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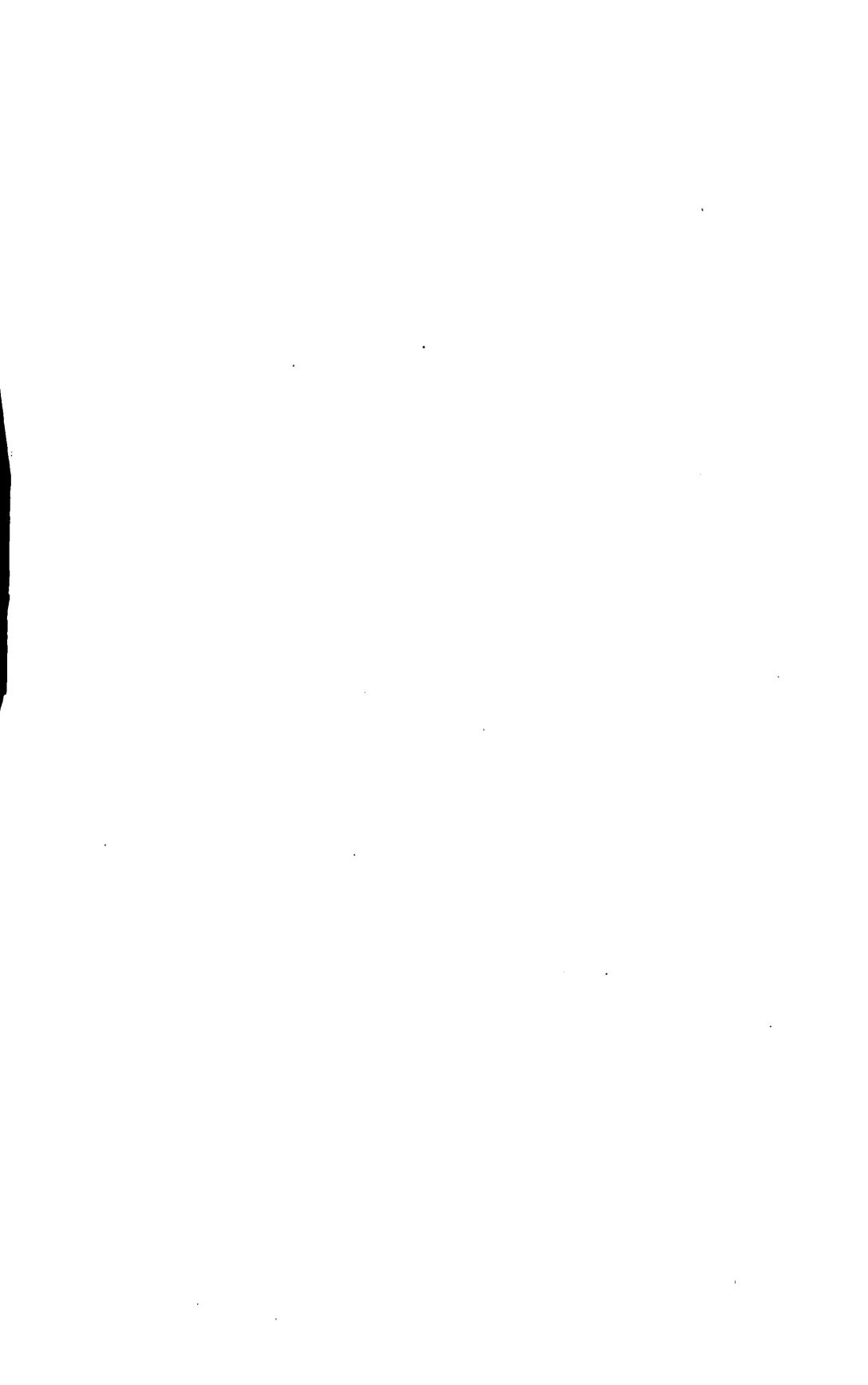
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Part One

THE INSTABILITY
OF
CONSUMER SPENDING



THE INSTABILITY OF CONSUMER SPENDING*

I

The consumer, rarely a heroic figure in economic affairs, scored a modest but noteworthy success in the struggle against inflation during the past year. He had numerous allies — an array of price and wage controls, credit restrictions, regulations concerning the use of raw materials, and a battery of stiff taxes. Yet the consumer's role seems to have transcended all the others. He played his part without fuss or fanfare, as is his wont. A year earlier, after the outbreak of hostilities in Korea, he went on a spending spree in the expectation that shortages of civilian goods, such as had marked the recent war, would soon develop. Businessmen, acting on a similar impulse, rushed to stock up on raw materials and stepped up their production schedules. The general upsurge of spending was reflected in a rise of 17 per cent in wholesale prices and 8 per cent in consumer prices between June 1950 and February 1951. Since military orders in the meantime were only beginning their upward climb, manufacturers soon were able to add profusely to the flow of goods to consumer markets. The supply of civilian merchandise expanded along with the demand; indeed, in some lines of activity — such as textiles, television, and radio — inventories piled up and prices had to be slashed to move them. These developments led consumers to revise their outlook. Spending fell off perceptibly after the first quarter despite the steady rise in personal incomes throughout 1951; by the end of the year savings reached their highest level since the end of World War II.

Largely as a result of the lull in consumer buying, the past year was characterized by a degree of over-all stability that few economists had anticipated. The physical volume of production and employment remained substantially steady through the year. Commodity markets were

* This paper was presented at the Annual Meeting of the Board of Directors of the National Bureau, held February 25, 1952. I am deeply indebted to Geoffrey H. Moore for his advice and assistance, especially on Parts 2 and 3 of this report.

also fairly stable on the average, with wholesale prices declining 2.5 per cent and consumer prices rising 2.8 per cent between the first and last quarters. Meanwhile, the nation pushed ahead towards the goal of high military preparedness. Between the first and last quarters the annual rate of expenditures on national security increased from 29 to 44 billion dollars — an increase that equaled the entire increment in the gross national product and lifted security expenditures from 9.0 to 13.2 per cent of the gross national product. This fairly sharp twist of our economy from civilian to military ends was attained without serious imbalance in the federal budget as well as without any important change in the general level of commodity prices.

Whether last year's remarkable economic achievement will be repeated in the present year is problematical. The renewed increase in the money supply during the second half of 1951, the higher military spending scheduled for this year, the fresh resort to deficit financing — all suggest a revival of inflationary pressure. But there are as yet no clear indications whether consumers will extend their new taste for frugality into the months ahead or go on another spending spree. The consumer has emerged as a complex economic personality; to be sure, not quite so gifted with temperament as the investor or the entrepreneur, but perhaps not much less capable than these gentry of stirring up economic uncertainty.

II

Until very recent years the subject of consumption held a distinctly subordinate place in the main body of economic theory. Even Alfred Marshall, who felt a serious need for the study of consumption, put primary emphasis on "the science of efforts and activities" rather than "the science of wants." The problem of consumer demand seemed to him to offer few major difficulties in a search for the "common kernel" in practical problems of value. Given the "familiar and fundamental tendency of human nature" to derive diminishing increments of satisfaction from successive units of a commodity, and a few assumptions of a more technical character, Marshall was able to establish a "universal rule" of demand: namely, that the lower the price of a commodity, the larger will be the amount that the public seeks to purchase. Marshall knew, of course, that the lumpy character of many consumer expenditures, people's imperfect perception of wants and of the want-satisfying power of commodities, their shifting expectations concerning prices, and sheer impulse were factors to be reckoned with in the actual world, just as he knew that changes in the size of the national income or in the value

of money or in consumer tastes could obscure the effects of the "general law of demand."¹ But Marshall did not dwell on these difficulties. A dollar of changing purchasing power fell outside the scope of his *Principles*; and while he made many profound observations on the nature of economic development, he concerned himself only in passing with income fluctuations.

By and large, Marshall's theory dominated economic thinking on the subject of demand until the course of events in the early thirties forced concern with a wider range of problems. This scientific development was long overdue. It would probably have occurred even without a special stimulus from practical life, once the results of empirical research on the Marshallian demand function became familiar outside a circle of specialists. But life itself, in the shape of the Great Depression, provided a far clearer and more forceful demonstration of the need to release income and other variables from the pound of *ceteris paribus* than any calculation by technicians. As the depression deepened, it became plain to everyone that the dwindling markets for consumer goods were caused, at least proximately, by the collapse in personal incomes. Declines of output and prices were general, and even the goods whose prices declined with special rapidity did not seem exempt from the shrinkage of demand. True, the decline in the relative price of a commodity might stimulate larger purchases, but this influence was usually swamped by the opposing effect of declining income. The drop in aggregate expenditure stood out as a more important matter than shifts in demand for individual articles. An increasing number of economists began to see that however expertly neoclassical theory may have dealt with the role of prices, it had neglected the influence of income on specific demands and, worse still, it seemed to have little to contribute to the explanation of variations in aggregate consumer spending beyond a few hesitant reflections on the effects of the interest rate.

The time was ripe for a major shift in economic theory. Students of crises and depressions, who for a century or longer had practiced income analysis in an effort to make sense of the fluctuations experienced by modern nations, were at last making their influence felt. Other forces were also bending economics toward an increased emphasis on income changes and income differences. Statistical explorations of family expenditures and income, on the lines initiated by Ernst Engel during the eighteen-fifties, took on a new significance under the shadow of mass unemployment. Research on empirical demand functions, which got

¹ Alfred Marshall, *Principles of Economics* (Macmillan), 1st ed., p. 383; 8th ed., pp. 90, 93, 99.

actively under way soon after the publication of Henry L. Moore's *Economic Cycles* in 1914, was receiving serious attention. The income investigations of the National Bureau, which in the early thirties were already beginning to branch out into studies of consumer spending and capital formation, were causing a stir in the economic and statistical world. The subtle reformulation of the Marshallian theory of demand by Hicks and Allen was widely discussed. This extensive literature offered a growing challenge to the older economics; but the most important single factor in shifting the emphasis of economic theory from prices to incomes was Keynes' *General Theory* — a highly original work that met the needs of the despondent and anxious thirties for a theory that was at once simple and reassuring, clothed with the symbols of science, and yet equipped with a political handle for economic reform.

A nation's income, Keynes reasoned in *The General Theory*, consisted of two great classes of expenditure, first on consumer goods, second on investment goods. Next he argued that aggregate consumer spending depended mainly on the amount of aggregate income, while investment expenditures were not tied down by any category of receipts and depended mainly on the state of business sentiment. Finally, he showed that if the variations in consumer spending at a *given* level of income are provisionally neglected, several conclusions of great importance immediately follow. First, consumer spending can respond to changes of income but cannot initiate them. Second, national income — or its correlative, the volume of employment — cannot increase unless investment increases nor decrease unless investment decreases. Third, since investment depends on business confidence, which is notoriously unstable, our economic system is liable to wide fluctuations. Fourth, since "far-reaching change in the psychology of investment markets" cannot be expected, "the duty of ordering the current volume of investment cannot safely be left in private hands."²

To fortify the argument, Keynes enunciated a psychological law and an income formula. There is a "fundamental psychological law," he declared, that "men are disposed, as a rule and on the average, to increase their consumption as their income increases, but not by as much as the increase in their income."³ Suppose, in keeping with this 'law,' that nine-tenths of every addition to the income of a period is spent on consumer goods and the remainder saved. If the volume of investment were now to rise by one dollar, consumer spending in the current period

² J. M. Keynes, *The General Theory of Employment, Interest and Money* (Harcourt Brace, 1936), p. 320.

³ *Ibid.*, p. 96.

would have to increase by nine dollars and national income by ten dollars. This was the formula. Keynes realized, of course, that it could be no more than an approximation. In the first place, it takes time for consumer spending to adjust to a new level of income, and the early effects of an increased volume of investment may therefore be very different from the late or ultimate effects. In the second place, quite apart from the adjustments attendant upon the passage of time, consumer spending is not governed exclusively by the amount of income. To clarify this feature of consumer behavior, Keynes analyzed the influence of other objective factors that seemed to him capable of modifying the amount of 'real' spending at a given level of 'real' income — that is, the distribution of incomes, windfall changes in the value of assets, the rate of interest, changes in fiscal policy, and expectations concerning future incomes. Keynes did not, however, attach great importance to these factors, and he practically dismissed one of them — namely, consumer expectations. To get on with his argument, he lumped them in *ceteris paribus*. He did not stop often enough to remind the reader, or for that matter himself, of the restrictive assumptions on which his analysis proceeded.

Many of the economists who were attracted by the brilliant argument of *The General Theory* gave less attention than Keynes to the factors complicating the consumption-income relation. Not a few practically overlooked them. Whereas Keynes had merely concluded that the propensity to consume was a "fairly stable function" of income, others soon began to speak of it as a "highly stable" function or simply as a "stable" function. Even those who stopped to consider what factors, besides income, may influence the amount of aggregate spending rarely inquired about the role of changes in relative prices or in expectations concerning the value of money. A new economics arose, which devoted itself preponderantly to aggregate income analysis, neglecting variations in prices, just as the older economics had devoted itself preponderantly to individual price analysis, neglecting variations in national income. To the older generation the important problems of economics revolved around phenomena of price as they affected entrepreneurs, investors, landowners, wage earners, and consumers. To the new generation of economists the important problems revolved around the deficiency in aggregate spending such as characterized the thirties; they therefore concerned themselves chiefly with two classes — consumers and investors. To the older economists, all species of economic man were more or less efficient calculators of utility or gain. To the new economists, consumers were creatures of habit whose collective propensity to spend or save could be counted on with assurance; while investors were a dynamic

group whose expenditure, no matter how well cloaked in formal calculations, was at bottom swayed by emotionally tinged estimates of a precarious future.

This psychological distinction between investors and consumers opened up a new vista before economics. For if it was approximately true that consumer spending is linked passively to income, economics was at last on the threshold of becoming an engineering science. In the years immediately following the publication of Keynes' *General Theory*, it came to be widely believed that once the desired level of income was specified, the economist would be able to estimate with tolerable reliability what amount of investment — or of some practical equivalent — would bring that income into being. But if the economist was to perform this engineering function, he needed dependable empirical estimates of the relation between aggregate consumer spending and aggregate income. For this purpose statistics had to be used. A fair number of economists therefore turned eagerly to empirical research and began mining two bodies of new information that became available during the thirties — Simon Kuznets' historical estimates of consumer spending, investment and national income, which were later extended and developed by the Department of Commerce, and the budgetary data for thousands of families brought out by the National Resources Committee.

As these and other statistics were worked over, the results at first looked very promising. Not only did the correlation between aggregate consumer spending and income turn out to be remarkably high, but some investigators found that the correlation could be improved by adding other factors — such as the degree of income inequality, the size of population, the rate of change in total income, or time itself — to the list of independent variables. However, as the statistical experiments piled up, the disturbing fact emerged that rather minor shifts in the period covered by the correlation were capable of modifying appreciably the estimated parameters of the consumption function. The same thing happened when one reputable series on income or consumer spending was substituted for another. Further analysis suggested that what economic policy required was not so much an estimate of the consumption function as an estimate of its complement — that is, the savings function. "The most important single economic fact about the community," declared Beveridge, is "the amount which the individuals of a community will try to save under conditions of full employment, with a given distribution of income."⁴ But if this was the critical fact, then the high correlation between aggregate consumer spending and income had slight

⁴ William H. Beveridge, *Full Employment in a Free Society* (Norton, 1945), p. 96.

significance. Clearly, since consumer spending was on the average about nine or ten times as large as saving, a small percentage error in the spending estimate could mean a large error in the saving estimate. Indeed, independent calculation showed that the correlation between saving and income was by no means so high as between spending and income, and that "the most important single economic fact about the community" was therefore a somewhat elusive magnitude. When the forecasts even of what consumer spending would be after V-J Day were found to be in error by an uncomfortable margin, faith in a stable consumption function was severely shaken.

Many believed, however, that consumer spending would emerge as a fairly stable function of income, once the shortages accumulated during the war were made good. Reflecting this view, the President's Economic Report to the Congress in January 1947 stated that "if consumer incomes should remain at current levels, we would expect savings to drop little, if any." The report also expressed doubt "whether the rate of consumer savings will or even can be reduced much further except by adversity." As it turned out, the rate of savings was reduced much further during 1947 — and not by adversity, but by prosperity. More recent events, especially since June 1950, are familiar and have led to a sharp reversal in economic thinking. The President's latest Economic Report declares that "consumer spending is the most uncertain factor determining the general inflationary outlook for 1952."⁵ A few years ago a statement of this character would have invited ridicule. Today it hardly causes a ripple. Few, if any, economists are any longer disposed to question the capacity of consumers to change their rates of spending and saving without prior notice. Indeed, there is some danger that the whimsical character of consumer spending will now be as roundly exaggerated as was its mathematical determinacy only a short time back.

III

The ups and downs in recent economic thinking about the consumption-income relation require appraisal. It is salutary for practicing economists to fight each year's battle; but it is not less important to try to see such activities as a historian might see them. The recent controversies and reversals of opinion about the consumption function are not likely to stir deeply a later generation. What future economists will look for are

⁵ *The Economic Report of the President*, January 8, 1947, p. 13; January 16, 1952, p. 20.

the cumulative trends, of which controversies such as this are merely a surface expression, and that is what we ourselves should try to see.

One of the trends that has been gathering force in economics, and never more rapidly than in our generation, is an interest in a widening range of problems connected with the activities of consumers. The speculations of Cournot on the elasticity of demand, which were ignored by his own generation, have been turned to practical account by businessmen and governmental agencies in ours. Budgetary studies, which several decades back were of interest chiefly to social workers, have become instruments for analyzing how the economy at large functions. Fluctuations in aggregate spending, which not so long ago many viewed as an obsession of the crank, now occupy the time and thought of reputable economists, businessmen, and even heads of governments. Perhaps no other general subject receives as much attention nowadays as the spending of different consumer groups on specific goods and in the aggregate, the shift in these patterns through time, the movement of total spending and saving, and the degree of adequacy of current living standards in our own country and other parts of the world. Vast changes in the political and economic environment, as well as many intellectual currents, have converged to produce this emphasis on mass consumption and well-being. Keynes' aggregate consumption function is a symbol of our era, just as Marshall's individual demand function symbolized an earlier time.

Another major trend which has been gaining strength is a tendency towards closer fusion between speculative theorizing and empirical testing. Already in 1838 Cournot, having expressed with theoretical precision the relation between the demand for a commodity and its price, went on to plead for the statistical calculation of demand elasticities, or at least the empirical classification of "articles of high economic importance" according as their elasticity at ruling prices was above or below unity.⁶ His plea went unheeded. In 1890 Marshall went beyond Cournot, and actually sketched the basic design that would need to be followed in testing and applying his demand theory. But while Marshall's work aroused considerable literary controversy the world over, his ideas on statistical procedure remained fruitless until Henry L. Moore took them up in the first of his books on business cycles in 1914. Thus, depending on whether we look back to Marshall or Cournot, one quarter or three quarters of a century elapsed between the formulation of an

⁶ Augustin Cournot, *Mathematical Principles of the Theory of Wealth* (Bacon translation, Macmillan), p. 54.

economic theory and its first significant statistical test.⁷ There was, however, no such hiatus in the case of the Keynesian theory. The world which it entered was already accustomed in some degree to require of an economic theory that it pass the test of applicability to experience. Almost as soon as *The General Theory* was published, the question was raised whether its novel notions concerning consumer demand were valid; and while this question was more often discussed on a speculative than on a factual plane, within a year or two statistical measurements and tests of the aggregative consumption function began to appear in economic journals. The process of scientific checking and sifting is still going on. A *Technical Paper* by Robert Ferber, which I hope we may publish this year, will contribute to this essential task by examining the degree of success that has thus far attended the numerous efforts to establish the characteristics of the consumption function.

The promptness and persistence with which the Keynesian theory has been subjected to the testings of experience are not yet typical of economic inquiry generally. But the trend is definitely in the direction of an economics in which quantitative records and empirical tests play a significant part. Recognizing this need of modern times, the National Bureau has steadily sought to develop and clarify the economic facts that surround major social problems. Our very first investigation produced approximate measures of the size and distribution of the national income — a subject obviously of critical importance, yet one that at the time was still being handled on the basis of opinion and guesswork. Even while this study was in progress, Wesley Mitchell called the Board's attention to the need for investigating quantitatively the subject of savings versus current consumption. After several tentative efforts in this direction during the twenties, a fairly comprehensive investigation was started in January 1933, under Simon Kuznets' direction. Within a year or two his researches yielded annual estimates of the flow of services and commodities to consumers, besides estimates of investment, back to 1919. Later Harold Barger converted the annual figures into quarterly form; Shaw and Kuznets carried the statistical record back to around 1870; Duncan Holthausen, collaborating with Rolf Nugent and Malcolm Merriam, prepared monthly estimates of consumer instalment credit; and David Wickens improved existing measures of the aggregate cost of new dwellings — a consumer good that statisticians usually prefer to treat as part of investment. More recently, in connection with a comprehensive accounting of the flow of money through the economy,

⁷ See Henry Schultz, *The Theory and Measurement of Demand* (University of Chicago Press, 1938), pp. 63-5.

Morris Copeland has developed annual estimates of money flows and year-end estimates of cash and related assets for households. Each of these statistical efforts⁸ has met a widely felt need. Each has been taken over, extended, and improved by one or another agency of the federal government. Governmental agencies in turn have initiated many new statistical enterprises in this general area, one of the most interesting being the annual survey of consumer finances conducted jointly by the Federal Reserve Board and the Survey Research Center at Michigan.

I have already referred to the eagerness with which economists turned to the new statistical materials in an attempt to test, apply, or extend Keynes' theory. That some of the statistical research was done with excessive haste is a trivial matter at this distance. The vital fact, from a historical viewpoint, is that economics has reached a stage where theoretical propositions are often taken so seriously that they are not permitted to become an object of purely dialectical concern and development. The great power and promise of empirical economics lie not in its voluminous records or formal methods of handling hypotheses, but in the attitude of mind fostered by its practice — an attitude of mind that is sensitive and receptive to the teachings of experience. It is this attitude of mind, more than anything else, that has blurred the line that not so long ago separated the 'old' and 'new' economists, that has brought to light the strength and weakness of the Keynesian theory of consumer demand, and that has driven an increasing number of investigators to probe intensively beneath the surface of economic aggregates when searching for the causes of their movements.

A generation or two ago the properties of abstract utility schedules were a favorite topic of discussion among economists interested in the subject of consumer demand. Interest later shifted to the properties of indifference curves, and later still to the properties of a supposedly stable schedule linking aggregate consumption and aggregate income. These subjects have not been outmoded by time; but nowadays economists

⁸ See the following: S. Kuznets, "Gross Capital Formation, 1919-1933," *Bulletin* 52 (1934); *National Income and Capital Formation, 1919-1935* (1937); *Commodity Flow and Capital Formation* (1938); *National Product since 1869* (1946). William H. Shaw, "Finished Commodities since 1879, Output and Its Composition," *Occasional Paper* 3 (1941); *Value of Commodity Output since 1869* (1947). Harold Barger, *Outlay and Income in the United States, 1921-1938* (1942). David L. Wickens and Ray R. Foster, "Non-Farm Residential Construction, 1920-1936," *Bulletin* 65 (1937); D. L. Wickens, *Residential Real Estate* (1941). Duncan McC. Holt-Hausen, Malcolm L. Merriam and Rolf Nugent, *The Volume of Consumer Installment Credit, 1929-38* (1940). Morris Copeland, *A Study of Moneyflows in the United States* (1952). All of these titles are publications of the National Bureau; Copeland's volume, now in press, will soon be published.

address their theoretical questions more frequently to records of experience and less frequently to one another. The subject of primary interest concerning consumer demand has become the consumer himself — that is, his actual behavior and the kind and degree of regularity that characterize it. How, in what directions, and in what degree is the current spending of individual families influenced by the size of the family, the age of its members, their occupation, their place of residence, their income, any recent shift in their income, their highest past income, the amount of their liquid assets, their stock of durables and semidurables, recent changes in their buying, their highest past spending, their expectations concerning future incomes and prices, the amount and kind of their neighbors' buying, and by still other factors? How, in what directions, and in what degree is the consumer spending of a nation influenced, among other things, by the distribution of individual incomes, by the amount of capital gains or losses, by changes in the general level of prices, by the dispersion of individual price movements, by the terms on which consumer credit is extended, by the introduction of new commodities, by advertising expenditures, by the rate of formation of new families, by the geographic mobility of the population? These are some of the questions now being put by economists;⁹ and while none have as yet been answered with precision and some have hardly been answered at all, the rough foundations of an empirical science of consumption are slowly beginning to take shape.

IV

The National Bureau has participated in this adventure by making analytical investigations, besides developing basic factual records such as I previously mentioned. In a study now approaching completion Thomas Atkinson has explored the amounts of financial assets held by individuals, with an eye to the factors that underlie the distribution of different categories of wealth among them. Another study in its closing stages, and which bears more directly on the inchoate science of consumption, is Lawrence Klein's investigation of family spending and saving,¹⁰ based on the individual returns obtained by the Survey Re-

⁹ For a survey of recent empirical research see a forthcoming paper by Ruth Mack, "The Economics of Consumption," in Volume II of *A Survey of Contemporary Economics*, edited by Bernard F. Haley.

¹⁰ For some preliminary results see two papers by Lawrence R. Klein: "Assets, Debts, and Economic Behavior," in Volume XIV of *Studies in Income and Wealth* by Conference on Research in Income and Wealth (National Bureau, 1951); and "Estimating Patterns of Savings Behavior from Sample Survey Data," *Econometrica*, October 1951.

search Center in recent sample surveys. These returns contain unusually extensive and varied information about each of the spending units interviewed and permit fuller empirical analysis of the forces that shape consumer saving than has hitherto been possible.

Klein has made good use of the opportunity. His basic and most suggestive finding is that family spending and saving depend upon many factors, not upon one or a few variables.¹¹ In contrast to the magnificent coefficients of correlation between consumer spending and national income over time, which abound in statistical literature, very humble correlations show up between the spending and income of individual families during any one year. This means, of course, that factors other than current income are much too important to be slighted. Klein finds, for example, that the greater the amount of liquid assets held, the smaller —other things equal— will savings tend to be, especially in low income groups. Again, homeowners tend to save more than occupants of rented premises; people expecting favorable economic developments tend to save less than folk expecting unfavorable conditions; and so on. By his careful comparisons of different samples, Klein also shows that the direction of the specific influences he examines is more dependable than their numerical effect. To be sure, as he points out, much of the numerical instability would tend to vanish if the samples covered a larger number of spending units. This still means that uncomfortable margins of error may attend projections based upon the present samples. Furthermore, some of the variations from one year's equation to another cannot be attributed to sampling fluctuations; they may be due to intrinsic flaws in the equation or to 'jumps' in behavior which defy any equation. The movements of consumer spending after the outbreak of the Korean War are an outstanding example of a 'jump.' Another instance is the behavior of consumer spending and borrowing at the end of World War II. As Kisselgoff's recently published study shows, a formula that summed up effectively the forces impinging on the volume of instalment sales credit before 1941 was quite unable to cope with the conditions that prevailed after the war.¹²

To improve our ability to distinguish between the stable and capricious elements of consumer behavior, it is highly important that studies such as Klein's be repeated for future samples and that careful con-

¹¹ This mathematically tested finding is an extension of earlier research by the Survey Research Center. See George Katona, *Psychological Analysis of Economic Behavior* (McGraw-Hill, 1951), Chapter 8.

¹² "Factors Affecting the Demand for Consumer Instalment Credit," *Technical Paper 7* (National Bureau, 1952).

sideration be given to the research needs disclosed by his investigation. The noncorporate part of the business world has always been a somewhat cloudy corner of the economy to the statistician. Unincorporated firms are usually small and do not practice meticulous bookkeeping. Moreover, producing and consuming activities are much less distinct in a family whose head operates a farm or a small business than in the run of households. It is not surprising, therefore, that Klein found that his calculations of spending and saving propensities are less reliable for farmers and independent businessmen than for other groups. To remedy this defect of existing knowledge, one or more specially designed sample inquiries would be necessary. Such inquiries would probably yield a maximum of instruction if students concerned with the producing and financing activities of small business worked side by side with others interested chiefly in household operations.

Another difficulty that Klein has encountered is the absence of adequate information on the stocks of goods possessed by households. Survey techniques, which have already yielded much more than seemed likely only a few years ago, may perhaps be developed before long to a point where chairs, lamps, and shirts held in varying stages of physical decrepitude and personal incertitude can be expressed in useful numbers. An alternative approach to consumer stocks that warrants study is through the medium of time series. If consumer purchases exceed the actual consumption of a period, stocks are being built up. If consumer purchases fall short of consumption, stocks are being drawn down. Such investment or disinvestment in inventories is always taking place in the nation's households, but we have not had a systematic or continuous record of it. An interesting method for attacking this problem has recently been worked out by Raymond Goldsmith in connection with the intensive study of savings that the Life Insurance Association of America has been making under his direction.¹³ Apart from price adjustments, the procedure consists in applying depreciation rates to different categories of durables, subtracting the estimated depreciation during a period from the dollar value of new purchases so as to get the net addition to consumer stocks, and then cumulating the increments to derive a series of total stocks. Goldsmith has made annual calculations of this type for consumer durables back to the beginning of the century. With

¹³ R. W. Goldsmith, "A Perpetual Inventory of National Wealth," in Volume XIV of *Studies in Income and Wealth*, cited above. See also Lenore A. Epstein, "Consumers' Tangible Assets," in Volume XII of *Studies in Income and Wealth* (National Bureau, 1950), and Reavis Cox and Ralph F. Breyer, *Consumer Plant and Equipment* (Retail Credit Institute of America, Washington, 1944).

further research his procedures might be extended to semidurables and the entire plan of measurement put on a quarterly basis. Estimates such as this have obvious defects, but their practical importance must be gauged in the light of experience. If tolerably dependable statistics of consumer stocks can be devised, it seems likely that they will prove helpful in judging current developments as well as in historical and analytical investigations. An incidental but not unimportant advantage of such statistics might be that their mere existence would curb the fairly common but misleading tendency to identify consumer spending with consumption proper.

I cannot dwell further on the gains to be sought by developing new statistics or by refining and testing the statistics we already have or the concepts that underlie them. Fortunately, there is no need for special emphasis on these matters; they are now well understood and will doubtless continue to receive active expression. What does require emphasis is that even existing statistics can help us go further than we have in tracing the interrelations between the activities of consumption and production. The consumer research of the last ten or fifteen years has centered primarily on the facts and causes of variation in consumer spending and saving. The intricate effects of these variations on the over-all operations of the economy — particularly, on the production of consumer as well as investment goods industries — have received much less attention. This one-sided accent was natural as long as the belief was widespread that consumer spending was merely a passive response to national income, and that private investment and governmental spending were therefore largely, if not entirely, instrumental in driving and shaping the level of income. Now that statistical research and the course of experience itself have made it clear that this simplification is unwarranted, there are signs of a renewed theoretical interest in the dynamic interconnections of consumption, production, and income distribution. But the theorists need aid and guidance from empirical research if their models are to cope seriously with the problem of how changes in consumer spending spread their influence over the economy.

How much there is to be learned about this problem is indicated by Ruth Mack's searching investigation of the causal links between shoe buying and earlier stages of production and distribution. She finds, for example, that about a year typically elapses between the first appearance of a hide at market and its later entry, in the shape of shoes, into a consumer's closet. This long interval leaves, however, no obvious imprint on retail sales of shoes relatively to shoe production or still earlier stages

of the industry — all of which exhibit nearly concurrent fluctuations. Again, the retailer does not merely transmit the changes in consumer purchases to the wholesaler or manufacturer; he magnifies them. Thus the amplitude of fluctuations is larger in wholesale sales than in sales at retail, also in shoe production than in sales at wholesale, and to some degree in leather production than in shoe production. Here the intensification of the cyclical movement stops; the production of leather is preceded by the movement of hides into commercial markets but this activity undergoes narrower fluctuations than the production of leather. Of course, the varying amplitude and similar timing at successive stages of the shoe-leather industry imply that the cycle in retail sales is accompanied by a corresponding cycle of investment in shoe and leather inventories and by an inverse cycle of investment in hide inventories. These movements of sales, production, and inventories — and I have singled out only a few — raise difficult questions. How does the cyclical synchronism in the different parts of the shoe-leather industry come about? Why are the fluctuations of retail sales, when passed on to earlier stages, at first magnified and later moderated? And why does this industry, besides participating in business cycles, trace out a shorter cycle of its own? To clarify these striking phenomena Dr. Mack has put principal stress on four factors: first, the rate of change in consumer buying; second, the degree of firmness in the inventory objectives of dealers and manufacturers; third, the adjustment of orders to the varying length of delivery periods over the course of a cycle; fourth, expectations concerning price movements. But the importance of these factors differs from one branch of the shoe-leather industry to another and, of necessity, from one industry to another.

Once the full report on this investigation, which is now being revised, has been completed, it would be well to consider what additional studies may be needed to advance realistic understanding of the vertical transmission of cyclical impulses. Some useful suggestions about this problem are made by Wesley Mitchell in his posthumous volume, *What Happens during Business Cycles*. A special aspect of the problem, namely, the effects of variations in instalment credit on economic activity at large, was treated by Gottfried Haberler in *Consumer Instalment Credit and Economic Fluctuations* — a volume that has exercised a significant influence on both business and governmental policies since its publication ten years ago.¹⁴

¹⁴ Both Haberler's and Mitchell's volumes were published by the National Bureau, the former in 1942, the latter in 1951.

The relation between 'wants' and 'activities' is the basic theme of economics. Numerous theoretical systems have been constructed by assigning primacy to wants, and again by assigning primacy to activities. But in actual life there is only interdependence. The principal task of economic science is to analyze this interdependence and to extract the elements of regularity that underlie or characterize the influence of wants on activities and of activities on wants, especially under conditions of change. This task is proving harder than many thought likely in the early days of enthusiasm over the new doctrines of Keynes. But some progress has been made, and knowledge concerning the interrelations of consumption, production, and income distribution is cumulating.

In addition to the general research tasks that I have already mentioned, there is one that falls peculiarly within the range of the National Bureau's experience. We have devoted over the years considerable resources to the study of trends in national income, production, employment, the labor force, and business finance; and we are now making an elaborate study of trends in capital formation and the prospective requirements for capital. Would it not be desirable, once some of our present investigations taper off, to supplement these studies by equally systematic research on consumption trends? Such research would help to clarify our present and earlier investigations, and it would help the research of others as well as our own. Indeed, nothing seems more likely to contribute to perspective and informed judgment on consumer problems than a comprehensive survey of trends in consumption, analyzed so as to bring out their relation to the general development of our economy since 1900 or, better still, since 1870.

The doctrine of secular stagnation, which stirred economic circles only a short time ago, owed some of its popularity to inadequate appreciation of the historical fact that the spending of the 'average' family at a given level of family income has shown a progressive tendency to increase across the decades. One of the main explicit pillars of the stagnationist theory was, of course, the absolute decline in the year-by-year increments of our population; but this decline ceased just about the time when the theory was first articulated. The last fifteen years have witnessed a great upsurge of population and the years since the close of World War II a tremendous boom in home construction. In 1890 owner-occupied dwellings constituted 36.9 per cent of all occupied dwelling units; this proportion stood at 41.1 in 1940 and climbed to 53.3 by 1950.¹⁵ In 1900 the value of the structures and equipment of

¹⁵ Ernest M. Fisher and Leo Grebler, "A Stocktaking of Housing in the United States," *Appraisal Journal*, July 1951, Table III.

business firms about equaled that of the dwellings, carriages, and household durables of consumers. In 1948 the consumer plant and equipment exceeded the value of business plant and equipment by about 30 per cent.¹⁶ Spending on durables, which was 11.9 per cent of total consumer expenditure in 1929 and 10.4 per cent in 1937, rose to 13.3 per cent in 1949 and 15.1 per cent in 1950.¹⁷ Per capita food expenditure, exclusive of alcoholic beverages and adjusted for the rise in retail food prices, increased nearly 40 per cent between 1929 and 1948.¹⁸ These and a thousand other statistics on consumer behavior require assembly, perhaps rectification, and certainly interpretation.

Vast changes have occurred in recent decades in technology, the distribution of population between urban and rural centers, the industrial status of women, the education of children and adults, the length of human life, the range of available commodities and services, the speed of communication, the income per capita, the distribution of incomes among the people, and the activities of government. How have these and related developments affected consumer spending patterns? To what extent, in particular, has the decline in the inequality of personal incomes since 1929 helped to create mass markets for a wide range of commodities? In what ways has the recent sharp increase in the marriage rate, in home ownership, and in the number of children affected the allocation of consumer income among different kinds of expenditure and between saving and spending? How, in turn, has the modern emphasis on possession of ever larger amounts of consumer goods reacted on the pecuniary ambitions of people, their willingness to work, and their attitude toward assuming the risks of innovation and enterprise? How has the trend of employment in the service industries¹⁹ been affected by our changing consumption standards? How has the surprisingly high rate of food expenditure in recent years affected the fortunes of farmers and the long-run prospects of agriculture? With what speed, and with what effect on saving and other types of spending, have industrial prodigies like the electric refrigerator, the radio, and the television receiver been absorbed into the consumer economy? What part has the development of consumer instalment financing played in this process? How has the extension of life insurance, social security programs, and

¹⁶ R. W. Goldsmith, *op. cit.*, p. 18.

¹⁷ Estimates by the Department of Commerce.

¹⁸ "Consumption of Food in the United States, 1909-48," *Miscellaneous Publication No. 691* of the Department of Agriculture, p. 138. See also Chapter 2.

¹⁹ This subject has already been partly elucidated by George Stigler and he is investigating it further. See his "Domestic Servants in the United States, 1900-1940," *Occasional Paper 24* (National Bureau, 1946), and "Employment and Compensation in Education," *Occasional Paper 33* (National Bureau, 1950).

private pension plans affected consumer spending and saving? And what does the increasing proportion of consumer outlay on goods that need not be purchased continuously, either because they have a long life of service built into them or because they are of a luxury character, signify for the problem of maintaining economic stability in the future?

These questions are of practical as well as of scientific interest. Perhaps some of them are unanswerable, and perhaps all are only partly answerable. But it will be well to keep them in mind when we come to think more concretely about a survey of consumption trends. The past studies of the National Bureau have helped to illuminate a few corners of the vast terrain of economic life. With careful planning and the help of investigators in other institutions, it should lie within our power to illuminate a few additional corners.

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