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MR. KEYNES ON THE CAUSES OF UNEMPLOYMENT[1]

The indebtedness of economists to Mr. Keynes has been greatly increased by this latest addition to his series of brilliant, original, and provocative books, whose contribution to our enlightenment will prove, I am sure, to have been even greater in the long than in the short run. This book deals with almost everything, but the causes of and the future prospects of unemployment, cyclical and secular, are its central theme. It brings much new light, but its display of dialectical skill is so overwhelming that it will have probably more persuasive power than it deserves, and a concentration on the points where I think I can detect defects in the argument, tho it would be unfair if presented as an appraisal of the merits of the book as a whole, may be more useful than would a catalogue — which would have to be long to be complete — of its points of outstanding intellectual achievement.

Written tho it is by a stylist of the first order, the book is not easy to read, to master, or to appraise. An extremely wide range of problems, none of them simple ones, are dealt with in an unnecessarily small number of pages. Had the book been made longer, the time required for reading it with a fair degree of understanding would have been shorter, for the argument often proceeds at breakneck speed and repeated rereadings are necessary before it can be grasped. The book, moreover, breaks with traditional modes of approach to its problems at a number of points — at the greatest possible number of points, one suspects — and no old term for an old concept is used when a new one can be coined, and if old terms are used new meanings are generally assigned to them. The definitions provided, moreover, are sometimes of unbelievable complexity. The old-fashioned economist must, therefore, struggle not only with new ideas and new methods

1. John Maynard Keynes, The General Theory of Employment Interest and Money, Macmillan and Co., London, 1936.

of manipulating them, but also with a new language. There is ample reward, however, for the expenditure of time and attention necessary for even partial mastery of the argument.

1. "Involuntary" Unemployment

Mr. Keynes claims that the "classical"[2] economists recognized the possibility only of "frictional" and of "voluntary" unemployment, and that a vitally important chapter of economic theory remains to be written about a third class of unemployment, for which there was no place in the "classical" scheme of things, namely, "involuntary" unemployment. The concept of "frictional" unemployment relates to the inevitable loss of time between jobs, and presents no difficulties. "Voluntary" unemployment is defined as the unemployment "due to the refusal or inability of a unit of labor . . . to accept a reward corresponding to the value of the product attributable to its marginal productivity," but is used in such manner as to require the addition to this definition of the proviso that the money wage offered must not be below what the laborer regards as a proper minimum rate of *money* wages. If laborers refuse available employment at a money rate below this minimum, or if employed laborers refuse to permit a prevailing money rate to be lowered and unemployment results for themselves or for others from this refusal, Keynes would apparently regard it as "involuntary" unemployment, but deny its possibility or probability. He defines "involuntary" unemployment as follows: "Men are involuntarily unemployed if, in the event of a small rise in the price of wage-goods relatively to the money wage, both the aggregate supply of labor willing to work for the current money-wage and the aggregate demand for it at that wage would be greater than the existing volume of employment." (p. 15). What he seems to mean by this is that any unemployment which would disappear if real wages were to be reduced by a rise in the prices of wage-goods, money wages remaining the same or rising in less proportion, *but not falling,*

2. Used by him to mean the later economists, such as J. S. Mill, Marshall, Edgeworth, Pigou, who in the main were adherents of the Ricardian tradition; a usage which I shall follow here.

would be involuntary. It is with "involuntary" unemployment so understood, its causes and its remedies, that Keynes' analysis of unemployment is primarily—and almost solely—concerned.

In Keynes' classification of unemployment by its causes, unemployment due to downward-rigidity of money-wages, which for the "classical" economists was the chief type of cyclical unemployment and the only important type of secular or persistent unemployment, therefore finds no place. As will be seen later, it is excluded on the ground that resistance to reductions in money wage-rates generally does not involve a reduction in the volume of employment and is, if anything, favorable to employment rather than the reverse. The omission charged against the "classical" economists is their failure to note the lesser resistance of labor to reductions in real wages if unassociated with reductions in money wages *per se*, and their failure to recognize the existence of a large volume of unemployment for which the former is an available and practicable remedy, but not the latter. Keynes' reasoning points obviously to the superiority of inflationary remedies for unemployment over money-wage reductions. In a world organized in accordance with Keynes' specifications there would be a constant race between the printing press and the business agents of the trade unions, with the problem of unemployment largely solved if the printing press could maintain a constant lead and if only volume of employment, irrespective of quality, is considered important.

The only clash here between Keynes' position and the orthodox one is in his denial that reduction of money wage rates is a remedy for unemployment. Keynes even follows the classical doctrine too closely when he concedes that "with a given organization, equipment and technique, real wages and the volume of output (and hence of employment) are uniquely correlated, so that, in general, an increase in employment can only occur to the accompaniment of a decline in the rate of real wages" (p. 17). This conclusion results from too unqualified an application of law-of-diminishing-returns analysis, and needs to be modified for cyclical unemployment, as well as for the possibility that the prices of wage-goods and of other goods may have divergent movements. If a plant geared to work at say 80 per cent of rated capacity is being operated at say only 30 per cent, both the per capita and the marginal output of labor may well be lower at the low rate of operations than at the higher rate, the law of diminishing returns notwithstanding. There is the further empirical consideration that if employers operate in their wage policy in accordance with marginal cost analysis, it is done only imperfectly and unconsciously, and the level of wages they can be persuaded to establish is strongly influenced by the profitability of their operations as a whole, and not solely — if at all — by calculations of the marginal contributions of labor to output.

Keynes uses the term "full employment" to signify the absence of any involuntary unemployment (p. 16). He describes it also as the condition which would prevail "when output has risen to a level at which the marginal return from a representative unit of the factors of production has fallen to the minimum figure at which a quantity of the factors sufficient to produce this output is available" (p. 303). There are implied here several questionable propositions. The concept of diminishing marginal productivity is generally used in economics in a partial differential sense to indicate the diminishing increments of output which would result when some particular factor or group of factors was being increased, the remainder of the working combination being held constant. If all the factors are being increased simultaneously and in uniform proportions, it requires some such assumption as that of the general prevalence of external technical diseconomies from increased production if it is to be accepted that output and return per compound unit of the factors must be negatively correlated. There is also implied here the assumption that any increase in real wages (money wages remaining constant, or rising) will result in an increase in the amount of labor available. If, as widely-held opinion since the seventeenth century has maintained, and as Professor Paul Douglas's recent investigations for urban labor in the

United States appear to confirm, the supply schedule of labor with respect to real wages is, for part of its range at least, negatively inclined, the volume of employment could conceivably be much greater when there was "involuntary" unemployment than when there was "full" employment, and Keynes' conditions of "full" employment might be met at an indefinite number of levels of employment.

"Full" employment rarely occurs, according to Keynes, and the main immediate responsibility for the persistence of "involuntary" unemployment lies with the persistence of interest rates at levels too high to induce employers to bid for all the labor available at the prevailing money rates of wages. An elaborate and strikingly novel analysis of the causes determining the level of interest rates leads to the conclusion that high "liquidity-preferences" of savers, an excessive disposition to save and a low marginal productivity of investment are responsible for the absence of such a relation between the rates at which savers are willing to lend and the rates at which entrepreneurs are willing to borrow for investment as would result in an approximation to "full" employment.

Mr. Keynes claims further: (1) that there can be "full" employment only when entrepreneurs make investments sufficient to absorb any excess of income paid-out by entrepreneurs over expenditures on consumption by income-recipients; (2) that the amount of investment entrepreneurs are prepared to make, or their "investment demand for capital," is governed by the relation of their anticipations as to the yield of additional investment, or what Keynes calls the "marginal efficiency of capital"[3] to the interest rates at which funds can be borrowed; (3) that the amount which income-recipients are willing to spend of their current income, or their "propensity to consume," a function primarily of the amount of their incomes,[4] determines the quantity of saving;

3. "*Anticipated* marginal efficiency of capital" would seem to me a more accurately descriptive label for the concept.

4. It is, in my opinion, probably dependent appreciably also on anticipations as to the prospective trend of income, and is surely affected significantly by amount of accumulated wealth at current valuations as

and (4) the rate of interest is determined by (*a*) "liquidity preferences" and (*b*) the quantity of cash available to satisfy such preferences. The quantity of cash is generally assumed to be a constant. I accept most of this as valid in its general outlines, but I am unable to accept some of Keynes' account of how these "propensities" operate in practice or his appraisal of their relative strength.

2. The Propensity to Hoard

Keynes maintains that for centuries back the propensity to save has been so much stronger than the inducement to invest as to create a substantial barrier to "full" investment. He finds fault with the "classical" economists for their alleged neglect of the gulf between the desire to save and the desire to invest, i.e., for their neglect of "liquidity preferences." It was a shortcoming of the Ricardian wing of the classical school that in the face of strong criticism they steadfastly adhered to their position that hoarding was so abnormal a phenomenon as not to constitute a significant contributing factor to unemployment even during a period of severe deflation. In static equilibrium analysis, in which perfect price flexibility is assumed and monetary changes are abstracted from, there is no occasion for consideration of hoarding. In modern monetary theory it is generally dealt with, with results which in kind are substantially identical with Keynes', as a factor operating to reduce the "velocity" of money. There has been, I believe, common agreement among economists that when price-rigidities are important hoarding could present a serious and continuing problem, and that it is always a significant factor in the downward phase of a short business cycle. Keynes, however, attaches great importance to it as a barrier to "full" employment at almost all times, and apparently irrespective of the degree of flexibility of prices.

There are several reasons why "liquidity preferences" loom so large to Keynes as a source of trouble in the economic process. He takes it for granted that they are ordinarily so

well as by current income. See *infra*, §4, for further comments on this point.

strong for the average person in control of liquid resources that a substantial interest rate is required to overcome them; and apparently that they cannot be overcome by *any* rate of interest if a still higher rate of interest is anticipated in the near future. He assigns to them the rôle of sole determinant (given the amount of cash available, which he treats ordinarily as a constant) of the rate of interest. He believes that the marginal productivity function of capital and therefore the investment demand for capital have little elasticity. Finally he assumes in general that nothing can satisfy liquidity preferences except that "cash" whose quantity is one of the determinants of the interest rate.

We have almost no reliable information about the strength of liquidity preferences under varying circumstances, and in the absence of statistical information of a genuinely relevant character discussion must be based largely on conjecture. Nevertheless I venture to present a series of considerations which, in the aggregate, seem to warrant the conclusion that Keynes has grossly exaggerated the extent to which liquidity preferences have operated in the past and are likely to operate in the future as a barrier to "full" employment.

(*a*) Keynes stresses the pressure which is exercised by the expectation of a rise in the interest rate on potential purchasers of securities, leading them to postpone their purchases in order to escape a capital loss. There are, however, in every country large numbers of investors who have been taught to buy gilt-edge securities on the basis of their yield to maturity and to disregard the fluctuations in their day-to-day market values. Even investors of a speculative type are ordinarily as anxious not to miss a "low" as not to buy too high. There are many opportunities for investment which are — or seem at the time to be — of the "now-or-never" type. There is a widely-prevalent aversion to the waste of "dead" cash.

(*b*) Keynes seems to exaggerate the actuarial valuation of postponement of investment during a period of anticipated rise in interest rates. Rising interest rates are frequently associated with periods of greater confidence in the security of the investment, as far as payment of principal and interest according to schedule are concerned; or in the case of equity securities, with periods of more favorable anticipations of long-run yields. Hence periods of rising interest rates are often associated with periods of rising rather than falling prices of securities, especially for equity securities. Keynes seems to be in error also when he asserts that, abstracting from the risk of default on principal or interest, it will be equally profitable to hoard as to invest at par in a long-term security paying 4 per cent if the market interest rate is rising by 0.16 per cent per annum. In the first place, hoarding and investment in a long-term security are not the only alternatives. Let it be provisionally granted that hoarding and the purchase at par of a 4 per cent long-term bond would prove equally profitable at the end of the first year if the interest rate during that year had risen by 0.16 per cent. The purchase at the beginning of the year of a one-year maturity security paying anything over 0.16 per cent would then have been more profitable even if it had to be exchanged for cash within six months, and even if the short-term interest rate were also gradually rising by as much as 0.16 per cent per annum. Secondly, even a purchaser of the long-term 4 per cent security would have been richer at the end of the first year than if he had hoarded his cash, unless the security were a *perpetual* bond.

(*c*) Even if it be granted that liquidity-preferences are as strong ordinarily as Keynes indicates, their operation as a barrier to investment would necessarily be important only if it be assumed (1) that liquidity-preferences can be satisfied solely by the holding of non-investment assets, and (2) that the quantity of such assets does not automatically respond to the demand for them. Keynes takes care of this second qualification by his assumption that the quantity of money — in the assumed absence of a positive central monetary control — is constant. Here, indeed, he concedes more than is necessary, for if liquidity preferences are assumed to be stronger during depressions than during periods of business expansion, then the quantity of money, under such monetary systems as have existed in the past, varies inversely with the strength of liquidity preferences. But he does not give adequate consideration to the first qualification.

The satisfaction of liquidity preference on the one hand and of investment on the other, are opposite phenomena only if the range of assets which can satisfy investment demand corresponds with the range of assets which can satisfy liquidity-preferences, so that it shall be impossible to satisfy both by the same transaction. If liquidity-preferences can be satisfied by the holding of resources which are not identical with the "money" whose surrender satisfies investment demand, the satisfaction of the former does not necessarily entail failure to satisfy the latter. Keynes explains liquidity-preference as a wish to retain one's resources in the form of money. There is no systematic examination of what is to be included as "money" for this purpose, but incidentally to his analysis of one particular form of surrender of liquidity, namely, exchange of money for a debt, he states:

> . . . we can draw the line between "money" and "debts" at whatever point is most convenient for handling a particular problem. For example, we can treat as *money* any command over general purchasing power which the owner has not parted with for a period in excess of three months, and as *debt* what cannot be recovered for a longer period than this; or we can substitute for "three months" one month or three days or three hours or any other period; or we can exclude from *money* whatever is not legal tender on the spot. It is often convenient in practice to include in *money* time-deposits with banks and, occasionally, even such instruments as (e.g.) treasury bills. As a rule, I shall . . . assume that money is co-extensive with bank deposits (p. 167, note).

If everything which satisfies liquidity-preference is to be included as money, then money must be broadly defined so as to include not only demand deposits and time deposits, but also short-term securities, any other assets which are readily marketable without serious risk of loss through depreciation of value, and even the command over credit from banks or others. But the conversion of newly-acquired cash into any other form of asset either involves investment directly or transfers the decision as between hoarding and investment to a banker or other intermediary between the original saver and the ultimate borrower for investment. If the banker permits his investments to remain constant while his cash reserves are increasing, or if he maintains the same cash reserves for idle as for active demand deposits, or for time deposits as for demand deposits, or for deposits as for bank-notes in circulation, then the propensity to hoard which manifests itself in the maintenance of idle bank deposits does operate to check investment, but only with the connivance and support of the banking mechanism.

It may be objected that even if liquidity-preferences operate only, or in the main, to check purchases of long-term securities, they still operate as a check to investment; because the latter is and must be largely in durable goods, or in assets far removed from the stage of the consumers' goods. But the relation between the period of investment intended by the saver and that intended, or in fact resulting, by the borrowing entrepreneur is not a simple one of necessary equality. It is highly flexible and approaches to free variability at the discretion of the borrower. Every money market has an elaborate machinery for transmuting short-term loans into long-term investments and long-term loans into short-term investments, to suit the convenience of original lenders and ultimate borrowers. The typical entrepreneur will shift from long-term to short-term borrowing, or vice versa, even tho the time period involved in the particular operation is unchanged, or (as often) unknowable in advance. He may also be able to shift from long-term to short-term investment if the interest rate at which the latter can be financed is much lower than that at which he can conduct admittedly long-term borrowing. If savers have a 5 per cent per annum preference for cash over investment in 10-year bonds but only a ¼ per cent preference for cash over time-deposits or short-term securities, and if entrepreneurs want funds for 10 years and are unwilling to incur the sacrifice of their own liquidity which would be involved in the attempt to finance 10-year operations with say 3-month borrowings, middlemen will step in who are prepared to lend on long-term funds which they have borrowed on short-term. The modern money market is fortunately equipped to some extent with procedures for satisfying liquidity-preferences without providing genuine liquidity.

(*d*) The propensity to hoard exercises its influence as a restraint on investment through its tendency to raise interest rates. But in what seems to me the most vulnerable part of his analysis, his explanation of the determination of the rate of interest, Keynes assigns to the desire for cash for hoarding purposes a grossly exaggerated importance.

Keynes denies the validity of the "classical" doctrine that interest is the reward for saving and is directly determined by the supply schedule of savings with respect to the interest rate and the investment demand schedule for capital, and his exposition leaves the impression that the interest rate is not dependent to any important extent on these two factors. He denies that interest is the "reward" for saving on the ground that, if a man hoards his savings in cash, he earns no interest, tho he saves just as much as before (p. 167), and claims that, on the contrary, it is the reward for surrender of liquidity. By analogous reasoning he could deny that wages are the reward for labor, or that profit is the reward for risk-taking, because labor is sometimes done without anticipation or realization of a return, and men who assume financial risks have been known to incur losses as a result instead of profits. Without saving there can be no liquidity to surrender. The saver who has no concern about liquidity gets the same reward as the person who saved with liquidity as his initial objective but is persuaded by the interest rate to lend; and the return is granted for loans irrespective whether it is reluctance to postpone consumption or reluctance to surrender liquidity which keeps the supply of funds for investment down to the level at which borrowers are willing to pay the prevailing rate of interest for it. The rate of interest is the return for saving without liquidity.

Keynes explains the rate of interest as determined by the schedule of liquidity-preferences and the available quantity of money, the prevailing rate of interest being simply that price for the sacrifice of liquidity at which the desire to hold cash is equated with the quantity of available cash (p. 167). The rate of interest determines the amount of investment, given the investment demand for capital; but a change in the investment demand for capital will not affect the interest rate "if nothing has happened to the state of liquidity-preference and the quantity of money." (See especially the figure on p. 180, and the text on p. 181).

There have been previous attempts to discover a basis on which the interest rate could be held to be determined independently of the demand for capital, the level of wages, and other important elements in the economy, but the growing recognition of the basic interdependence of all the important economic variables has led to widespread scepticism that any such attempt could succeed. In Keynes' present attempt the fatal flaw is, to repeat, the exaggerated importance attributed to hoarding. In his discussion of liquidity-preferences Keynes distinguishes between the desire for cash for use in the current transaction of personal and business exchanges, and the desire for cash as a security against loss from unsuccessful investment. As I have already argued, the latter considera-tion should not operate as a barrier to short-term investment, and while it may induce a high long-term interest rate, it will be compensated for in part by a shift of borrowing to the short-term market. The pattern of behavior of the desire for transaction-liquidity is probably very largely the inverse of that of security-liquidity, or hoarding proper. As D. H. Robertson points out in his contribution to this symposium, the transactions-desire for cash is for cash to be used and not for cash to be held unused. It must therefore vary positively with the volume of investment, of income, and of expenditures for consumption. In so far as it consists of demand for cash from entrepreneurs for business uses, it is but a reflection of their investment demand for capital. In so far as it is a demand for cash from consumers who are living beyond their current income, it is the demand for consumption loans of older theory. Whatever its origin, demand for cash for transaction purposes is, dollar for dollar, of equal influence on the rate of interest as demand for cash for hoarding purposes. The demand for capital and the propensity to save (which is the reciprocal of the propensity to consume) are thus restored — tho, I admit, in somewhat modified and improved fashion — to their traditional rôles as determinants of the rate of interest.

While (to repeat again) relevant statistical information is scarce, what we do know about the holders of cash balances in the United States points strongly to the importance of the transactions-motive for liquidity and to the relative insignificance in ordinary times of hoarding. It is the corporations, institutions, and governments that hold at all times the bulk of the cash balances, especially if savings deposits are excluded as constituting investments rather than cash. Moreover I suspect (I know of no data on the question) that at least in prosperous times the savers — those who add each year to their estates — who are supposed by Keynes to be a source of so much trouble because of their hoarding propensities, typically hold in cash a smaller percentage of their incomes, let alone of their total resources, than do the spenders. The former have investment habits, and abhor idle cash as nature abhors a vacuum. The latter hold cash until the bills come in for settlement. It would at least be interesting to know whether these are facts or fancies.

The importance of the transactions-demand for cash makes it easy to explain a whole series of historical phenomena which do not fit into Keynes' theory. Because the demand for cash for business use varies positively with the investment demand for capital, and the demand for cash for personal use varies positively with the level of income and of expenditures for consumption, there is no need for treating as a perplexing puzzle the facts, that business is active when interest rates are high and slack when interest rates are low, and that the quantity of money and the interest rate are historically correlated positively rather than negatively. There is an important stabilizing influence, moreover, in these circumstances. During a depression entrepreneurs and spenders release some of the cash to supply the demand of hoarders for security, and during an expansion of business the absorption of cash by business and by spenders, serving as it does to raise the interest rate, keeps the expansion from going beyond bounds; or, Keynes would say, from even approaching reasonable bounds.

3. Money-Wage Flexibility and Volume of Employment

Keynes expresses sweeping dissent with the "classical" doctrine that money-wage rigidity is a major cause both of cyclical and of secular unemployment, altho he freely grants that in general increased employment must mean lower real wages. He maintains that labor strongly resists money wage reductions but takes reductions in real wages much more calmly, and therefore that even if money wage-reductions were logically a remedy for unemployment they would not be a practicable one. His view is that a lowering of money wage-rates, unless it proceeded simultaneously and uniformly all along the line, would chiefly alter the relative rates of wages of different labor groups. It would not be likely to increase the aggregate volume of employment of labor, and on the balance of probabilities would be more likely to reduce it. He does not discuss the effects on employment which would result from pressure from labor for *increases* in money-wages, or from increases of money-wages made voluntarily on the part of employers, whether for humanitarian reasons or because of belief that high wages mean prosperity or in response to public opinion.

Keynes presents his own position mainly in terms of a criticism of a theory which he imputes to the "classical" economists, according to which a reduction of money wages *and a simultaneous corresponding reduction in prices* would increase employment because the same volume of monetary expenditures would purchase a greater physical output of commodities. He easily demolishes this by pointing out that, if money wages paid out were to fall in amount and investment by entrepreneurs (measured in wage-units) did not increase, the amount of money income available for expenditures would fall to an equivalent extent. His discussion of the effects of the wage-reduction on the volume of investment is mainly in terms of its influence on the expectations of entrepreneurs as to the future trend of wages, and he concedes that if entrepreneurs are led to expect further changes to be in an upward direction its effect will be favorable. He urges, however, that "it would be much better that wages should be rigidly fixed and deemed incapable of material changes than that depressions should be accompanied by a gradual downward tendency of money-wages" (p. 265).

This does not meet the argument for wage-reduction — or rather money-cost reduction[5] — during a depression which I had understood to be the prevalent one in recent years. In this other doctrine, factor-prices are to be reduced, but not, or not in the same degree, the prices of consumers' goods. In Keynes' analysis perfect and active competition is assumed, and prices are supposed to fall immediately and in full proportion to the fall in marginal variable[6] costs. If this occurred, and output remained the same, prices per unit would fall in greater absolute amount than would average

5. From the point of view of effect on *output*, the reduction of any part of variable costs is dollar for dollar of the same importance as the reduction of any other part of such costs, and it is only as against reduction of outstanding fixed costs, to the extent that they also do not consist of labor costs, that there is anything to be said for reduction of labor costs in preference to other costs. But from the point of view of the effect on the employment of *labor*, the reduction of labor cost is more favorable than the reduction to an equivalent amount of any other cost, because it will tend to lead to a substitution of labor for other factors, tho it will not be as favorable as the reduction of both or *a fortiori* of all costs simultaneously and in the same proportions.

6. Keynes distinguishes between "factor costs" and "user costs," the two combined comprising "prime" costs. By user costs he means the amounts paid out to other entrepreneurs for purchases from them and sacrifices incurred (extra wear and tear presumably) in employing equipment instead of leaving it idle. He claims that economists have generally equated supply price with marginal factor cost, ignoring user cost, whereas it should be equated with prime cost. I see no point in the distinction between purchases from entrepreneurs and direct purchases of the services of the factors. What is the point in distinguishing between the cost of coal to a steel mill according as it is bought from an outside mine or produced in its own collieries? Where is the line to be drawn between entrepreneurs and "factors"? I am sceptical as to whether any economists have, explicitly or by implication, excluded cost of purchased materials or depreciation of equipment through use from the costs supposed to determine supply price.

variable costs,[7] and even more, if current labor cost were a negligible element in the fixed costs, than would average aggregate costs. The profit status of entrepreneurs would then be less favorable than before. What I understand to be the current doctrine is different. It looks to wage-reductions during a depression to restore profit-margins, thus to restore the investment-morale of entrepreneurs and to give them again a credit status which will enable them to finance any investment they may wish to make. It relies upon the occurrence of a lag between the reduction in wage-rates and a response in reduced volume of sales at the previous prices, during which interval entrepreneurs find prices to be higher than marginal costs and extensions of output therefore profitable, provided buyers can be found for the increased output. Increase in expenditures to restore depleted inventories and to replace inefficient equipment is relied upon to increase pay rolls sufficiently to provide the incomes with which the increased output can be bought, and the gain in employment — and in security of employment for those previously employed — is expected to release for expenditure the emergency reserves of the wage-earning class. On the assumption that a large part of an entrepreneur's expenditures are ordinarily of the postponable class in the sense that they can be deferred without forcing a reduction of the scheduled rate of current output, even tho not without increasing the current cost of production; and on the further assumption that operations at a loss are conducive to the postponement of every expenditure not essential for current operation, the supporters of this doctrine maintain that recovery of a profit margin can lead for a time to an increase in entrepreneurs' expenditures many times the increase in their net income, or, alternatively, the reduction in their net loss. They do not contend that this is certain to occur, but on the ground that the chief factor in governing the action of entrepreneurs with respect to postponable expendi-

7. Because marginal costs would fall in the same proportion as average variable costs but would be greater in amount per unit than average variable costs.

tures is the current profit status of their operations as compared to their immediately preceding experience, they say that it is a reasonable probability. Where external pressure on prices in the face of rigid costs has been an important factor in the depression, they also expect a favorable influence on the volume of employment from the effect of a wage-reduction on profits and therefore on the volume of postponable expenditures, rather than from its effect on prices. While Keynes' analysis provides materials for strengthening this doctrine at a number of points, I cannot find in it any refutation of its general validity.

4. Propensity to Consume

Mr. Keynes himself tells us that the functional relationships of the various economic variables are more complex in fact than is formally recognized in his analysis. Simplification of this sort is inevitable, if analysis is to proceed at all. In the case, however, of Keynes' "propensity to consume" function, it seems to me that the simplification has been carried further than is necessary to prevent the analysis from becoming entangled in its own complexities, and further than is permissible if the concept is to be used fruitfully in the analysis of the short cycle.

Keynes explains the propensity to consume as a functional relationship between the amount of consumption measured in money-wage units and the amount of income similarly measured. On the assumption that income in terms of money wage-units corresponds substantially in its variations with the variations in level of employment, it is concluded that income, consumption, and level of employment are related to each other in a simple pattern. Writing C_w for amount of consumption in wage-units and Y_w for income in wage-units, and accepting as a close approximation that Y_w is a unique function of the level of employment, he states the propensity to consume function as: $C_w = \chi\ (Y_w)$ (p. 90).

Keynes lists a number of factors, (p. 96) "subjective" and "objective," which might affect the value of χ, Y_w remaining constant, but he assumes in general that the "subjective" factors remain constant, at least over short periods, and that, given Y_w, χ depends only on changes in the "objective" factors, which in the aggregate he takes to be of minor importance as compared to changes in Y_w. Several "objective" factors which he does not appear to have taken into account seem important enough in the short cycle to be deserving at least of mention.

Keynes believes that, apart from the effect of a change in the wage-unit on the distribution of income between entrepreneurs and rentiers, who might have different propensities to consume, he has made adequate allowance in his formula for changes in expenditure resulting from changes in the wage-unit by measuring both consumption and income in wage-units. This disregards the possibility that, for short periods at least, the distinction which Keynes' makes in his supply function of labor between the response of labor (1) to changes in real wages accompanied by corresponding changes in money wages, and (2) to changes in real wages resulting from the changes in the prices of wage-goods, money wages remaining the same, may have a parallel in the propensity to consume function. The response of consumption to a reduction in real income may be, for a time, substantially different if the reduction takes the form of a decrease in money-income, prices remaining the same, from what it would be if money-income remained the same but prices increased.

Mr. Keynes claims that in general rich countries are worse off than poor countries with respect to avoidance of "involuntary" employment because of the lesser propensities to consume in the former than in the latter, and thus the greater potential importance of hoarding. Since I would contend that over long periods, given a flexible price system, the propensity to consume will affect the rate of capital accumulation rather than the volume of employment, I will confine myself to a consideration of the comparative situation of the rich and poor countries with respect to the short cycle. The possession of large accumulated resources should operate to level out the rate of consumption in the face of fluctuations in income, and therefore to check both the downward and the upward phases of the cycle. Corresponding to the charges against the entrepreneur's budget which are fixed in aggregate monetary amount regardless of current output, there are in the ordinary consumer's budget items of monetary expenditure which are fixed for a time, very much regardless of changes in his money income as far as reductions therein are concerned, and which tend to be increased only as the result of careful deliberation in response to anticipation of a change of some duration in the individual's economic status. Aside from the probability that such fixed charges are ordinarily a greater proportion of the expenditures of the rich than of the poor, the poor in times of severe depression have a partial means of escape from them, in the form of defaults, to which those with resources subject to levy cannot resort. What this amounts to is that C_w should be treated as a function not only of Y_w, but also of the amount of accumulated resources measured in wage units held by the individual. In so far as the possession of resources operates in the manner suggested here, wealth becomes a stabilizing rather than a disturbing factor. The explanation of the apparently indisputable fact that the cyclical disturbances are more severe in rich than in poor countries would then have to be sought elsewhere than in the differences between rich and poor in propensities to consume. My own guess is that it is to be sought largely in the differences between the cyclical behavior of rich and poor with respect to the disposition of the income which they do not spend. The rich hoard only during depressions and dishoard for investment during prosperity, whereas the poor hoard some of their emergency reserves during prosperity and dishoard during depression.

Mr. Keynes says that a fundamental psychological law, upon which we have a right to depend both on *a priori* grounds and on the basis of experience is that $\frac{dC_w}{dY_w}$ is positive and less than unity; i.e., that in terms of wage-units consumption varies in the same direction as income, but in smaller absolute amount than income (p. 96). This seems altogether reasonable. It leaves unanswered, however, a question of some interest: does C_w ever, except perhaps under war conditions, exceed Y_w? Since the community excess of Y_w over C_w constitutes new investment, if C_w never exceeded Y_w there would be continuous, tho fluctuating, accumulation of capital resources, even through the depths of depression. Mr. Keynes apparently must believe that for the world as a whole the C_w's must often and substantially exceed the Y_w's, for he holds that in spite of "several millenia of steady individual saving" the world is poor in accumulated capital assets.[8] But what evidence there is seems to indicate that, if any acceptable mode of measuring physical amount of capital could be found and applied, it would show that the western world has been getting wealthier fairly steadily during say the past century and a half, not only in terms of aggregate resources but per capita, in spite of a three-or four-fold increase of population.

In connection with the propensity to consume concept, as with most of Keynes' concepts, the question arises in my mind how these concepts would have to be restated in order to provide specifications for the construction of statistical series by which his conclusions as to the nature and mode of behavior through time of the various functions could be inductively tested, and I regret that no suggestions of this sort are provided in this book. I am disposed to support Mr. Robertson in his claim that concepts expressed in more "monetary" terms, and expressions for the relationships between variables which make specific allowance for time-lags instead of assigning uniform time-units to all the variables, have for purposes of *a priori* analysis some points of superiority over Keynes' "propensity" concepts expressed in terms

8. "That the world after several millennia of steady individual saving, is so poor as it is in accumulated capital-assets, is to be explained, in my opinion, neither by the improvident propensities of mankind, nor even by the destruction of war, but by the high liquidity-premiums formerly attaching to the ownership of land and now attaching to money" (p. 242).

of a single time-unit. For purposes of inductive verification, assuming that the statistical data available will ever be in a form relevant to the answer of important questions, it seems obvious to me that the analysis would have to be extensively restated in terms of directions and degrees of time-lags.

JACOB VINER.

UNIVERSITY OF CHICAGO