

MONETARY THEORY

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I. INTRODUCTION

IN THE social sciences our accumulated knowledge is so small and the unexplored areas so vast that of necessity we measure progress by the understanding we obtain of particular and pressing problems. Thus Adam Smith did not write primarily as a scholar but rather as a social surgeon to remove from the body politic the surviving malignant remnant of Mercantilism, while the emphasis of Ricardo and Mill on diminishing returns and the rent of land directly reflected their interest in the ultimately successful campaign of the rising business classes to end the impediment to further industrialization represented by the Corn Laws.

In the same way recent monetary theory directly reflects the unprecedented depression which rocked the industrialized world during the nineteen-thirties; in the United States, perhaps worse hit than any other country, the increase in productive capital, which had averaged 6 per cent a year for the first three decades of the century, over the 'thirties as a whole was negligible in amount. As a result the center of interest has in general shifted from the factors determining the quantity of money and its effect on the general level of prices to those determining the level of output and employment. In addition, the purely monetary devices for control, on which great store had been laid, were found to be broadly ineffective, taken by themselves, in bringing about recovery from the Great Depression. And finally, as a result of the way in which the war was financed, it seems quite likely that it will prove impossible to use such devices for the effective control of a future boom. The general change in emphasis is well indicated by the altered character of university courses: in 1930 an outstanding elementary text devoted 144 of its 1250 pages to Money and Banking and 16 to the Business Cycle; in 1947 a new elementary text devoted 205 of its 700 pages to National Income and Employment and 55 to Money and the Interest Rate!

The implications of this decreased emphasis need to be made quite clear. Basically it reflects a reduced interest in the factors influencing the quantity of the available means of payment and an increased interest in

the factors influencing the level of spending. Apart from unguarded statements monetary theorists have of course generally been aware that money had not only to be created but also spent if it was to have any effect on the economy. But up until relatively recently the economy abhorred any large amount of idle balances. Thus the emphasis of monetary theorists was on changes in the quantity of money, accompanied by the sometimes stated and sometimes implied assumption that balances, once created, would not long stay idle. It is with monetary theory in this narrow sense that this paper will be mainly concerned.

This narrow construction of monetary theory perhaps requires defense. There can be no question that the fields covered by monetary theory, the theory of compensatory fiscal action, and business cycle theory are at least closely related if not actually overlapping. Further, business cycle theory to a major extent, and fiscal theory to a lesser extent, evolved out of monetary theory; as a result courses and economists have often in recent years been labeled "monetary" when in fact they were dealing with employment, output, and income. But a broad use of monetary theory would not only make it a synonym for business cycle theory but also would make it impossible to describe separately work dealing predominantly with the factors influencing the quantity of money. In other words, it has seemed desirable to separate monetary from fiscal and cyclical theory in such a way as to minimize the overlapping between the fields. I sincerely hope that those who have been accustomed to define monetary theory more broadly will not take offense at the relatively limited meaning which is used in what follows, and will remember that it is monetary theory in the narrow sense which is described as having declined considerably in importance in recent years. It should hardly be necessary to point out that the depression greatly increased the importance of monetary, fiscal, and cycle theory taken together.

This paper will start with a description of some of the recent changes in environment, both to summarize the contribution of those who have worked on the statistical side of monetary problems and at the same time to explain why the changes involved have been so largely responsible for our decreased interest in the quantity equation in recent years. A second section will be devoted to the concepts of monetary equilibrium which were developed as alternatives to the quantity equation, while a third will cover changes in the explanation of the determination of the rate of interest. Two final sections will deal with the financing of the war and the heritage that the war has left us.

Any summary of developments during such a dynamic period in monetary thought cannot fail to be impressionistic. In a literal sense, therefore,

the summary will inevitably be wrong; but in a broader sense it is only the surviving impact of thought which is important. The obscure and forgotten passage or the uses to which discarded tools of analysis *might* have been put are not what matter, however much they may delight the historian and prove that there is nothing new under the sun. It is, then, to the broad view that this essay will be devoted; he who seeks details will have to look elsewhere.

II. THE CHANGING MONETARY ENVIRONMENT AND THE DECLINE OF THE QUANTITY EQUATION

Few analytical devices in economics have been as useful over as long a period as the quantity equation of exchange. By the start of the 1930's there was considerable agreement that the equation was perfectly valid when properly—i.e., tautologically—defined.¹ As first propounded by Professor Fisher, T included “all things sold for money” during any period, so that V became all uses of money to buy “things” and P a hybrid price level applying to all sales of “things” for money. The implications of this usage were not made clearer by a general tendency to refer to T in this sense as “trade” and to P as the “general” price level. Even if there can be no analytical objection to this formulation, when an attempt is made to derive statistical values, especially from figures for bank debits, many problems arise. Even today little is known regarding the extent to which bank debits reflect “money to money” transactions, such as transfers of funds from one account to another of the same economic unit; while the inclusion of sales of not only current output but also such diverse things as stocks and bonds, urban and agricultural land, and second-hand cars and antique furniture—to mention only a few examples—makes it difficult either to calculate an appropriate price index for P or to attach any significance to the resulting level of T .

Although somewhat less easy to understand and therefore less generally known, the “cash balance” version of the quantity equation (especially as it was used at Cambridge University) and other examples of the income approach were more in line with recent developments.² This does not result from the cash balance equation itself—most simply written as M equals kPT where k equals $1/V$ —as the formulation is subject to the same problems and criticisms as the Fisher equation if the various terms

¹ If V is the use of M to buy T , T specific items sold for M , and P prices of T when sold for M , then the equation is valid because it is a truism. The charge that the equation was not valid arose because in some earlier presentations use had been made of such approximations as existing price indexes, which rendered the equation formally incorrect.

² For the derivations of these approaches, see A. W. Marget, *The Theory of Prices* (New York, 1938), pp. 302-343 and 414-458.

are given the same meaning. But the *emphasis* was on k defined as the relationship between people's money balances and their *incomes*, so that PT referred, not to the total value of monetary transactions, but to the total value of transactions in current output—in other words, the national income. This relationship seems clearly more significant for business cycle problems than Fisher's V .³

It was a combination of this shift in theoretical interest from the "transactions" to the more fruitful "income" version of the quantity equation and the availability of national income estimates that made substantial statistical progress possible during the 1930's, while the statistical work itself stimulated further analysis of the variables involved. Thus relatively full information regarding the behavior of the terms of the quantity equation did not become available until the controversy over the "quantity theory" as an explanation of prices had largely died down.⁴

Perhaps the best place to start a description of the statistical progress which took place is with the clarification—largely by Currie and Angell—of the concept of "money," which has come increasingly to mean currency outside the banking system (in the hands of the public) and demand deposits (deposits subject to check), including all government deposits but excluding all interbank deposits. Currie uses this meaning exclusively, while Angell also computes values for "total" money (including time and saving deposits) but lays greatest emphasis on money in the first sense, which he calls "circulating" money. Although the term may of course be applied to any of a number of concepts, it seems clear that this definition is most useful when our interest centers upon the primary function of money as a *means of payment* or upon the most "liquid" form that assets can take. The emergence, moreover, of large holdings by individuals of U. S. Savings Bonds, which are payable in a specific number of dollars on demand, has eliminated the claim of time and saving deposits to special consideration. This development, plus the general acceptance of the narrower meaning of money, has led to the development of a new concept of "liquid assets" to include money, time and saving deposits, and U. S. Bonds, although there is of course no sharp line between assets which are or are not "liquid" but rather an infinite series of gradations.⁵

³ This point is discussed further on pp. 323–324 below.

⁴ The volumes which contributed most to our understanding of the statistical magnitudes involved were L. Currie, *The Supply and Control of Money in the United States* (Cambridge, Mass., 1934); J. W. Angell, *The Behavior of Money* (New York, 1936); and *idem*, *Investment and Business Cycles* (New York, 1941). Much interesting work has also been done by the Board of Governors of the Federal Reserve System and the Federal Deposit Insurance Corporation, particularly through the periodic surveys of deposit ownership which are published in the *Federal Reserve Bulletin*.

⁵ Estimates of the distribution among various holders of "liquid assets" in this sense have been published periodically in the *Federal Reserve Bulletin* since 1945.

Probably the most striking fact to emerge from recent statistical studies is the constancy of income velocity before 1929 and the size of the apparently permanent decline since that date. Between 1899 and 1929 income velocity—the national income divided by money as defined above—ranged from 2.72 to 3.35, a variation of less than 25 per cent; yet during the same period income and money increased more than fivefold.⁶

INCOME VELOCITY AFTER 1929

Year	Money*	National Income†	Income Velocity
1929	27.33	87.4	3.20
1930	26.32	75.0	2.85
1931	24.44	58.9	2.41
1932	21.03	41.7	1.98
1933	20.53	39.6	1.93
1934	23.56	48.6	2.06
1935	26.88	56.8	2.11
1936	31.10	66.9	2.15
1937	31.75	73.6	2.32
1938	31.50	67.4	2.14
1939	35.05	72.5	2.07
1940	39.49	81.3	2.06
1941	46.27	103.8	2.24
1942	54.64	136.5	2.50
1943	79.90	168.3	2.11
1944	100.45	182.3	1.81
1945	118.53	182.8	1.54
1946	119.41	178.2	1.49
1947	109.80	202.6	1.85

* In billions. Through 1939 the estimates are from Angell, *loc. cit.* Thereafter the total used is the sum of "Currency outside banks," "Demand deposits adjusted," and "United States Government deposits" for the end of June as reported in the *Federal Reserve Bulletin*.

† In billions. All estimates are the revised national income series of the Department of Commerce.

After 1929 velocity declined rapidly to about 60 per cent of its pre-depression level; thereafter, except for the boom year of 1937, it did not exceed 70 per cent of its previous level until the war. During the war velocity first rose to 2.50 during the relatively tight credit conditions which marked the start of large-scale war finance in 1942—a level higher than in any year since 1930—and then declined to 1.50 as the money supply expanded during the later years of the war.⁷ Figures for the period since 1929 are given in the table above.

⁶ J. W. Angell, *Investment and Business Cycles*, pp. 337-338.

⁷ During 1947 a decrease of 8 per cent in the supply of money (as a result of the reduction in Government balances to very low levels) brought about a rapid rise in velocity to a level close to that of the 'thirties. It will be interesting to see how long this increase continues.

In addition to demonstrating the extent to which income velocity has declined, recent studies have clarified the factors influencing the maximum level of income velocity.⁸ Of basic importance are the intervals between successive payments during the circular flow of money from income recipients to producers and back to income recipients, the degree of overlapping of payment schedules (whether income received Friday is used to pay bills Saturday or vice versa), and the degree of business integration; the amount of friction in the payment-transfer mechanism also plays a role in the result. Because it is impossible to eliminate "financial" transactions adequately, it is possible to determine only approximately how many exchanges take place in the course of the circuit flow of an average dollar from income recipient to producer and back again, but it appears that, as we are presently organized, roughly ten dollars' worth of "unfinished" output is exchanged for every dollar's worth bought by income recipients.⁹

The significance of these studies lies not so much in the actual numerical estimates made as in their conclusion that at least minimum balances and maximum levels of income velocity are determined by relatively constant factors unlikely to change rapidly except under the impact of runaway inflations or drastic changes in payment practices or in the degree of business integration. It is true that at present and probably in the future actual balances will substantially exceed such *minimum* balances, which reduces the practical importance of this information. But the understanding of the monetary process that has been achieved is considerable, as can be seen by comparison with formulations in which the level of actual balances is taken as being determined by the quantity of "ready purchasing power" which people find it desirable "to keep by them."¹⁰ For such a quantity would appear to be capable of rapid variation in any direction, when in fact a reduction in balances below the minimum level is likely to be difficult to achieve except under unusual circumstances.

Finally, these statistical studies have made clear that stock market speculation can have a major effect on the level of exchange velocity without reducing the amount of money available for purchasing current output. Thus our broadest measure of exchange velocity indicates an in-

⁸ Most of the credit again belongs to Professor Angell; see especially his article on "The Components of Circular Velocity of Money," *Quarterly Journal of Economics*, February 1937, LI, pp. 224-272.

⁹ *Idem*, *The Behavior of Money*, p. 191. This includes "normal" financial transactions in which money is shifted between balances before being spent, but excludes transactions connected with the stock market and the like. Additional discussion will be found in H. H. Villard, *Deficit Spending and the National Income* (New York, 1941), p. 37, note.

¹⁰ See Alfred Marshall, *Money, Credit and Commerce* (London, 1923), p. 43 ff.

crease of 85 per cent from 1922 to 1929 at a time when income velocity was virtually constant. It was the distorting influence of changes of this sort—plus the difficulty of obtaining appropriate measures of the price level involved—which made the transactions version of the quantity equation so difficult to interpret.

To a major extent recent developments in monetary theory reflect the implications of these findings—especially the decline in income velocity. For up to 1930 the relative constancy of the relationship between money and income justified concentration on the factors determining the quantity of money—on monetary theory in the narrow sense which we employ. When changes in the quantity of money could be expected to have a broadly proportionate ultimate influence on incomes in either an upward or downward direction—despite year to year variations resulting from minor changes in velocity—it was natural to stress the importance of monetary changes, which appeared to be both strategic and controllable. Actually there probably still exists an upper limit to the expansion of the national money income that is possible with a given quantity of money; but, even if the limit is now somewhat lower than it was in the past, it seems highly probable that ever since 1929 the quantity of money in existence could have supported a level of income substantially higher than that which actually prevailed. Hence it is the factors determining the *use* of a stock of money more than adequate to meet current or prospective requirements that have become of primary importance in recent years.

Furthermore, right up to the war, our production was less than that permitted by our labor force and plant facilities. In other words, the quantity of current output offered for sale, instead of increasing slowly along a secular trend line, was subject to wide fluctuations from one year to the next—sometimes with little or no variation in prices. Hence theoretical analysis has increasingly concentrated on setting forth both the determinants of the flow of spending and the effect of the resulting spending on output and employment, rather than the changes which the quantity of money could be expected to have on the level of prices under conditions in which it could be assumed that income velocity would be relatively constant and output at about the highest level permitted by our labor force and plant facilities.

It should be made quite clear that the quantity equations are no less true for a period in which income velocity and output vary widely than for a period in which they are relatively constant; they are merely less useful. Although rarely if ever put forward in an unqualified form, the essence of the “quantity theory” was that a change in money could be

expected to have a proportionate effect on prices, which is only true when there are no changes in either velocity or output. For the quantity equations to be most useful, the conditions underlying the quantity theory must prevail. What is here suggested is that such conditions did in fact generally prevail before 1929—perhaps to a greater degree than was realized at the time. But when income velocity started to vary widely after 1929, so that the quantity approach could only state that income would be equal to the money supply multiplied by a variable of unknown magnitude, other tools were developed to determine the level of incomes, although the quantity equations of course remained not only formally valid but useful for various purposes, especially elementary instruction. In the same way, the fluctuations in output that have taken place in recent years have made it far more difficult to determine the effect of changes in spending on prices; but here, in contrast to the previous case, relatively little has been done in the way of developing alternative tools of analysis.

Keynes' *A Treatise on Money*¹¹ is especially interesting in this connection because it represents a transition from the monetary theory of the quantity equations to the modern theory of income, output, and employment. In view of the emphasis on saving and investment contained in the *Treatise*, it is easy to forget that its "Fundamental Equations" summarized the factors determining the *price levels* of consumption goods and output as a whole. Keynes started by distinguishing between the normal income of entrepreneurs—that "which, if they were open to make new bargains with all the factors of production at the currently prevailing rates of earnings, would leave them under no motive either to increase or to decrease their scale of operations"¹²—and their "windfall profits"—the difference between their actual receipts and their normal income. Defined in this fashion, windfall profits (positive or negative) become the difference between the actual level of the national income and that level which would be just sufficient to continue the current level of output at the current level of factor costs—which may appropriately be called the "equilibrium" level.

The broader and more important of the two Fundamental Equations, that determining the price level of output as a whole, was formulated by Keynes in the following fashion:

$$\Pi = \frac{E}{O} + \frac{I - S}{O}$$

¹¹ London, 1930.

¹² *Ibid.*, Vol. 1, p. 125.

where Π was the price level of output as a whole, E normal income excluding windfall profits, O the volume of output, I the value of the current production of investment goods, and S saving out of normal income. Further, the *Treatise* makes clear that, under these definitions, windfall profits are equal to $I - S$.¹³ Hence, as normal income plus windfall profits equals actual income, this equation in fact tells us that actual income divided by the volume of current output will give the price level of such output; or alternatively that the actual price level will differ from the "equilibrium" level by the excess of actual over "equilibrium" income divided by current output.

To state that the price level of current output is determined by the actual expenditure on such output (i.e., the actual national income) divided by the volume of such output clearly does not represent an improvement of the quantity equations; hence the *Treatise* equations in reality must (and will below) be judged in terms of their contribution to concepts of monetary equilibrium. In other words, the analysis of the *Treatise*, although cast in the form of quantity equations, in a broad way marks the end of the equations as tools of new theoretical analysis in both Great Britain and the United States. This of course does not mean that the quantity equations were never heard of after 1930. Analytical and statistical work like that already summarized was largely inspired by the equations, while their place in elementary texts remained relatively secure, because of the ease with which they imparted a preliminary understanding of monetary processes. But it seems fair to say that almost all new analytical work designed to explain the problems of the 'thirties represented a break from, rather than an evolution of, the quantity equation approach, and made little use of quantity equation concepts.

To this generalization there is a notable and outstanding exception. Professor Marget in his two-volume *The Theory of Prices*¹⁴ has sought both to defend the equations against the aspersions cast on them by advocates of the newer approach (particularly Keynes) and also to renovate the equations as tools of theoretical analysis, particularly the transactions equation in the form originally propounded by Professor Fisher. There can be no question of Marget's contribution to the history of doctrine or of the extent to which he has demonstrated the falsity of many Keynesian generalizations, even when the generalizations remain suggestive.¹⁵ But his contribution is considerably more than this; his painstaking discussion

¹³ *Ibid.*, p. 138.

¹⁴ New York, 1938 and 1942.

¹⁵ Keynes' suggestion that monetary and value theory have been inadequately integrated, for example, for me remains suggestive even after Marget has demonstrated that every economist since Aristotle applied the same methods of analysis to both fields.

of the equations themselves has added insight into problems that must be faced in any careful formulation of the terms involved. To give but one example, his analysis of possible discrepancies between "current output" and "goods sold" is undoubtedly definitive.¹⁶

Marget's plea for a return to the transactions type of equation, however, is less likely to be accepted. The fundamental issue is a perennial one in economics: workability vs. completeness. It is Marget's position that any formulation that does not include all possible types of money and all possible uses is less than complete. Hence he objects to income velocity on the ground that it is a "hybrid" concept; for income velocity is actually an *average* relationship between *all* balances and the national income, most balances being in fact held against the purchase of "unfinished" output rather than against the purchase of the "finished" goods and services whose value adds up to the national income. Any such average he rejects because it involves more than a simple relationship between cash balances and the specific outlay against which they are held, which is the only sort of relationship sufficiently definitive to be acceptable to him. Thus he would meet the criticism that the transaction version of the quantity equation has been relatively barren because it lumped various things together, the economic significance of which was quite diverse, by arguing for expansion of the formulation until each diverse item was treated separately.

Whatever the ultimate appeal of such a program, it seems to me that, in the present state of economics and probably also in the foreseeable future, all workable relationships and analyses are bound to be both incomplete and "hybrid" in the sense that they summarize complicated variables. The important thing is that the relationship chosen should be "strategic" and, if possible, relatively constant, in order to eliminate immediate need for the more complete analysis which we are not yet in a position to undertake. In fact, the very reason that the quantity equation was originally so analytically useful and has continued as such an important teaching aid is that it summarized all the manifold forces influencing prices into exactly three variables.¹⁷ Hence Marget's plea is not so much for what has been achieved by the transactions form of the quantity equation as it has been used, but for what might be achieved in the future if it were possible to break down the summary averages of the original

¹⁶ *Op. cit.*, Vol. I, p. 538 ff.

¹⁷ While progress in understanding our complex economic environment will undoubtedly require increasingly complicated analysis, most recent progress has taken the form of developing more "strategic" groupings of a quite small number of variables. This is true not only of the shift from the transactions to the income version of the quantity equation, but also of the evolution of Keynes' ideas from the *Treatise* to the *General Theory*.

equation into all the components necessary to deal with all separable price levels. One can, I believe, with all sincerity wish such an undertaking well and at the same time doubt both its probable achievements and the impact that it is likely to have on monetary theory in the immediate future.

The importance of not only monetary theory but also monetary policy declined in the latter half of the 1930's. For once a "reflation" such as was achieved by 1935 has been brought about, further increases in the money supply by Central Bank action alone are likely to lead to broadly compensating decreases in income velocity—at least over the range of increases which are possible without arousing insuperable political opposition; hence at such times monetary control devices are not likely to be of much aid in combating a depression. From the point of view of control, therefore, their main use would have been to prevent a boom from getting out of hand after the existing supply of excess or idle balances had been exhausted. Our failure to recover fully before the outbreak of the war meant that they did not have a chance to undertake this modest role, and now even this role is likely to have been reduced, if not largely eliminated, as a result of the repercussions which the use of such controls would entail on the debt structure which we have inherited from the war. As a result we face an urgent need at the present time to develop alternative methods of control; this problem will be more fully considered when our postwar heritage is discussed below.

III. MONETARY EQUILIBRIUM, PERIOD ANALYSIS, AND THE *General Theory*

As the extent to which the banking system could vary the money supply became clear, efforts had been made on the Continent, and especially in the Swedish literature, to formulate what would have occurred "naturally" or "normally" in the absence of monetary "disturbances." Keynes' *Treatise* was primarily responsible for drawing attention, in Great Britain and the United States, to the resulting concept of an "equilibrium" in which money would be "neutral" in its effects on the economy. Changes in money were thought of as being brought about by the rate of interest, which was either so low as to cause banks to create additional funds to be added to those in existence or so high as to induce people to pay off bank loans and in this way reduce the money supply. Wicksell's pioneer formulation ran in terms of discrepancies between the "market" or actual rate of interest and the "natural" rate, which he defined as that rate which would keep prices constant, as he was working at

a time when the major emphasis was on price stability.¹⁸ This meant that an increase in the money supply equal to the increase not only in population but also in productivity would be "natural" under the definition used. On the other hand, Hayek, following the Austrian tradition of studying the effects of the imposition of money on a completely "non-monetary" economy, defined the "natural" rate as that which would keep the effective quantity of money (money times velocity) constant, so that it would be "natural" for the price level of output to fall during periods of technological progress or when the supply of the productive factors was increasing. In other words, Hayek's definition meant that when there was no divergence between the two rates of interest, the level of the national money income would be constant. Finally, Keynes in the *Treatise*, as we have seen, defined "normal" income as that which provided just enough entrepreneurial income to maintain the present level of employment and output at present factor prices.

The fundamental common problem faced by all these analyses was to define "equilibrium"; in the main it was the difficulty of giving meaning to this concept that caused the whole approach to be abandoned. This is true even when the emotional connotations of "natural," "normal," or "neutral" are discarded and the problem is stated in terms of "equilibrium" without normative significance; and it also applies whether the mechanism of change is stated in terms of discrepancies between saving and investment or "market" and "natural" rates of interest.

For example, as the role of payment practices and the degree of business integration in determining income velocity became clearer, even a theoretical definition of a "natural" rate which would eliminate "monetary" disturbances when there were changes in these factors became increasingly difficult.¹⁹ For the distinction between "real" and "monetary" factors is a tenuous one at best. It was often argued that a release of money as a result of the reduction in money payments that follows from increased business integration should be offset if money was to remain "neutral"; but would not integration reduce exchange value even in a barter economy and therefore constitute a "real" rather than a "monetary" factor? Or should the release of money resulting from integration be offset only to the extent that it exceeded the decrease of exchange value that would have taken place in a barter regime?

It was the *Treatise* more than any other volume that brought the problem of equilibrium to a head and represented a crossroads in the develop-

¹⁸ Constant prices in this formulation also made saving equal to investment. For a summary of some of the other meanings given the "natural" rate by Wicksell, see A. W. Marget, *op. cit.*, Vol. I, pp. 201-204.

¹⁹ Cf. G. Haberler, *Prosperity and Depression*, 3rd ed. (Geneva, 1941), pp. 61-62.

ment of monetary theory.²⁰ For the fundamental distinction that Keynes made in the *Treatise* between "normal" income and "profits" premised the existence of a lag in the adjustment of factor contracts, entrepreneurial commitments, or both: if entrepreneurs revised their commitments or labor reopened its contracts just as soon as there was a change in income, then there could be no difference between "normal" income and "profits." In the *Treatise* Keynes showed little interest in this problem, except to argue that a sufficient lag did exist to make his distinction between actual and "normal" income worth while. As a result the *Treatise* was criticized both because of the ambiguity of its discussion of the lag involved and for the extent to which the time period in question could be expected to vary over the course of the business cycle. Against these criticisms there were two possible lines of defense: either the various factors influencing the revision of contracts could be examined, and explicit assumptions could be made regarding the time period in question; or a "timeless" analysis could be developed and the problem avoided in this fashion. In the first of these directions lies modern period analysis, with its explicit assumptions regarding lags and leads, the fixity of contracts, and similar factors; in the other, the instantaneous analysis of Keynes' *General Theory of Employment, Interest and Money*.²¹

It is too early to attempt any definitive appraisal of the relative fruitfulness of the two approaches, but it seems fair to say that round one has gone to the instantaneous approach. I should make clear that in judging "fruitfulness" I am laying major weight on the impact on public policy that has been or seems likely to be achieved before the economic system under study changes so drastically as to move the whole matter into the field of the economic historian. For however much the careful step-by-step procedure of period analysis commends itself as the only way to attain *complete* knowledge of the operation of our economic system, to date most examples can best be described as methodological explorations rather than positive contributions.²² The difficulties to be faced are formidable. Least important, perhaps, is the criticism leveled against the *Treatise* to the effect that entrepreneurs are always out of adjustment

²⁰ Chronologically Hayek follows the *Treatise*, but his methodological approach really belongs with the analyses of the preceding period.

²¹ London, 1936.

²² The best example of D. H. Robertson's work is his article in the *Economic Journal* (September 1933, XLIII) and the best summary of the Stockholm School is that of Bertil Ohlin, also in the *Economic Journal* (March and June 1937, XLVII). A possible exception to the generalization in the text and the outstanding example of sustained work along period analysis lines is J. R. Hicks' *Value and Capital* (Oxford, 1939), although, as the title suggested, the author is not mainly concerned with problems in the field of monetary and business cycle theory.

during a period of expansion or contraction.²³ Once the emphasis shifts away from "equilibrium" to period analysis, it becomes clear that lack of adjustment is to be expected. For it is the purpose of such analysis to show why the economy is out of balance, what is done about it, and what the consequences are.

Far more important is the fact that no satisfactory bridge has been built between a mechanical analysis in which income received in one period is disposed in the next and an expectational analysis in which emphasis is placed on the extent to which the expectations held at the start of the period are in fact realized during the period. The mechanical approach puts major emphasis on such things as the flow of funds through the economic system from producer to income recipient and back again and the expansion or contraction of output through successive intervals of time. It has the advantage of showing how various changes take place within the institutional framework of the particular economy; but, because it does not deal with expectations, it gives little light on many of the factors responsible for the changes involved. The expectational approach, on the other hand, just because it does not demonstrate in step-by-step fashion the way in which funds move through an economy or output changes, often finds itself dealing with expectations which are inevitably doomed to disappointment from the start, as they involve a change of output or a movement of funds faster than the institutional arrangements of the system permit.²⁴ As with Professor Marget, who in fact advocates a form of period analysis, one can wish period analysis every success and yet remain skeptical as to whether it will prove fruitful within the immediate future even for problems which the Keynesian approach has been least successful in handling.²⁵

In contrast to the complexities of period analysis, the approach of the *General Theory* attempts to explain changes in the level of economic activity by means of a handful of variables: the *quantity of money* and *liquidity preference* determine the rate of interest; the rate of interest and

²³ R. F. Harrod, *The Trade Cycle* (Oxford, 1936), p. 66.

²⁴ Hicks' analysis (*op. cit.*) again comes closest to meeting this problem, but the degree of simplification involved seems to me larger than can ultimately be accepted for monetary and business cycle theory. For income recipients at least, Robertson's analysis falls mainly in the first class, while most of the Swedish work falls in the second, although the line between the two approaches is not always sharp.

²⁵ Haberler in the course of an extended discussion of period analysis (*op. cit.*, pp. 177-195) suggests that the mechanical and expectational approaches are likely to come together because the concept of expectations regarding uses of future income raises so many difficulties that the time period at issue may be shortened until the expectations are related to income actually realized in some past period—in other words, to Robertson's "disposable" income. If this in fact is to be the bridge between the two approaches, then the doubts expressed regarding fruitfulness seem confirmed, because so short a period would eliminate much of the content of the expectational approach.

the *marginal efficiency of capital* determine the level of investment; and the level of investment and the *marginal propensity to consume* determine income, output, and employment. In his enthusiasm for explaining "dynamic" changes in the simplest possible terms Keynes is sometimes reminiscent of the quantity theorist in believing that his analysis explains rather more than it actually does. In the marginal propensity to consume and the multiplier, for example, Keynes wanted and thought he had a largely constant factor which would permit us to say that "when there is an increment of aggregate investment, income *will* increase by an amount which is [the multiplier] times the increment of investment"²⁶—just as a quantity theorist would say that, when there is an increase in money, income will increase by an amount which is income velocity times the increase in money.

If it were true that the propensity to consume were relatively constant, Keynes would of course be correct in taking investment as the major variable, just as the quantity theorist took money when changes in income velocity were small. In the *General Theory* considerable space was devoted to arguing that the propensity reflected a stable psychological law which applied over wide ranges of income and broad periods of time.²⁷ But the stability of the propensity has been widely questioned in theoretical discussion.²⁸ Moreover, the statistical attempts to verify the stability of the consumption function have run into serious difficulties; the main source of error in the predictions of postwar income and employment made toward the end of the war was apparently the result of inadequate estimates of the possible level of consumption, which in turn appear to have been caused by overestimates of the stability of the consumption function.²⁹

²⁶ *General Theory*, p. 115. My italics. The multiplier is equal to one divided by one minus the propensity to consume.

²⁷ The notation of Keynes reflects his belief in the constancy of the "marginal" propensity to consume by making it equal to what I would think should be described as the "average" propensity to consume. Thus he writes $\Delta Y_w = k \Delta I_w$, where $1 - \frac{1}{k} = \frac{dC_w}{dY_w}$.

(*General Theory*, p. 115); but this can only be true if $\frac{\Delta C_w}{\Delta Y_w} = \frac{dC_w}{dY_w}$. Hence if $\frac{\Delta C_w}{\Delta Y_w}$ represents the "average" propensity to consume for the change in income ΔY_w , Keynes is in fact assuming that the "marginal" and "average" propensity are the same—or alternatively that the "marginal" propensity is constant—over the range of income ΔY_w .

²⁸ B. Ohlin, "Some Notes on the Stockholm Theory of Savings and Investment," *Economic Journal*, June 1937, XLVII, pp. 221–240; D. Robertson, "A Survey of Modern Monetary Controversy," *The Manchester School*, 1938, pp. 133–153; and G. Haberler, *op. cit.*, pp. 222–232, are among the critics of the alleged stability. For further references, see below, p. 329, note 30.

²⁹ See W. Woytinsky, "What Was Wrong in Forecasts of Postwar Depression," *Journal of Political Economy*, April 1947, LV, pp. 142–151, and references there cited.

Certainly much of the appeal of the Keynesian approach lay in the stability of the multiplier which Keynes premised. For the idea that, once investment was given, saving, income, and employment would all fall into line through the operation of a (more or less) uniquely determined multiplier gave a certain grandeur to the analysis, which made it appear capable of explaining a wide variety of situations and therefore quite "dynamic" in character. When it is realized that the marginal multiplier (for small changes in investment), the average multiplier (for appreciable changes), and the total multiplier (for investment as a whole) may have substantially different values, the analysis comes to be seen as considerably more limited and pedestrian in its scope and therefore more "static" in character. But the set of relationships which Keynes set forth—even if some of the components are less constant than he cared to admit—will certainly have a continuing impact on economic thinking because the variables he related to one another are of fundamental importance to any understanding of the problems with which he was concerned.

Any more complete attempt to appraise the full impact of the Keynesian approach, even if it were as yet possible to do so, would take us beyond the confines of this paper. But it is perhaps worth while to conclude by pointing out that all that has been said regarding the alternative approaches can be rephrased in terms of the saving-investment controversy. For it was the failure to keep factor contracts and entrepreneurial commitments up to date which was responsible for the difference in the *Treatise* between actual and "normal" income and therefore between saving and investment. Saving was confined to the income involved in the contracts and commitments made at the start of the "period," while investment was related to the income actually realized at the end of the "period," which could, of course, be more or less than that involved at the start. As a result a major factor determining the size of the discrepancy between saving and investment was the speed with which contracts and commitments were revised—the slower the revision the larger the discrepancy. Had the "period analysis" character of the difference between saving and investment in the *Treatise* been more fully recognized, it is possible that the advent of the *General Theory* would not have been marked by the extended and largely fruitless controversy as to whether saving and investment are equal or unequal.³⁰

What the *General Theory* did in effect was to stress that *during any period* saving was equal to *spending on investment*. (This follows because saving was defined as income less consumption, and income is

³⁰ Sixteen of the major articles on this subject are cited in H. H. Villard, *op. cit.*, p. 28, note.

equal to spending on total output and consumption to spending on consumption; hence by subtraction saving is equal to spending on investment.) The main reason that this caused so much difficulty was that most economists have instinctively thought as consumers, who received income in the present period and then elected whether or not to spend it in a future period.³¹ Hence most economists have typically—and frequently unconsciously—meant by saving the difference between the income of the present period and the consumption of a future period—a difference which might either be held idle or invested in the future period. In contrast, Keynes emphasized relationships *within a single period*, stressing that the income of any given period would not have been received unless an identical amount of spending on consumption and investment had taken place.³² What caused so much misunderstanding and difficulty was the mental adjustment involved in not pursuing the usual more or less instinctive time sequence but instead identifying saving with the *simultaneous* spending on investment which gave rise to the income of the present period, rather than with the spending which might or might not take place *in a future period*.

What Keynes succeeded in doing was to make clear that discrepancies between saving and investment, at least in the *ex post* meanings given the terms before the *General Theory*, depended on implicit or explicit period analysis. For when saving was thought of as income which was “hoarded” rather than spent on consumption, what must have been referred to was income of a period different from that in which the “hoarding” was thought of as taking place; for if the money involved has been “hoarded” in the sense of not being spent on output in the present period, then it would not have been part of present income.³³ That it was desirable to make clear the “period analysis” character of all *ex post* differences between saving and investment is obvious. Yet in appraising the over-all effect of the way in which this matter was pre-

³¹ The definition given by Keynes added to the confusion. For he defined saving as “the excess of income over consumption” (*General Theory*, p. 62). While actually the “excess” in any period—for the economy as a whole but not necessarily for every individual within the economy—is always identical with spending on investment during the period, the casual reader is likely to think of it as a sum which could be “hoarded.”

³² This does not deny that what happened in one period may influence what happens in a subsequent period, nor does it imply that the amount spent during a given period must “come out of” the income of that period, as this depends on the *length* of the period. If the period is so short that there is no time for any money to be spent more than once, then *all* the spending of the period will “come out of” previously unused cash balances and total income will be less than cash balances; if, however, the period is long enough, money may be spent often enough for total income to be a multiple of average cash balances.

³³ This is, of course, true only for the economy as a whole, as the “hoarding” of one individual may be offset by the “disharding” of another.

sented in the *General Theory*, I think it fair to say that it greatly impeded progress in economic thinking—and this despite the fact that the *General Theory* as a whole certainly made the greatest contribution to our ultimate understanding of economic fluctuations of any volume published in the decade of the 'thirties. For it was a paradox of Keynes' greatness that he treated what was a minor clarification of concept as a great new discovery, thereby completely confounding his less nimble-witted colleagues—though it is only fair to admit that Keynes' disciples were frequently *plus royalistes que le roi*. The resulting years of controversy were only ended by the war; their effect was not only to divert much effort of economists into "translating" Keynes into more conventional terms but also to present to the layman the spectacle of a science deeply divided. It is perhaps the ultimate irony of his career that Keynes, with his intense interest in practical programs to reduce business fluctuations, should have contributed so much to the failure of American economists as a group either to develop an agreed program for mitigating the business cycle or to carry any appreciable weight in public decisions on matters of economic policy.

IV. LIQUIDITY PREFERENCE AND INTEREST

During recent years Keynes' *General Theory* represents the outstanding development in interest theory, so that it is appropriate to start with a consideration of that volume. It is the contention of the *General Theory* that the rate of interest is entirely determined by two factors: the supply of money and liquidity preference; in other words, liquidity preference is a function which relates the money supply to the rate of interest. Keynes argues that people have three reasons for desiring "liquidity": the transactions-motive, the precautionary-motive, and the speculative-motive. The first of these is the familiar concept of balances needed to bridge the gap, for both business and income-recipients, between receipts and expenditures connected with current output;³⁴ the second is "to provide for contingencies requiring sudden expenditure and for unforeseen opportunities of advantageous purchases" and is thought of as varying with the level of income;³⁵ and the third is to secure "profit from

³⁴ To the more usual formulation Keynes added the need for funds "due to the time-lag between the inception and the execution of the entrepreneurs' decisions," which he called the demand for "finance." See "Mr. Keynes and Finance: Comment," *Economic Journal*, June 1938, XLVIII, p. 319. The fundamental structure of the Keynesian analysis is unaffected by this addition, which is simply another factor adding to the demand for transaction (and probably also precautionary) balances.

³⁵ *General Theory*, p. 196. The distinction between precautionary and speculative balances has always seemed to me finely drawn.

knowing better than the market what the future will bring forth"—in other words, from the expectation that money will decline in value less than other assets.³⁶ In short, as Keynes uses them, transaction and precautionary balances are "active" balances held in connection with the production of current income and speculative balances are "idle" balances held on capital account. Note that it is all these balances which are related to the interest rate by liquidity preference; hence "liquidity preference," as Keynes uses the term, covers considerably more than a speculative desire to hold assets in liquid form because it is thought that illiquid assets are likely to depreciate in value.³⁷

As with so much of Keynes' work, an appreciable part of the novelty of his treatment of interest arises from either terminological innovations or unusual assumptions. Take, for example, the fact that in Keynes' formulation changes in the desire to save appear not to have any effect on the interest rate. Keynes tells us that economists have generally assumed "that, *ceteris paribus*, a decrease in spending will tend to lower the rate of interest and an increase in investment to raise it. But if what these two quantities determine is, not the rate of interest, but the aggregate volume of employment, then our outlook on the mechanism of the economic system will be profoundly changed. A decreased readiness to spend will be looked on in a quite different light if, instead of being regarded as a factor which will, *ceteris paribus*, increase investment, it is seen as a factor which will, *ceteris paribus*, diminish employment."³⁸ To what extent is this a real and not merely an apparent contrast with the usual formulation, in which changes in the "readiness to spend"—or in saving in a non-Keynesian sense—are thought of as having an important influence on the rate of interest?

Actually Keynes' startling conclusion that "a decreased readiness to spend" will diminish employment rather than increase investment follows directly from the fact that he *includes* liquidity preference within the *ceteris paribus* assumption; in other words, he assumes that liquidity preference is unaltered despite a "decreased readiness to spend." But this is another way of saying that the individual wishes to hold idle the money he was previously ready to spend; for if the quantity of money and liquidity preference (and therefore the rate of interest) are unchanged, then a decrease in spending can only mean that the funds involved have been shifted from transaction and precautionary balances

³⁶ *Ibid.*, p. 170.

³⁷ Haberler suggests that the relationship between speculative balances and the rate of interest be called "liquidity preference proper" to distinguish it from the relationship between all balances and the rate of interest (*op. cit.*, p. 210).

³⁸ *General Theory*, p. 185.

to speculative balances.³⁹ Under these circumstances investment need not increase and employment as a result will fall. But there is no reason why liquidity preference must remain unchanged, and when it is removed from *ceteris paribus*, quite different results from those which Keynes indicates are possible. For the money freed by the "decreased readiness to spend" may well decrease the individual's liquidity preference, which in turn can be expected to reduce the rate of interest and increase investment, exactly as in the more conventional formulations.⁴⁰ Had Keynes said that when an individual saves in order to "hoard," the social effects are quite different than when an individual saves in order to invest, his meaning would have been clearer but his statement less startling.

Of course, the concept of "hoarding" is not a part of the Keynesian system. This is understandable because the instantaneous approach of the *General Theory* avoids so far as possible specific reference to time periods, while "hoarding" in its usual meaning must have a time dimension. For "hoarding" which is timeless becomes identical with holding money; accordingly, as all money must be held by someone at all times if it is to be counted as money, it becomes correct to say that all money is "hoarded" and that changes in "hoarding" from one period to the next are the same thing as changes in the quantity of money. From this it follows that "it is impossible for the actual amount of hoarding to change as a result of decisions on the part of the public, so long as we mean by 'hoarding' the actual holding of cash. For the amount of hoarding must be equal to the quantity of money . . . ; and the quantity of money is not determined by the public."⁴¹ Here again is a startling result based on an unusual meaning for a common term; but in this case the usage on which the result depended was reasonably clear.

What have these changes and innovations contributed to interest theory? The pervading emphasis which Keynes has laid on the dependence of saving and interest on the level of income has been of great importance. The "classical" theory of saving and interest had been most concerned with long-run problems in which it seemed appropriate to take the level of income as more or less fixed and to investigate the forces determining the amount of such income which would be saved and

³⁹ Following Haberler's suggestion, the situation is one in which "liquidity preference proper" has increased sufficiently to absorb the money freed by the "decreased readiness to spend."

⁴⁰ Again following Haberler, if there is no change in the individual's "liquidity preference proper," the money freed by the "decreased desire to spend" can be expected to act on the rate of interest and the level of investment in the same way as any decrease in over-all liquidity preference.

⁴¹ *General Theory*, p. 174.

invested. Keynes was by no means the first person to indicate that saving and interest were influenced by the level of income and much of his criticism of "classical" theory, if it was meant to apply to all the work of all his predecessors and not to those "real capital" theorists who were primarily concerned with long-run equilibrium, can only be characterized as overly exuberant. In fact, Keynes himself came to agree that he was "shying at a composite Aunt Sally of uncertain age."⁴² But exuberance aside, Keynes clearly deserves credit for emphasizing the extent to which an increase in investment, working through an increase in income, could be expected to provide an offsetting quantity of saving. In part this emphasis was the result of the definitional identity between saving and investment; but back of this lay the real fact that large changes in saving and investment were possible with little change in the level of interest if accompanied by large changes in income. In fact it is quite possible that the start of an upturn will bring such a release of speculative (idle) balances that at least the early periods of recovery may be accompanied by a lower rate of interest than that which had previously prevailed.

In addition to his emphasis on changes in income, Keynes' most important contribution has been the insight which he has given us on the behavior of speculative balances, both in general and especially as a result of changing anticipations regarding the rate of interest. Applied to perpetual bonds, which present the simplest as well as the most extreme case, Keynes points out that it is impossible for the rate anticipated a year hence to exceed the current rate by more than the square of the current rate.⁴³ For otherwise it would be more profitable to hold money than bonds, as the reduction in the capital value of such securities during the year as a result of the rise in the interest rate would be greater than the sum received as interest. Of course most bonds are not perpetual, so that rate increases in excess of the square of the current rate can be anticipated without causing a complete shift into idle balances. But clearly whenever appreciable rate increases are anticipated the effectiveness of monetary policy is greatly reduced, and recovery is likely to be slow even if vigorous action is taken by the monetary authorities. For when the recession phase has come to an end and prices of securities are high and yields low as a result of a reflationary "cheap money" policy, a time may come when any further expansion of the money supply will flow overwhelmingly into idle (speculative) balances because investors

⁴² "The 'Ex-Ante' Theory of the Rate of Interest," *Economic Journal*, December 1937, XLVII, p. 663.

⁴³ *General Theory*, p. 202. If the current rate is 3 per cent, the anticipated rate cannot be more than 3.09 per cent.

generally believe that the present low level of the interest rate will not be maintained.⁴⁴

In appraising the probable importance in actual practice of such a situation, Keynes himself has repudiated the extreme possibility that *all* additional funds will flow into idle balances, stating that while this "might become practically important in future, I know of no example of it hitherto. Indeed, owing to the unwillingness of most monetary authorities to deal boldly in debts of long term, there has not been much opportunity for a test."⁴⁵ Yet it is by assuming implicitly or explicitly what is in effect an "absolute liquidity preference" under which the demand for idle (speculative) balances is insatiable, that Keynes achieves his most striking differences from other theorists. In appraising his contribution one has again to weigh the real insight that he has given us against the confusion that has resulted from his perennial inclination to treat an unusual, and therefore startling, situation as if it applied generally—in short, to make a "general theory" of a special case.

Much of the credit for clarifying the issues raised by liquidity preference belongs to J. R. Hicks, whose *Value and Capital*, appearing just before the war turned economists' minds to other things, marked the end in Great Britain of the controversies raised by the *General Theory*. Hicks agrees with Keynes and most other modern interest theorists that the determination of the rate of interest is not adequately explained by "real capital" theories relating to "real" economies. But, while stressing in the Walrasian tradition that the interest rate can only be determined in relation to other prices, he finds it a matter of convenience whether the rate is treated as "determined" by the demand and supply of loan funds or of money.⁴⁶ The first treatment he suggests is most useful when attention is to be focused on the difficulties which result from the fact that "the" rate of interest is in fact a complex of rates, while the second serves to stress the closeness of the connection between the demand for money and interest rates—a matter stressed not only by Keynes but also by Hicks himself.⁴⁷

Hicks' contribution, of course, is far broader than a clarification of

⁴⁴ Of course, if the expectation of rising rates is not realized, it will in time give way; hence Keynes' analysis applies fundamentally to cyclical problems. It also implies sizable rationality on the part of those holding balances, which is hardly completely correct. Thus during the war period individual holdings of *currency* increased faster than their holdings of deposits and much faster than the money holdings of business as a whole. Those holding actual cash—for the quite complicated reasons that they do hold cash—are obviously acting from different motives than those which Keynes has indicated.

⁴⁵ *General Theory*, p. 207.

⁴⁶ *Op. cit.*, Ch. XII, especially pp. 160-162.

⁴⁷ *Ibid.*, pp. 237-239.

controversy, representing an outstanding reformulation of theory. In the case of interest, he suggests that the fundamental explanation grows out of the fact that money has "general acceptability" while other securities (in the broadest possible sense) do not; in other words, money is the most perfect type of security and interest a measure of the imperfect "moneyness" of other securities. "The nature of money and the nature of interest are therefore very nearly the same problem. When we have decided what it is which makes people give more for those securities which are reckoned as money than for those securities which are not, we shall have discovered also why interest is paid."⁴⁸ In the *General Theory*, besides the obvious risk of default, we have seen that Keynes placed great stress on the risk of future changes in interest rates. Hicks believes that this is an incomplete formulation and that interest cannot be explained by risk-premiums alone. For even if there is no risk of default or of changes in interest rates, there would remain: (1) the cost of converting money into securities (i.e., investment costs); and (2) the cost of "rediscounting" the security if money comes to be desired before the security matures (i.e., possible disinvestment costs). Hence the interest rate in equilibrium must be high enough to cover these costs for the marginal lender, as well as risks of rate changes and default.⁴⁹

As to relative interest rates, Hicks feels that no serious problems arise; for the actual span of rates from long to short can either be explained "in terms of expectations about the future course of the short rate" or alternatively "in terms of expectations about the future course of the long rate."⁵⁰ While this may be adequate for the relatively rational inhabitants of the simplified models with which Hicks is dealing, it is not of much aid in explaining the complexities of the actual behavior of the numerous interest rates found in the real world. By far the greatest amount of factual information on actual rate behavior over a long period of time is contained in Frederick R. Macaulay's study for the National Bureau.⁵¹ Series starting before the Civil War are presented for call money and commercial paper rates, for railroad bond yields, and for railroad stock prices, as well as much information on such related financial series as bank clearings and commodity prices. Despite the wealth of material presented, however, the study, as its title indicates, is fundamentally concerned with the problems which arise when an attempt is made to

⁴⁸ *Ibid.*, p. 163.

⁴⁹ *Ibid.*, Ch. XIII.

⁵⁰ *Ibid.*, p. 152.

⁵¹ *Some Theoretical Problems Suggested by the Movements of Interest Rates, Bond Yields and Stock Prices in the United States Since 1856* (New York, 1938). See also David Durand, *Basic Yields of Corporate Bonds, 1900-1942* (New York, 1942).

find some order in the array of rates. Macaulay concludes that "statistical examination reveals that the relations (between long- and short-term rates) as they actually occur show a definite tendency to run *counter* to these theoretical rationalistic expectations" based on "complete knowledge of the pertinent facts and logical use of such knowledge."⁵² In what is perhaps his most interesting contribution, he explains this result by the extent of irrationality in the real world, the chief cause of which "is the inability of human beings to foresee the future, let alone adjust the present to it."⁵³ Certainly the facts that are presented and the difficulties in interpreting them that Macaulay poses make it clear that the behavior of relative interest rates is still to be fully explained.

V. WAR FINANCE

By far the most difficult period in which to appraise fairly the role of monetary economics is during the war. First of all, many economists were in the government service, where their contributions were buried in unpublished memoranda; hence it should be remembered that the somewhat critical remarks which follow are made on the basis of the work of those who remained able to publish. Secondly, my basis of judgment is not confined to monetary matters narrowly conceived, but I know of no way of appraising policy in regard to the numerous monetary problems raised by a modern war except in terms of the contribution that is made to winning the war. In short, I propose to appraise, with the qualifications indicated and the benefits of hindsight, the contributions of monetary economics to the war mobilization. My conclusion is that the record is not one of which economists can be proud. The remainder of this section sets forth the reasons for this judgment.

Total war requires the largest possible expansion of the labor force (including those in the armed services), the greatest possible increase in hours worked, and the quickest possible transfer of labor from peacetime to wartime production. In the United States, from early in 1940 to the wartime peak, hours worked in all manufacturing industry increased 20 per cent, the total labor force increased 25 per cent (of which perhaps a quarter was the result of the normal growth of the population), and employment (excluding relief but including the armed forces) increased 45 per cent. Hence, if the hours worked elsewhere rose as much as in the manufacturing industry, at the peak we expanded our employed labor resources (including the armed forces) by almost 75 per

⁵² *Op. cit.*, p. 3; italics in original; parenthesis supplied.

⁵³ *Ibid.*, p. 20.

cent of the prewar level. Even the labor force increase appears to have surpassed that of Germany and equaled that of Great Britain, as the percentage of our population in the labor force by the end of the war was comparable to the similar British figure throughout the year, and actually exceeded it during our seasonal peaks of employment.⁵⁴ But both Germany and Britain relied heavily upon labor compulsion in comparison with our overwhelming use of monetary incentives; yet the use of monetary incentives did not cost us excessively in comparison with Britain, as the British cost of living between 1939 and 1945 rose almost exactly the same amount as ours.

This mobilization of our resources was accomplished by arrangements which J. K. Galbraith has called the "disequilibrium system."⁵⁵ In essence this system brings about a divergence between income and "spending" in the sense of expenditure on consumption, which is another way of saying that it brings about a large volume of saving. The purpose of this saving is to supplement—by an amount highly important at the margin—the monetary incentives which would be provided by income alone if income were restricted to permissible expenditure on consumption plus voluntary saving. The system must of course be operated in such a way as to preserve the public's faith in the future value of money, in order to make sure that the large volume of saving continues to have an incentive value. As long as it is operated in this way, it seems clear that it will provide considerably more monetary incentives than either an "equilibrium" system or an uncontrolled inflation.⁵⁶ The only alternative would seem to be greater reliance on non-monetary incentives, which must in the main involve compulsion.

In the United States the divergence between income and spending was, to a major extent, the result of adequately effective price control. There are of course other possibilities; either some variant of the Kalecki plan, involving control over total spending, or some type of forced saving could have been used. But I suspect that the incentive to earn additional income was greater under price control than under either alternative. For the Kalecki plan would have placed a legal limitation

⁵⁴ Both the growth in the American population and the sharp seasonal fluctuations in the labor force make comparisons difficult; the estimates presented in the text make no allowance for seasonal changes and should therefore not be compared directly with those for other countries.

⁵⁵ "The Disequilibrium System," *American Economic Review*, June 1947, XXXVII, pp. 287-302.

⁵⁶ Galbraith suggested (*ibid.*, p. 293, note) that the system he described might be called a "forced equilibrium" but prefers "disequilibrium" as shorter and more suggestive. I think "controlled disequilibrium" is more descriptive, in order to give us a phrase—"uncontrolled disequilibrium"—to characterize an unrestrained inflation.

on the dollars that could be spent and a forced saving plan would have compelled workers to take part of their earnings in bonds redeemable only after the war. Under price control, on the other hand, the failure to spend was entirely *voluntary*—the result of the goods people wanted not being available. Hence I believe that workers would in all probability work harder under price control, if only because they knew that they *could*, if they wanted to, “blow” their earnings *at once* on something. Moreover, as some price control and rationing of especially scarce goods was inevitable, the greater administrative ease with which price control could be extended until it became widespread was a point in its favor compared with control of spending or forced saving, which must be on a broad basis from the start.

In the United States the operation of the economy in such a way as to preserve the public's faith in the future value of money (and therefore of savings fixed in terms of money) appears to me to have involved only a postwar problem. For the large increase in money during the war *did not in fact* undermine people's confidence in their savings *during the war itself*.⁵⁷ Just what weight should be given to the postwar effects of different methods of war finance in a total war is not easy to determine. Obviously most people would prefer victory with a postwar financial problem to defeat; but it is equally obvious that the large holdings of liquid assets which accumulate under a “disequilibrium system” make it undesirable to scrap controls and raise wages substantially immediately after the end of the war. That this need not be done is amply demonstrated by Great Britain, whose cost of living was in 1947 at about the same level as at the end of the war. Moreover, it should be remembered that a smaller increase of money during the war would have had little effect in holding down postwar spending unless stabilization of the wartime pattern of interest rates on government bonds was abandoned after the war.⁵⁸ But the reader should be warned that economists who discount the extent to which maximum incentives were needed during the war, who feel that practical politics will bring about a quick abandonment of wartime controls after the war, and above all who be-

⁵⁷ Put more technically, this amounts to saying that the wartime “margin of tolerance” was not exceeded. Maximization of the effectiveness of a “disequilibrium system” would involve, among other things, a comparison of the incentive to further expansion of the labor force provided by higher unspent incomes with the resulting pressure on current and postwar prices. The fact that the labor force was expanding (allowing for seasonal factors) right up to V-E Day without undue pressure on *current* prices seems to me to indicate that whether the system was carried too far depends on the effects on *postwar* prices that can be attributed to it. Whether it was not carried far enough need not be considered.

⁵⁸ This point is elaborated in the final section on our postwar heritage.

lieve in the importance of rehabilitating monetary controls, will be critical of the "disequilibrium system" because of the postwar problems created by the large holdings of liquid assets to which such a system gives rise.

If this analysis of the system which permitted our effective war mobilization has been broadly correct, it seems to me appropriate to judge the publications of economists during the period in which the system was being constructed by their contribution to its erection.⁶⁰ Broadly, I think it is fair to say that much of the advice given hindered completion of the system and therefore our mobilization for war. Economic literature at the start was overwhelmingly concerned with the prevention of inflation, so that it was not until relatively late in the war that the difficulties and limitations of an all-out anti-inflationary program began to be considered. In the main this concentration on inflation apparently resulted partly from an unawareness of the magnitude of the potential expansion of our labor resources or of the required shifts within the labor force and partly from general doubt regarding the efficacy of price controls, especially in the absence of widespread rationing.

The general literature is largely devoid of attempts to determine the probable expansion of the labor force and employment during the war—to say nothing of output, which presented a much more difficult problem because of its changing composition.⁶¹ It is true, of course, that estimates of future income underlay all estimates of the "inflationary gap"; but those using the "gap" immediately focused on the effect of spending the estimated income on the diminishing supply of consumption goods, rather than on the real factors involved. Thus we find that J. P. Wernette, writing in September 1941 "as though the country were actually engaged in a serious war," urged that, if perfection was impossible, the "government should lean toward over use of non-expansionist financial methods," as "everyone agrees that taxes should be heavy enough to avoid inflation."⁶¹ Again William Fellner, writing in early 1942, believed that a tax program to bridge the gap would mean an effective rate of 30 per cent on the income of those with incomes of \$3,000, 40 per cent of \$4,000 incomes, 50 per cent of \$5,000 incomes, and 90 per cent of \$20,000 incomes, which could be expected to eliminate individual savings; yet there is no discus-

⁶⁰ I am acutely aware of the problem of criticism based on hindsight; but if the prescriptions of economists were wrong even for reasons which seemed excellent at the time, we must face the fact that the economic advice given was undesirable.

⁶¹ What one would have liked would have been something, however crude, comparable to E. E. Hagen and N. B. Kirkpatrick's "The National Output at Full Employment in 1950," *American Economic Review*, September 1944, XXXIV, pp. 472-500.

⁶² "Financing the Defense Program," *American Economic Review*, December 1941, XXXI, pp. 755, 761, 763.

sion of the effects on production of this level of taxation.⁶² When one adds the work of the Iowa State group led by A. G. Hart,⁶³ the estimates of Shoup, Friedman, and Mack,⁶⁴ and the general interest in the "inflationary gap," as well as the discussion of the spending tax—to cite but a few outstanding examples—it seems clear that the emphasis was heavily on "stabilization."

Certainly the "inflationary gap" was the most important analytical tool developed during the period, if judged only by the number of alternative meanings that were spawned. Perhaps its most generally accepted meaning was what has been called the "consumer expenditure gap"—the difference between what consumers would like to spend on consumption and the value, at a specified price level, of the goods and services estimated to be available. But the "total expenditure gap," the "disposable consumer income gap," and the "tax gap" were also distinguished, as well as whether the "gap" was "total" or "primary."⁶⁵ In general, interest in the gap diminished before any general agreement on definitions was reached; certainly there was little statistical contribution in the published literature, as events moved too rapidly.⁶⁶ Looking back on the history of the concept, I venture to predict that far more work in clarifying the meaning of the "gap"—especially in relating the required taxes (or deficits) to the desired effect on the national income—will have to be done before the high hopes of future usefulness held at the time will be justified.

The failure to relate monetary policy to the possible expansion of the labor force was matched by a lack of interest in the required shifts within the labor force; yet these shifts raised serious implications for any stabilization program. For the use of monetary incentives necessarily

⁶² "War Finance and Inflation," *American Economic Review*, June 1942, XXXII, pp. 246, 248, 251.

⁶³ *Paying for Defense* (Philadelphia, 1941).

⁶⁴ *Taxing to Prevent Inflation: Techniques for Estimating Revenue Requirements* (New York, 1943).

⁶⁵ See W. A. Salant, "The Inflationary Gap," and M. Friedman, "Discussion of the Inflationary Gap," *American Economic Review*, June 1942, XXXII, pp. 308-320.

⁶⁶ The important volume of Shoup, Friedman, and Mack did not appear until the summer of 1943, though its estimates were for the amount of taxes needed in June 1942. This book is probably the most important to emerge from the discussion of the "gap," though its concepts are somewhat different from the more widely used estimates of the Office of Price Administration. Clark Warburton's "Monetary Expansion and the Inflationary Gap," *American Economic Review*, June 1944, XXXIV, pp. 303-327, appeared even later and involved a new meaning of the "gap" which made it equal to the change in money holdings of individuals and business enterprises. Most "gaps" are *ex ante* in character, as *ex post* we identify what consumers wanted to spend during any period with actual value of goods and services purchased during the period; but Warburton's "gap" of course has both an *ex ante* and an *ex post* aspect, and may be negative as well as positive.

involves an increase in average incomes, unless one is prepared to set up differentials in favor of war industries by *cutting* wages in existing employment—which seems sufficiently detrimental to morale to be unacceptable during a major war even assuming it to be administratively feasible. To take an arbitrary example, if a third of the working force were to be shifted and it was felt that a 50 per cent average differential (including overtime and the like) was necessary, an average increase in labor incomes of 17 per cent would result. Yet one of the earliest pleas for stabilization of prices states that “monetary stabilization must be supplemented by a labor policy which assures that particular wages *will not rise* while there exists an ‘excess supply’ of that grade of labor, and that wages *will rise* when a ‘shortage’ of that grade of labor exists.”⁶⁷ There was apparently no recognition that this sort of wage policy, if the shifts involved were of any size, would be inconsistent with the program of price stabilization that was advocated.

It was not until early in 1943 that a careful analysis was presented by Friedman of the continuing importance of the role of income in organizing resources during wartime and of the desirability, in contrast to peacetime, of divorcing spending on consumption from the receipt of income.⁶⁸ Such a divorce could be achieved by taxation of incomes, forced savings, or a tax on spending—the last being the alternative chosen by Friedman. At the same time Shoup discussed at length the effect of various types of taxation (particularly the income tax) on the supply of effort and therefore the volume of output.⁶⁹ The net effect of these contributions was to favor the use of the spendings tax as part of the fiscal program, as a result of explicit recognition of the limitations of income taxation because of its effect on incentives.

The spendings tax was an American version of the Kalecki plan.⁷⁰ Kalecki had proposed that everyone be issued a quantity of coupons for purchases in retail stores, but in this form the plan involved both administrative difficulties and problems of equity. The spendings tax represented an alternative method of controlling total spending and in this way preserving the flexibility of the price system.⁷¹ Whatever its

⁶⁷ G. L. Bach, “Rearmament, Recovery, and Monetary Policy,” *American Economic Review*, March 1941, XXXI, p. 32. My italics.

⁶⁸ “The Spendings Tax as a Wartime Fiscal Measure,” *American Economic Review*, March 1943, XXXIII, pp. 50-62.

⁶⁹ “Problems in War Finance,” *American Economic Review*, March 1943, XXXIII, pp. 74-97.

⁷⁰ *General Rationing*, Bull., Institute of Statistics (Oxford, England), January 11, 1941, Vol. 3, No. 1.

⁷¹ The standard arguments for the superior economy of a price system were usually offered; but such arguments really apply to long-run adjustments and wartime problems are short-run in character. As economic theory tells us little about the process of adjust-

theoretical merits—and I believe that the importance and extent of economic flexibility can easily be overstated in wartime⁷²—there can be no doubt that the spendings tax would itself have raised serious problems of equity and administration. Perhaps the most serious of the former would have been the treatment of housing expenditure—the home owner vs. the rich renter whose contractual rent is in excess of his entire permissible spending. Even K. E. Poole, though he concludes that the plan is administratively workable, admits that “the administration of the spendings tax would apparently have to be substantially better than that of an income-capital gains tax of approximately equal efficiency.”⁷³ Hence it is understandable that Congress did not show much enthusiasm for the proposal.

Advocates of the spending tax did not feel that any extended evaluation of price control and rationing as an alternative method of limiting spending was necessary. Wallis stated simply that “specific controls, such as price ceilings and rationing . . . cannot control inflation,”⁷⁴ and Fellner argued that “price control and rationing are inadequate substitutes for anti-inflationary fiscal policies. Direct controls can be expected to forestall inflation only if the pressure against which they have to operate is held within rather narrow limits.”⁷⁵ This is not surprising, as those in charge of price control themselves had grave doubts as to the potency of the weapon they were using; the Statement of Considerations accompanying the General Maximum Price Regulation, according to Galbraith, “carried a heart-felt warning that it would not work unless strong steps were taken to restore and maintain equilibrium at the then ruling

ment, it also has little to say regarding the short-run wastes involved in reaching adjustment. Hence the applicability of the usual arguments to wartime problems is not clear. A similar point in criticism of the Kalecki plan was made by R. E. Holben, “General Expenditure Rationing with Particular Reference to the Kalecki Plan,” *American Economic Review*, September 1942, XXXII, pp. 513-523, who also opposed closing the gap “during the present transition stage” (p. 522) of the war economy.

⁷² Thus W. A. Wallis, an early advocate of the spendings tax, argued that the “possibilities of substitution quickly convert what would otherwise be an acute specific shortage into a mild general shortage” in “How to Ration Consumers’ Goods and Control Their Prices,” *American Economic Review*, September 1942, XXXII, p. 511. It seems to me that “quickly” refers to periods longer than the war itself!

⁷³ “Problems of Administration and Equity under a Spending Tax,” *American Economic Review*, March 1943, XXXIII, pp. 63-73. As proposed, it would have been necessary for those with capital to show that all assets sold were balanced by assets purchased. It seems to me that the possibilities for evasion on the part of those possessing capital, and especially those engaged in small businesses, would be sufficient to make the tax politically unacceptable, especially when it was known that it would almost certainly be in effect for too short a time for efficient administration to develop and when Poole admits that hoarded cash and anticipatory buying would inevitably make the tax inequitable for “the first year or two” (p. 67).

⁷⁴ *Op. cit.*, p. 502.

⁷⁵ *Op. cit.*, p. 235.

prices."⁷⁶ Yet, despite the widespread doubts of economists and most of the standard texts, price control, *even without extensive formal rationing*, proved unexpectedly effective as a device for limiting spending. But as price control alone takes a relatively small administrative staff, the program was less wasteful of manpower than had been feared. Further, for a short period and with a large second-hand market, the inequity of "bare-shelf rationing" (resulting from goods not being available) also turned out to be bearable.⁷⁷ Hence the method of limiting spending so as to control inflation which economists, by and large, would have been the last to recommend was not only the one used, but was used with outstanding success.

Compared with previous wars, perhaps the most remarkable thing about the recent war was the lack of interest in, or discussion of, methods of raising the money to meet war expenses. This is because the technical problem of ensuring that the government had the dollars it needed when it needed them presented no difficulty. We understood how to provide smoothly, through an expansion of bank deposits (and therefore currency), the sums which were not raised by taxation or voluntary saving and we did not delude ourselves into believing that individual borrowing secured by government bonds was less inflationary than an equivalent credit extension by outright purchase.

There are, of course, many who feel that the banks should not have been allowed to absorb as much of the increase in the debt as they actually did, or that the "pattern of rates" on government securities should not have been stabilized at the levels actually selected. But it is not clear that a change in the amount taken by the banks or the pattern of rates used would have had any appreciable effect on our ability to wage war. Hence these matters raise in the main the important question of the controls to be used in the postwar period, which will be discussed in the following section. The only probable objection to this generalization is likely to be that a higher rate of interest during the war might have decreased spending and increased voluntary saving.⁷⁸ But the Savings Bond program generally and the Savings Bonds themselves

⁷⁶ *Op. cit.*, p. 290, note.

⁷⁷ As impersonal (highly competitive) markets are the exception rather than the rule, business usually distributed short supplies of goods reasonably equitably to maintain distributive channels and trade relations. In fact, it is likely that many of the advantages of a spending tax would be lost because business would not have allocated goods where demand was greatest (even at the expense of maximum wartime profits) for fear of the "inequitable" treatment of its distributors that would be involved!

⁷⁸ Whether people could have been induced to hold more government bonds and less bank deposits is again a postwar problem; for during the war the holders of the balances were induced over all to keep them idle, and an idle balance has no more effect than an equal amount of government bonds.

represented relatively generous treatment for most saving likely to have resulted from a voluntary reduction in spending. Until we know more about the effect of interest on savings, I doubt whether there is much more that can be said in appraisal of the program actually pursued.⁷⁹

VI. THE POSTWAR HERITAGE

By the end of the 1930's it had become quite clear that monetary policy (in the sense here used) could not by itself promote recovery. But I think it would have been fairly generally agreed that there remained for monetary policy an important role in setting the scene for recovery and in ensuring that the subsequent prosperity did not become inflationary. The government debt which we inherited from the war, however, has drastically restricted the ability of the Federal Reserve System to move against inflation.⁸⁰ Of the present gross federal debt totaling \$260 billion roughly \$100 billion, or 40 per cent, is held by commercial banks and the Federal Reserve System. The normal statement of the problem facing the Federal Reserve System is that, so long as the banks continue to hold such a large amount of securities, they will be able to obtain whatever reserves they wish by selling securities to the Reserve banks, thus causing a multiple expansion of the money supply. I think this statement obscures the fundamental issue. Even if the banking system held no federal bonds whatsoever so that all open-market purchases or sales were from the general public, attempts to control the general credit situation, either by open-market operations or changes in reserve ratios, would inevitably lead to unacceptable repercussions on the government bond market; in other words, the problem would be the same as it now is. Hence the essence of the situation is that control has been taken from the Reserve System, not by the bond holdings of the banks, but by the decision to stabilize the price of government bonds and therefore the general structure of interest rates.

Before discussing the desirability of this decision it is worth making clear that the banking system could be shielded relatively easily from the effects of changes in the rate of interest—or, if one prefers it the other way round, the Reserve System could be shielded from the effects of bank holdings of government bonds. A rash of proposals has been put forward

⁷⁹ Cf. Seymour E. Harris, "A One Per Cent War?" *American Economic Review*, September 1945, XXXV, pp. 667-671.

⁸⁰ The debt inherited from the war has also restricted to a lesser extent the ability of the System to bring about easier credit conditions, because of the resulting capital gains on government bonds.

to achieve this end;⁸¹ but the simplest to understand, as well as in all probability the most effective, would involve giving the Reserve System the power: (1) to raise member bank reserve requirements to any level; (2) to pay interest on member bank reserve balances; and (3) to lower as much as is necessary its own Gold Certificate reserve requirements against Federal Reserve notes and deposits.⁸² With these powers the Reserve System would be able to acquire most bonds now held by the banks by extensive open-market operations offset by increased reserve requirements to levels between 60 and 75 per cent; the loss of earnings on government bonds could be offset, to whatever extent desirable, by the interest paid on the reserve balances which the banks would have acquired. In this way the banking system would be rendered almost completely impervious to changes in the price of government securities, and the ratio of capital to assets other than reserve balances raised to a higher level than it has been in decades.⁸³

While these changes could be made relatively easily,⁸⁴ they are almost

⁸¹ Originally proposed by L. H. Seltzer to deal with the prewar problem of excess reserves, the idea has recently been advocated not only by Seltzer, "A Uniform Treasury Certificate as Bank Reserve," *Commercial and Financial Chronicle*, February 28, 1946, pp. 1087, 1116-1117, but also by the Committee for Economic Development, *Jobs and Markets* (New York, 1946); S. E. Leland, "The Government, the Banks and the National Debt," *Commercial and Financial Chronicle*, January 17, 1946, pp. 242, 281-284; and R. I. Robinson, "Monetary Aspects of Public Debt Policy," *Postwar Economic Studies*, No. 3, Board of Governors of the Federal Reserve System (Washington, 1946). As originally proposed, the banks would have been required to hold some sort of special government security; but the possible variations are almost endless. All security reserve proposals involve serious administrative complexities because two types of reserves would have to be adjusted every time deposits shifted between banks. After considerable study I am convinced that the proposal summarized in the text is simpler to understand, as well as more effective, than any alternative. For this reason I have concentrated on it rather than undertake an extended discussion of a somewhat specialized subject.

⁸² If it was proposed to save the Treasury money—i.e., pay less interest on reserve balances than was received on government securities purchased—arrangements would have to be made, to the extent that the matter is not already covered in the recent Reserve-Treasury agreement regarding excess earnings, for the Reserve System to return whatever difference there was to the Treasury.

⁸³ Two problems would remain: the plan could not be applied as outlined above to non-member banks and transitional arrangements would have to be made for the few surviving banks—largely concentrated in the Dallas District of the Reserve System—which still have the major portion of their assets in forms other than government securities.

⁸⁴ Judging from the economic, not the political point of view. The fact that this variant would give the Reserve System the power to determine the interest to be paid on reserve balances—and therefore the general level of bank earnings—insures widespread bank opposition; it might be necessary to guarantee a fixed return on reserve balances by giving banks a "certificate of deposit" bearing a rate of interest fixed contractually for a term of years. Doubt regarding the chances of political action has also been expressed in strong terms by Allan Sproul, President of the New York Reserve Bank, "Monetary Management and Credit Control," *American Economic Review*, June 1947, XXXVII, p. 346. It is also worth noting that freeing of interest rates would require a modification of various government loan and loan-insurance plans, such as those applying to residential mortgages.

certainly not worth making unless it is planned to use changes in interest rates as a control device.⁸⁵ Apart from variations in interest rates it is true that the reserve proposal outlined would aid in checking the multiple expansion of deposits which results when banks "play the pattern of rates" by selling short-term securities to the Reserve System in order to buy long-term issues from the market. During the war we undertook to stabilize a "pattern of rates" which was based on and adjusted to the prewar degree of rate instability; hence this pattern can continue without support only so long as banks think it will not continue. If they become increasingly convinced of its permanence, the low end of the pattern will increasingly require support at a time when securities at the high end may be above par. In other words, when a particular pattern is chosen, support (and therefore expansion) is called for whenever *any portion* of the pattern starts to fall below par, not the pattern *as a whole*. If most short-term securities were transferred from the banks to the Reserve System in line with the reserve balance proposal outlined above, in effect the System could adjust its holdings in such a way as to conform with the pattern that it was committed to maintain, so that intervention would only be necessary when the pattern as a whole required support. But the importance of such a change would depend upon the extent of the divergence between the market pattern and the pattern chosen for stabilization, as weakness at the low end would have to be balanced by strength at the high end if the pattern as a whole was not to require support. At present, however, the high end is exhibiting so little strength that almost nothing would be achieved from not being obliged to support the low end *if* it were necessary to support the pattern as a whole. Hence the interest-bearing reserve plan, or any other variant of the security reserve proposals, does not seem worth the candle unless interest rate changes are to be resurrected as a control device.

Should this be done? Despite the great theoretical interest in the rate of interest up to the war there has been increasing doubt as to whether the practical importance of interest changes was commensurate with its place in theory. Just before the war a group of Oxford economists interviewed business men regarding the effect of the interest rate on their business decisions and concluded: "The majority deny that their activities have been, or are likely to be, directly affected in any way by changes in interest rates. Of those who take the view that they might sometimes be affected, few suggest that the influence is an important one."⁸⁶ The same

⁸⁵ Use of interest rates as a control device of course involves not only changes in rediscount rates but also open market operations and the like, which change rates by changing the availability of credit.

⁸⁶ H. D. Henderson, "The Significance of the Rate of Interest," *Oxford Economic Papers*, No. 1, October 1938, p. 9.

problem has been examined by Professor F. A. Lutz; he concludes that changes "will not affect" decisions regarding inventories, are "not likely to influence investment decisions in manufacturing industry," under certain circumstances "may affect investment decisions in the area of public utilities (including railroads) and residential construction," and under certain circumstances would also affect "the readiness of financial institutions to grant credit or to float bonds and stocks, so that the interest rate may influence the volume of investment even without changing the profit calculations of entrepreneurs."⁸⁷ While the last two categories are of major importance in capital formation, the limited circumstances in which they are influenced by interest rate changes make it clear that the weapon is a less powerful one than we had thought in the past. But should we nonetheless seek to use it, even if we know that it is likely to turn out to be a weak reed?

From the factual point of view we are really asking whether the tail should be allowed to wag the dog. For total private debt is only perhaps one-third of all debt. This means that any permanent rise in the rate of interest will ultimately increase the cost of perhaps 80 per cent of all debt—with the resulting adverse effects on income distribution—in order to affect decisions involving 20 per cent. It is true that during certain phases of the business cycle the percentage of the annual changes in the debt (and therefore of the current offsets to saving) influenced by changes in the rate of interest may be considerably greater than 20 per cent; the extent to which this is likely to be the case will of course depend on the future fiscal policy of the Federal Government. But the ultimate cost in adverse effects on income distribution is obviously far greater than when the Federal Government was a minor debtor, adjusting itself to policy determined with other considerations in mind. Further, there is also an increasing belief that the amount saved out of current income (in Keynesian terminology, the marginal propensity to consume) is quite insensitive to changes in the rate of interest, so that consumer spending can far better be influenced by direct control over instalment credit and the like rather than through general changes in the level of interest rates. Even the extent to which people utilize their existing liquid asset holdings is not likely to be much influenced by interest rate changes.

Nor are the secondary effects of interest rate changes likely to be large.⁸⁸ The actual pattern of bond holdings casts doubt on whether small

⁸⁷ "The Interest Rate and Investment in a Dynamic Economy," *American Economic Review*, December 1945, XXXV, p. 830.

⁸⁸ By far the most comprehensive discussion of this problem is that of L. H. Seltzer, "Is a Rise in Interest Rates Desirable or Inevitable?" *American Economic Review*, December 1945, XXXV, pp. 831-850, who suggested most of the points made in the text.

increases would prevent holders from selling their securities to the banks (and thus hold down bank expansion); and there is not much more reason to believe that such increases would "mop up" idle balances, or that such balances would remain "mopped up" even if a temporary shift was brought about. On the other hand, large increases in the rate of interest might well be dangerous. Not only would there be the possibility that the decline in the price of government securities would be interpreted as a breakdown in government credit, but in the short run bank capital would be endangered and in the long run bank earnings would be unacceptably large—unless in both cases some variant of the interest-bearing reserve balances plan had previously been put into effect.

Perhaps the best argument for reinstating monetary controls is that we have so few others. Seltzer, after rejecting interest rate changes, could only name budgetary policy, Savings Bond campaigns, and control over margin and consumer credit, concluding that the problem of control over inflation was still unsolved.⁸⁹ Since then control over consumer credit has been dropped; only "jawbone control" by the Council of Economic Advisers has been added. Of course this situation holds no terror for the confirmed believer in secular stagnation. As monetary controls since the middle of the 1930's have, in any event, been merely potentially important in checking a boom, their loss will not disturb anyone convinced that booms have disappeared.

Nor does this terrify the advocate of "functional finance," who is quite willing to rely almost exclusively on budgetary policy.⁹⁰ After the level of government expenditure had been decided by balancing the social utility of additional government expenditure against additional private expenditure at roughly the full employment level of income, the extent of taxation would be entirely determined by the need to contract or expand the national income so as to keep it at the level required for full employment—let the debt fall where it may. Theoretically there is much to be said for this approach; certainly it has helped to clarify our understanding of the underlying issues. But its terminology is well calculated to scare the daylight out of Congressmen, who must be prevailed upon to put it into effect!

Even conservative use of budget policy, unadorned by the trapping of "functional finance," has made little progress. There is no inclination to delegate even limited control over taxation to the executive; yet without some such delegation—unless similar power be given to a Congressional committee—rapid action cannot be expected. On the expenditure side—

⁸⁹ *Ibid.*, pp. 846–847.

⁹⁰ A. P. Lerner, *Economics of Control* (New York, 1944).

assuming that increased expenditure would be part of conservative budget policy—there is also little that has been done in the way of advanced planning. Perhaps most fundamental of all, there is meager general understanding of the probability of a major business cycle or of the magnitudes that would be involved with our present level of national income. True, the inauguration of the Council of Economic Advisers may in time help notably. But it seems fair to say that the present period is woefully lacking in devices for control of the level of economic activity. It is on the ground that any weapon is better than none when the arsenal is almost empty that the advocate of the re-establishment of the use of monetary controls can base his case at the present time.

The weakness of the case for a reinstatement of monetary controls involves a further decline in the importance of monetary theory in general and interest rates as a control device in particular. This in turn has stimulated work on other aspects of the interest rate as well as different types of controls.⁹¹ One aspect much in need of further investigation is what *does* determine where investment is undertaken, and therefore the way in which capital is allocated. The extent of the tendency of business men to confine new investment to lines similar to those in which they are already engaged particularly needs investigation. Another important problem is the role played by the risk element. The difficulties that small business experiences in obtaining long-term capital may result from a reluctance on the part of the lender to appear to “gouge” the borrower by charging a rate sufficient to cover the actual risks involved, while the borrower may be unwilling to pay, not because the rate would be burdensome, but because it would reflect on his credit standing! It has long been pointed out that part of the control over credit exercised by commercial banks was through changes in the freedom with which funds were made available at constant rates of interest. A similar situation probably prevails among other lenders as well. It is probable that much future research will deal with the organization and functioning of particular credit markets, and especially with the non-price elements involved. Already such markets as those for consumer credit, residential mortgages, and stock market funds have been singled out for special stimulation or control, and the trend is likely to continue.

Another area where further research is needed is in regard to the management of the present volume of government debt. While much has appeared regarding the debt, it has usually been from the point of view

⁹¹ See H. C. Wallich, “The Changing Significance of the Interest Rate,” *American Economic Review*, December 1946, XXXVI, pp. 761-787; and *idem*, “Debt Management as an Instrument of Economic Policy,” *ibid.*, June 1946, XXXVI, pp. 292-310.

of the restraints exercised by the debt on monetary or fiscal policy. What we need to know is how to manage the structure and composition of the debt in such a way as to reinforce monetary and fiscal policy; particularly what we do not want is to have debt management determined predominantly by technical considerations—to be “for the sake of the debt.” Although developed to combat inflation during the war, the Savings Bond program probably represents the most outstanding innovation in our debt structure. With close to one-fifth of the total federal debt in this form, an important stabilizing influence on economic activity is likely to emerge if, as seems likely, people expand their holdings during periods of prosperity and redeem their securities to maintain their consumption during periods of depression. The general precedent set in connection with Savings Bonds—and also in the opposite direction in regard to eligibility for bank purchase—might be extended to other separable groups. The argument that present levels of interest unduly burden institutions such as savings banks, insurance companies, and corporations not operating for profit has recently been met by the issuance of special securities limited to such investors. When knowledge has been accumulated about the effects of these and similar changes, it should be possible to design a policy of debt management which would give maximum aid to both economic stabilization and the achievement of other objectives of economic policy.