration terminating in sudden death. Any other depreciation formula causes a damping of the echo waves which, except for highly peaked bell-like depreciation formulas, is extremely strong and rapid. However, he has not examined the possible role of random shocks in keeping the oscillation alive.

[7] Using the sudden death formulas in which n is the life term (9 in the charted series) and m the number of months over which current stocks form the stock-objective at the beginning of the month, then beginning of month stocks are

$$S_{t-1} = \sum_{i=1}^{n} P_{t-1}.$$

The stock-objective at the beginning of the month is

$$S^*_{t-1} = \frac{1}{m}\left[\sum_{i=1}^{n} P_{t-i} + \sum_{i=n+1}^{m} nP_{t-i} + \sum_{i=m+1}^{m+n} (m+n+1-i)\,P_{t-i}\right].$$

The difference between actual and desired stock is then

$$S^*_{t-1} - S_{t-1} = \frac{1}{m}\left[\sum_{i=1}^{n} (m-i)\,P_{t-i} + \sum_{i=n+1}^{m} nP_{t-i} + \sum_{i=m+1}^{m+n} (m+n+1-i)\,P_{t-i}\right].$$

In Chart 4 shoe buying may be scrutinized for evidence of the secondary waves occasioned by replacement cycles, assuming that replacement takes place after nine months, as the second line in the chart implies. Certainly there is no indication that these replacement waves were a controlling factor in shoe buying. The same statement would apply after experiment with other life durations – fifteen months, eighteen months, etc. But a matching of individual occurrences in this fashion is a more severe test than the hypothesis warrants.

Suppose we merely say that if the waves in buying show the gross influence of the length of commodity life, such waves ought on the average to be more widely spaced for highly durable commodities than for semidurable ones. Table 4, column 3, puts this question to a set of information about sales of various departments of department stores; they are listed in the increasing order of approximate durability of the products. The average length of specific subcycles that were marked for each series seems to bear little relation to this sequence. These negative conclusions appear in the other measure of central tendency shown in columns 3-7. The last three columns of the table need not concern us here. But for the data other than departments of department stores, the exhibits are not inconsistent with the hypothesis that durability plays some part in the periodicity of fluctuations. The chain shoe store index applies largely to popular priced men's shoes for which replacement after a standard number of months might very well be more common than for women's shoes and the higher priced shoes of all sorts often carried by department stores. That this may be the case is suggested by the high concentration for shoe chains (col.7) of fluctuations having a length of between seven and nine months. The longer average length of fluctuations for automobile sales (new registrations) than for pair shoe sales also accords with the thesis. In general, then, observation of the length of fluctuations in sales as a whole gives conflicting testimony as to the possible role of durability.

But the dominant fact bearing on the presence of replacement waves is not revealed by the table. It is simply that minor waves, when they occur at all in the consumer buying of a given commodity, have a strong tendency to occur at the same times for most of these commodities – times when minor fluctuations or at least retardation or acceleration in consumer income are taking place. This fact seems inconsistent with the theory of replacement waves, which would presumably (since commodity lives differ) occur at different times for commodities of longer or shorter lives. Evidence on this point is given in Chart 5. There sales are depicted for six departments of department stores for which typical durability of products ranges from a few weeks to many years. That the fluctuations occur at more or less the same time for most of them is evident. This would likewise be true of the two sets of figures in physical quantities – shoe and auto sales – except that automobile registrations only retarded their decline toward the end of 1930 and in the middle of 1932, and this was not marked as a minor cycle.

TABLE 4

DURATION AND AMPLITUDE OF SUBCYCLES IN RETAIL SALES OF VARIOUS COMMODITIES, 1925-1941

SERIES	PERIOD AVAILABLE	NO. OF SPECIFIC SUBCYCLES RECOGNIZED	DURATION OF SUBCYCLES (months)[a]		RANGE NOT EXCEEDING 5 MONTHS IN DURATION OF SUBCYCLES IN WHICH HEAVIEST CONCENTRATION OF LENGTHS OCCURRED			RELATIVES FOR PER MONTH AMPLITUDE OF SPECIFIC FLUCTUATION[c]		
			Average for all Subcycles	Extreme Range Low-High	Duration (months) Range[b]	Duration (months) Average	No. of Subcycles	Subcycles	Cycles	Ratio Cycle to Subcycle (cols. 9÷8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Departments of department stores:										
Women's hosiery	1926-1940	9	19.1	7, 33	11-12	11.5	3	1.02	.86	.84
Drugs	1926-1940	13	13.2	7, 19	15-19	17.0	6	.73	.53	.73
Men's furnishings	1926-1940	8	21.0	8, 40	12-15	13.0	3	.85	.65	.76
Shoes	1926-1940	10	16.9	7, 31	9-13 10-14	11.0 12.0	4	1.08	.83	.77
Men's clothing	1926-1940	9	18.7	8, 31	8-9 21-25	8.5 23.0	3	1.16	.91	.78
Rugs	1926-1940	10	16.1	7, 44	7-11 9-12	8.5 10.5	5	1.77	1.23	.69
Furniture	1926-1940	10	16.7	7, 46	7-11	9.0	6	1.73	1.30	.75
Chain store sales of shoes	1926-1940	13	12.7	7, 35	7-9	8.0	8	1.51	.98	.65
Retail shoe sales, pairs	1926-1941	12	13.8	7, 33	7-11	9.0	7	1.05	.55	.52
New automobile registrations	1925-1941	7	24.7	10, 43	10-12	11.0	3	2.94	2.37	.81

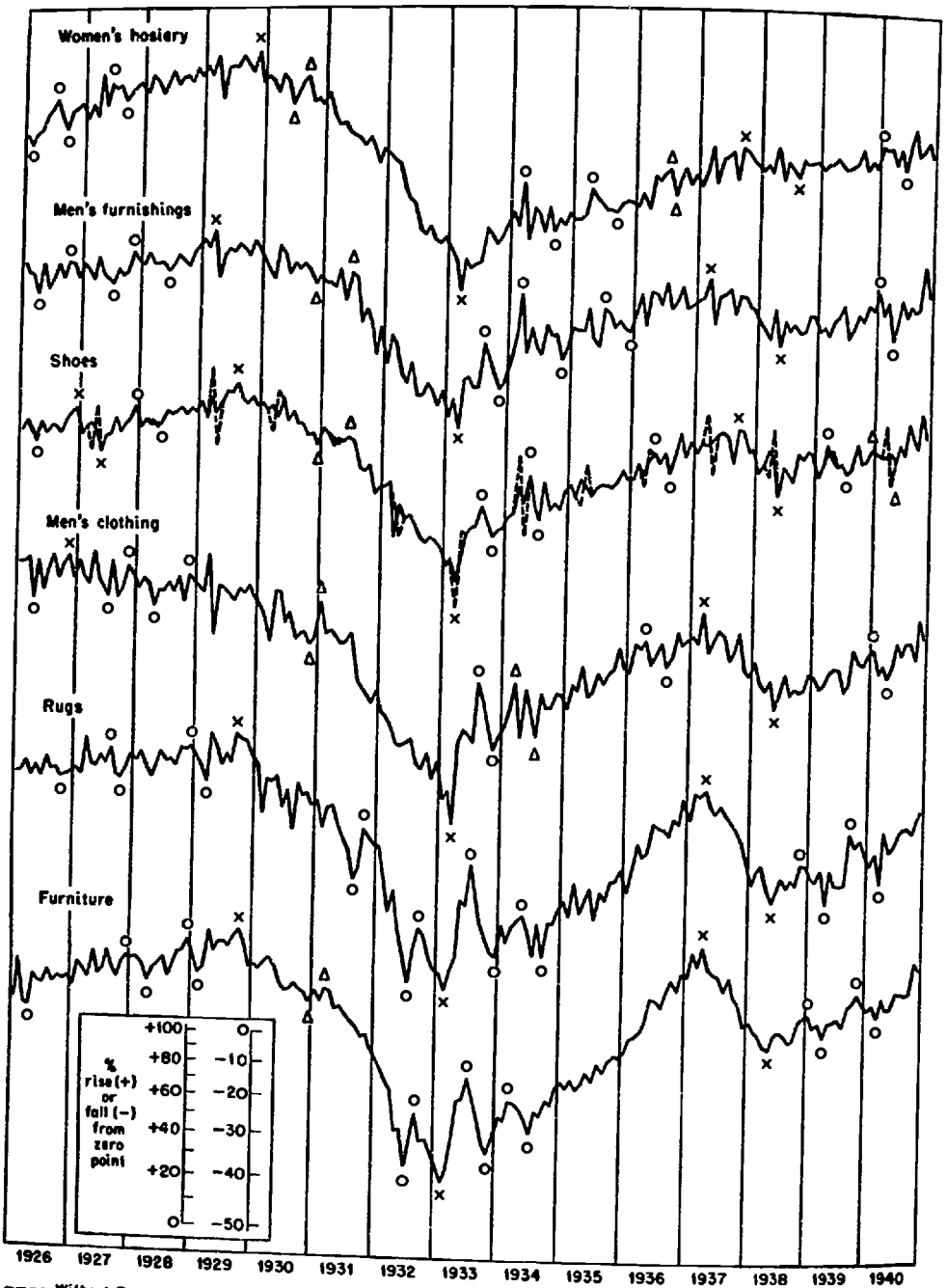
[a] Subcycles are measured from trough to trough.

[b] When the range given in col. 5 is less than 5 months, its extension to 5 months would not increase the number of phases covered as given in col. 7.

[c] Per month amplitude was computed with standings at turns calculated as centered 3-point averages, expressed as a relative of the average standing of the series. Subcycles and cycle amplitudes are for identical periods. Included as cycle turns are those associated with the 1929, 1932, 1937, and 1938 shoe, leather, hide cycle turns. The amplitude of the incomplete cycle phase before 1929 is measured by the rise from the lowest *subcycle* trough to the *cycle* peak associated with 1929. An analogous procedure was used for the incomplete phase after 1937 — the rise was measured to the highest subcycle peak which occurred not later than December 1940.

CHART 5

SALES OF SIX DEPARTMENTS OF DEPARTMENT STORES, 1926-1940



----- Without Easter correction. Turns marked in other series after considering probable influence of Easter correction. Specific subcycle turns are marked by X for major turns, O for minor turns, and Δ for retardations.

But it is altogether possible that, though the influence of stock on buying does impart a periodicity dependent on the durability of each class of commodity, this influence is subordinate to that of other variables, so that it can be observed only after strict *ceteris paribus* conditions have been enforced. To

explore this proposition we should have to enter the other influences along with the stock variables in a multivariate empirical study. But a glance at Chart 4 speaks volumes concerning the difficulties involved in such a procedure: the three components of the stock influence are obviously too strongly correlated with income and with one another to expect correlation analysis to churn out a meaningful statement about their individual importance. But might they, perhaps, be consolidated into a single variable which could hold its own against income and the rest?

The answer, I fear, is no. Consider the difficulties: Since two of the possible influences, S and S^*, smooth out minor movements (S^* might also smooth out major ones) whereas the third, R, will at least under one formula retain them (and shift their location relative to income), it is necessary to know the relative importance of each of the three before their composite photograph can be viewed. Yet this we cannot say on the basis of a priori reasoning. We do not, for example, know the relative size of the coefficients a_1 and a_2, that is, we do not know the relative force exerted on spending by the difference between intended and actual stock, on the one hand, and currently experienced depreciation, on the other. I suspect that it would be influenced by the character of the stock-objective, a_2 increasing relative to a_1 as desired stocks approach actual stocks. Under the sudden death formula, at least, any increase in a_2 relative to a_1, *ceteris paribus*, means an increase in the minor movements relative to the major ones.

A second area of ignorance involves the stock-objective: the closer it approaches current stock, the smaller $S^* - S$ becomes; the nearer it is to a constant, the more its influence, following the pattern of stocks proper with a negative sign, mutes the major movements in the R variable. Finally, there is the matter of how the using up of stock, and coordinately the level of stock proper, should be conceived – whether in terms of sudden death (or at least a strong bell-shaped life curve) or in terms of more even attrition over time. If the latter concept is realistic, minor waves in R as well as in S largely disappear for shoes.

The degree of indeterminacy that all these questions impart to a variable expressing the composite stock influence can be seen by a crude three-way table. The extreme assumptions for each of the three major points of fact are entered for appropriate lines or columns, and we consider simply whether the variable will have a positive (↑), negative (↓), or no (⧺) substantial effect in generating or emphasizing, first, short waves and, second, the longer cyclical waves in shoe buying. The short arrows indicate the presence of some conflict in the impact of the several variables. In all cases the short-wave effect would be an echo of previous spurts in buying; the long-wave effect would result from the cumulative influence of previous levels of buying either on standards or stocks, and this would parallel (though in muted form) and lag major cycles in consumer income.

	SUDDEN DEATH STOCK FORMULA				STRAIGHT-LINE DEPRECIATION STOCK FORMULA			
	$a_1 > a_2$		$a_1 < a_2$		$a_1 > a_2$		$a_1 < a_2$	
	Minor	*Major*	*Minor*	*Major*	*Minor*	*Major*	*Minor*	*Major*
When S^* approaches S	↑	↑	↑	↑	⇈	↑	⇈	↑
When S^* approaches a constant	↑	↓	↑	↑	⇈	↓	⇈	↑

The tendency to create minor movements is, we see, present in the sudden death formula but not in the other. Major movements can be either accentuated or muted. They tend to be muted when two conditions are met, and there is no reason to suppose it uncommon for this to be the case: the stock rather than the replacement variable exerts the stronger influence on behavior; the stock-objective is constant or slowly changing. They are emphasized absolutely under all other conditions, though emphasis relative to the short movements occurs only when depreciation is gradual. Thus under conditions any one of which seem quite realistic, minor waves may or may not be created (other things the same); major movements (which would broadly tend to parallel those of past buying and therefore income with a lag) may be muted or emphasized and either more or less than the minor ones.

To select the correct alternative, since a priori reasoning is silent, it would be necessary to resort to empirical study. The proper way to do this would be to work directly with purchases for successive months of the past. The signs and relative importance assigned to the members of the receding sequence by a multivariate analysis might tell something of the character and relative importance of the more complex variables, S^*, S, and R, which in various combinations are built from the purchase figures. But the difficulties in the way of this approach are for my purposes insurmountable. The data are simply not capable of supporting an analysis using several more variables (and many more are really indicated), especially since their time patterns are bound to be so similar.

Another possibility would be to try to "explain" shoe buying by the relevant variables other than stock and then examine the unexplained residuals to see whether they looked as if stock might, on the basis of any of the alternative assumptions, be partly responsible. To anticipate, this was done and the results were negative. We see short waves in the residuals, but they do not come at the times when replacement demand, on the basis of a nine- or fifteen-month (or any other) typical life, would locate them. Instead, these waves seem to bear some correlation with first differences in sales and in income payments or some of its components.[8] Were the association clear, which it is not, it might suggest that the major swings in stock, at least, were exerting a negative influence on buying, since the positive association between unexplained residuals and the rate of change in buying means a negative association, *ceteris paribus*, between past buying and present buying. Or, alternatively, the positive association

[8] These conclusions are based on Table 8, which appears in a later section.

between rates of change in income and unexplained residuals might mean that the regression coefficient for income, primarily determined via correlation techniques by the major swings in incomes, actually reflect the influence of income damped by the parallel movement of stocks which operate with a negative sign. The coefficient, therefore, would be too low to reflect the full income effect during minor waves when, since stocks do not show these waves, the impact of stock does not parallel income.

One other possible approach to empirical study suggests itself. The analysis indicates that under certain circumstances the number of months that a pair of shoes lasts could create, other things the same, at least very faint echo waves following spurts or dips in buying, with a duration equal to the life term. It is possible that these waves might actually occur at a time when they would emphasize at least some of the income-tied minor waves in shoe buying. Under these conditions minor waves in shoe buying might be emphasized relative to major ones. But this could occur only for commodities having a life term that was not so long as to fall in step with the long rather than short waves in income. For furniture, rugs, and automobiles, for example, none of the possibilities as to the character of the stock-influence could produce an absolute, or probably even relative,[9] emphasis of minor movements. If, then, the amplitude of minor swings were found to be emphasized relative to major ones for semidurable commodities, compared with the relative amplitude of the two sorts of movements for commodities having very short or very long life spans, this would suggest that stocks might be responsible. However, it is clear of course that the absence of this difference would not necessarily mean that consumer buying was not influenced by stocks, but merely that depreciation was gradual, or that some other necessary condition to the emphasis of short waves was not present.

These questions can be put to the department store and other commodity data assembled in Table 4. In column 8 is written the total peak-to-trough amplitude for all fluctuations in each series, and in column 9 that of only those movements associated with the major swings in general business. The figures are total amplitudes divided by the number of months and expressed as a ratio to the average value of the series for the period covered. Column 10 gives the percentage of total fluctuation accounted for by the major swings; subtracted from one, it would give the additional amount accounted for by the minor movements alone.

According to our thesis, the semidurable commodities, other things the same, should have lower ratios than the rest. The figures, however, do not oblige. The various commodities are more remarkable for their similarity than their difference; insofar as they do differ it is the durable commodity, rugs, that shows the

[9] The pattern of stock would, because of the longer life term, lose much of its major cycle flexibility. Were, then, the conditions to apply which for shoes produce a damping influence on major cycles and none on the minor ones, they would, for the long-lived commodities, produce virtually no influence on either, thus leaving their relative amplitudes unaffected.

relatively higher minor movements. The difficulty may of course lie in the fact that many things confuse the picture. The relative importance of major and minor movements is very sensitive to erratic elements in the data, and the various commodities differ in this respect. Also, minor movements may be emphasized in some commodity groups (rugs and furniture would be a case in point) by a positive association of buying with the rate of change in income. It is possible, too, that prices of the semidurable group fluctuate more during business cycles than do the others, and, since retail price movements usually skip minor waves, this might give the major swings in dollar sales for the semidurable group more importance relative to minor swings than would be appropriate for comparison in this context in which physical measures were used. The ratio for chain store shoe sales, however, is lower than for department store shoe sales, and the ratio for shoe sales is lower than for auto sales when both are reduced to comparable types of physical units in the last two lines; this accords with the thesis. All in all, the evidence is inconclusive with respect to the particular question put to it.

As to the broader question to which this section is devoted – the delineation of the probable influence of consumer stocks on shoe buying – this complicated analysis has yielded no firm hypothesis and no method of selecting one. It seems clear that the minor waves in buying are not primarily a function of the typical life span of shoes, for they occur at the same time in commodities that last a month, a year, or a half a decade. On the other hand, such evidence as we have is not inconsistent with the hypothesis that minor movements in shoes are stronger relative to those in income payments than major ones, and this may or may not be true for commodities of greater durability; we do not know.

It is possible that this phenomenon in shoe buying may be explained by the influence of stock; if so, it seems more likely to be a function of the inverse impact of stock proper on the major swings in buying than of the direct influence of the replacement echo effect on minor ones. But it could, as we shall see later, also be due to the influence of variables such as income distribution or expectations. Comparisons between shoes and other commodities might help to select among the eligible explanations, but the data at our command are quite inconclusive: the evidence conflicts and would need to be re-examined after a *ceteris paribus* restriction had been imposed.

Finally, if we assume for the sake of argument that the net influence of consumer stocks on buying is negligible, we still cannot say to what extent this might be due, on the one hand, to an insensitivity of consumer choice to any or all of the major ways that stocks might influence buying, or might be due, on the other hand, simply to the fact that, over time, the patterns traced by these three influences simply cancel one another or are picked up by other variables, notably income. In short, let no one speak lightly of empirical study of the short-term influence of consumer stocks on buying.[10]

[10] The long-term influence seems clear enough, if not for individual commodities at least for stocks as a whole. For, certainly, standards of living are a function of living experience, which for