

Extracts from *The General Theory of Employment, Interest and Money* by John Maynard Keynes (London: Macmillan, 1936)

Chapter 4 (pp. 37–44) and Chapter 8 (pp. 89–98), footnotes omitted.

CHAPTER 4

THE CHOICE OF UNITS

I

IN this and the next three chapters we shall be occupied with an attempt to clear up certain perplexities which have no peculiar or exclusive relevance to the problems which it is our special purpose to examine. Thus these chapters are in the nature of a digression, which will prevent us for a time from pursuing our main theme. Their subject-matter is only discussed here because it does not happen to have been already treated elsewhere in a way which I find adequate to the needs of my own particular enquiry.

The three perplexities which most impeded my progress in writing this book, so that I could not express myself conveniently until I had found some solution for them, are: firstly, the choice of the units of quantity appropriate to the problems of the economic system as a whole; secondly, the part played by expectation in economic analysis; and, thirdly, the definition of income.

II

That the units, in terms of which economists commonly work, are unsatisfactory can be illustrated by the concepts of the National Dividend, the stock of real capital and the general price-level:—

(i) The National Dividend, as defined by Marshall and Professor Pigou, measures the volume of current output or real income and not the value of output or money-income.

Furthermore, it depends, in some sense, on *net* output;— on the net addition, that is to say, to the resources of the community available for consumption or for retention as capital stock, due to the economic activities and sacrifices of the current period, after allowing for the wastage of the stock of real capital existing at the commencement of the period. On this basis an attempt is made to erect a quantitative science. But it is a grave objection to this definition for such a purpose that the community's output of goods and services is a non-homogeneous complex which cannot be measured, strictly speaking, except in certain special cases, as for example when all the items of one output are included in the same proportions in another output.

(ii) The difficulty is even greater when, in order to calculate net output, we try to measure the net addition to capital equipment; for we have to find some basis for a quantitative comparison between the new items of equipment produced during the period and the old items which have perished by wastage. In order to arrive at the net national dividend, Professor Pigou deducts such obsolescence, etc., “as may fairly be called ‘normal’; and the practical test of normality is that the depletion is sufficiently regular to be foreseen, if not in detail, at least in the large”. But, since this deduction is not a deduction in terms of money, he is involved in assuming that there can be a change in physical quantity, although there has been no physical change; *i.e.* he is covertly introducing changes in *value*.

Moreover, he is unable to devise any satisfactory formula to evaluate new equipment against old when, owing to changes in technique, the two are not identical. I believe that the concept at which Professor Pigou is aiming is the right and appropriate concept for economic analysis. But, until a satisfactory system of units has been adopted, its precise definition is an impossible task. The problem of comparing one real output with another and of then calculating net output by setting off new items of equipment against the wastage of old items presents conundrums which permit, one can

confidently say, of no solution.

(iii) Thirdly, the well-known, but unavoidable, element of vagueness which admittedly attends the concept of the general price-level makes this term very unsatisfactory for the purposes of a causal analysis, which ought to be exact.

Nevertheless these difficulties are rightly regarded as “co-nundrums”. They are “purely theoretical” in the sense that they never perplex, or indeed enter in any way into, business decisions and have no relevance to the causal sequence of economic events, which are clear-cut and determinate in spite of the quantitative indeterminacy of these concepts. It is natural, therefore, to conclude that they not only lack precision but are unnecessary. Obviously our quantitative analysis must be expressed without using any quantitatively vague expressions. And, indeed, as soon as one makes the attempt, it becomes clear, as I hope to show, that one can get on much better without them.

The fact that two incommensurable collections of miscellaneous objects cannot in themselves provide the material for a quantitative analysis need not, of course, prevent us from making approximate statistical comparisons, depending on some broad element of judgment rather than of strict calculation, which may possess significance and validity within certain limits.

But the proper place for such things as net real output and the general level of prices lies within the field of historical and statistical description, and their purpose should be to satisfy historical or social curiosity, a purpose for which perfect precision—such as our causal analysis requires, whether or not our knowledge of the actual values of the relevant quantities is complete or exact—is neither usual nor necessary. To say that net output to-day is greater, but the price-level lower, than ten years ago or one year ago, is a proposition of a similar character to the statement that Queen Victoria was a better queen but not a happier woman than Queen Elizabeth—a proposition not without meaning and not without interest, but unsuitable as material for the differential calculus. Our

precision will be a mock precision if we try to use such partly vague and non-quantitative concepts as the basis of a quantitative analysis.

III

On *every* particular occasion, let it be remembered, an entrepreneur is concerned with decisions as to the scale on which to work a given capital equipment; and when we say that the expectation of an increased demand, *i.e.* a raising of the aggregate demand function, will lead to an increase in aggregate output, we really mean that the firms, which own the capital equipment, will be induced to associate with it a greater aggregate employment of labour. In the case of an individual firm or industry producing a homogeneous product we can speak legitimately, if we wish, of increases or decreases of output. But when we are aggregating the activities of all firms, we cannot speak accurately except in terms of quantities of employment applied to a given equipment. The concepts of output as a whole and its price-level are not required in this context, since we have no need of an absolute measure of current aggregate output, such as would enable us to compare its amount with the amount which would result from the association of a different capital equipment with a different quantity of employment. When, for purposes of description or rough comparison, we wish to speak of an increase of output, we must rely on the general presumption that the amount of employment associated with a given capital equipment will be a satisfactory index of the amount of resultant output;—the two being presumed to increase and decrease together, though not in a definite numerical proportion.

In dealing with the theory of employment I propose, therefore, to make use of only two fundamental units of quantity, namely, quantities of money-value and quantities of employment. The first of these is strictly homogeneous, and the second can be made so. For, in so far as different grades and kinds of labour and salaried assistance enjoy

a more or less fixed relative remuneration, the quantity of employment can be sufficiently defined for our purpose by taking an hour's employment of ordinary labour as our unit and weighting an hour's employment of special labour in proportion to its remuneration; *i.e.* an hour of special labour remunerated at double ordinary rates will count as two units. We shall call the unit in which the quantity of employment is measured the labour-unit; and the money-wage of a labour-unit we shall call the wage-unit. Thus, if E is the wages (and salaries) bill, W the wage-unit, and N the quantity of employment, $E = N.W$.

This assumption of homogeneity in the supply of labour is not upset by the obvious fact of great differences in the specialised skill of individual workers and in their suitability for different occupations. For, if the remuneration of the workers is proportional to their efficiency, the differences are dealt with by our having regarded individuals as contributing to the supply of labour in proportion to their remuneration; whilst if, as output increases, a given firm has to bring in labour which is less and less efficient for its special purposes per wage-unit paid to it, this is merely one factor among others leading to a diminishing return from the capital equipment in terms of output as more labour is employed on it. We subsume, so to speak, the non-homogeneity of equally remunerated labour units in the equipment, which we regard as less and less adapted to employ the available labour units as output increases, instead of regarding the available labour units as less and less adapted to use a homogeneous capital equipment. Thus if there is no surplus of specialised or practised labour and the use of less suitable labour involves a higher labour cost per unit of output, this means that the rate at which the return from the equipment diminishes as employment increases is more rapid than it would be if there were such a surplus. Even in the limiting case where different labour units were so highly specialised as to be altogether incapable of being substituted for one another, there is no awkwardness; for this merely means that the elasticity of

supply of output from a particular type of capital equipment falls suddenly to zero when all the available labour specialised to its use is already employed. Thus our assumption of a homogeneous unit of labour involves no difficulties unless there is great instability in the relative remuneration of different labour-units; and even this difficulty can be dealt with, if it arises, by supposing a rapid liability to change in the supply of labour and the shape of the aggregate supply function.

It is my belief that much unnecessary perplexity can be avoided if we limit ourselves strictly to the two units, money and labour, when we are dealing with the behaviour of the economic system as a whole; reserving the use of units of particular outputs and equipments to the occasions when we are analysing the output of individual firms or industries in isolation; and the use of vague concepts, such as the quantity of output as a whole, the quantity of capital equipment as a whole and the general level of prices, to the occasions when we are attempting some historical comparison which is within certain (perhaps fairly wide) limits avowedly unprecise and approximate.

It follows that we shall measure changes in current output by reference to the number of hours of labour paid for (whether to satisfy consumers or to produce fresh capital equipment) on the existing capital equipment, hours of skilled labour being weighted in proportion to their remuneration. We have no need of a quantitative comparison between this output and the output which would result from associating a different set of workers with a different capital equipment. To predict how entrepreneurs possessing a given equipment will respond to a shift in the aggregate demand function it is not necessary to know how the quantity of the resulting output, the standard of life and the general level of prices would compare with what they were at a different date or in another country. . . .

CHAPTER 8

THE PROPENSITY TO CONSUME: I. THE OBJECTIVE FACTORS

I

We are now in a position to return to our main theme, from which we broke off at the end of Book I in order to deal with certain general problems of method and definition. . . .

The aggregate demand function relates any given level of employment to the “proceeds” which that level of employment is expected to realise. The “proceeds” are made up of the sum of two quantities—the sum which will be spent on consumption when employment is at the given level, and the sum which will be devoted to investment. The factors which govern these two quantities are largely distinct. In this book we shall consider the former, namely what factors determine the sum which will be spent on consumption when employment is at a given level; and in Book IV we shall proceed to the factors which determine the sum which will be devoted to investment. . . .

The amount that the community spends on consumption obviously depends (i) partly on the amount of its income, (ii) partly on the other objective attendant circumstances, and (iii) partly on the subjective needs and the psychological propensities and habits of the individuals composing it and the principles on which the income is divided between them (which may suffer modification as output is increased). The motives to spending interact and the attempt to classify them runs the danger of false division. Nevertheless it will clear our minds to consider them separately under two broad heads which we shall call the subjective factors and the objective factors. The subjective factors, which we shall consider in more detail in the next chapter, include those psychological characteristics of human nature and those social practices and institutions which, though not unalterable, are unlikely to undergo a material change over a short period of time

except in abnormal or revolutionary circumstances. In an historical enquiry or in comparing one social system with another of a different type, it is necessary to take account of the manner in which changes in the subjective factors may affect the propensity to consume. But, in general, we shall in what follows take the subjective factors as given; and we shall assume that the propensity to consume depends only on changes in the objective factors.

II

The principal objective factors which influence the propensity to consume appear to be the following:

(1) *A change in the wage-unit.* Consumption (*C*) is obviously much more a function of (in some sense) *real* income than of money-income. In a given state of technique and tastes and of social conditions determining the distribution of income, a man's real income will rise and fall with the amount of his command over labour-units, *i.e.* with the amount of his income measured in wage-units; though when the aggregate volume of output changes, his real income will (owing to the operation of decreasing returns) rise less than in proportion to his income measured in wage-units. As a first approximation, therefore, we can reasonably assume that, if the wage-unit changes, the expenditure on consumption corresponding to a given level of employment will, like prices, change in the same proportion; though in some circumstances we may have to make an allowance for the possible reactions on aggregate consumption of the change in the distribution of a given real income between entrepreneurs and rentiers resulting from a change in the wage-unit. Apart from this, we have already allowed for changes in the wage-unit by defining the propensity to consume in terms of income measured in terms of wage-units.

(2) *A change in the difference between income and net income.* We have shown above that the amount of consumption depends on net income rather than on income, since it is, by definition, his net income that a man has primarily in mind

when he is deciding his scale of consumption. In a given situation there may be a somewhat stable relationship between the two, in the sense that there will be a function uniquely relating different levels of income to the corresponding levels of net income. If, however, this should not be the case, such part of any change in income as is not reflected in net income must be neglected since it will have no effect on consumption; and, similarly, a change in net income, not reflected in income, must be allowed for. Save in exceptional circumstances, however, I doubt the practical importance of this factor. We will return to a fuller discussion of the effect on consumption of the difference between income and net income in the fourth section of this chapter.

(3) *Windfall changes in capital-values not allowed for in calculating net income.* These are of much more importance in modifying the propensity to consume, since they will bear no stable or regular relationship to the amount of income. The consumption of the wealth-owning class may be extremely susceptible to unforeseen changes in the money-value of its wealth. This should be classified amongst the major factors capable of causing short-period changes in the propensity to consume.

(4) *Changes in the rate of time-discounting, i.e. in the ratio of exchange between present goods and future goods.* This is not quite the same thing as the rate of interest, since it allows for future changes in the purchasing power of money in so far as these are foreseen. Account has also to be taken of all kinds of risks, such as the prospect of not living to enjoy the future goods or of confiscatory taxation. As an approximation, however, we can identify this with the rate of interest.

The influence of this factor on the rate of spending out of a given income is open to a good deal of doubt. For the classical theory of the rate of interest, which was based on the idea that the rate of interest was the factor which brought the supply and demand for savings into equilibrium, it was convenient to suppose that expenditure on consumption is *cet. par.* negatively sensitive to changes in the rate of interest,

so that any rise in the rate of interest would appreciably diminish consumption. It has long been recognised, however, that the total effect of changes in the rate of interest on the readiness to spend on present consumption is complex and uncertain, being dependent on conflicting tendencies, since some of the subjective motives towards saving will be more easily satisfied if the rate of interest rises, whilst others will be weakened. Over a long period substantial changes in the rate of interest probably tend to modify social habits considerably, thus affecting the subjective propensity to spend—though in which direction it would be hard to say, except in the light of actual experience. The usual type of short-period fluctuation in the rate of interest is not likely, however, to have much direct influence on spending either way.

There are not many people who will alter their way of living because the rate of interest has fallen from 5 to 4 per cent, if their aggregate income is the same as before. Indirectly there may be more effects, though not all in the same direction. Perhaps the most important influence, operating through changes in the rate of interest, on the readiness to spend out of a given income, depends on the effect of these changes on the appreciation or depreciation in the price of securities and other assets. For if a man is enjoying a windfall increment in the value of his capital, it is natural that his motives towards current spending should be strengthened, even though in terms of income his capital is worth no more than before; and weakened if he is suffering capital losses. But this indirect influence we have allowed for already under (3) above. Apart from this, the main conclusion suggested by experience is, I think, that the short-period influence of the rate of interest on individual spending out of a given income is secondary and relatively unimportant, except, perhaps, where unusually large changes are in question. When the rate of interest falls very low indeed, the increase in the ratio between an annuity purchasable for a given sum and the annual interest on that sum may, however, provide an important source of negative saving by encouraging the practice of

providing for old age by the purchase of an annuity.

The abnormal situation, where the propensity to consume may be sharply affected by the development of extreme uncertainty concerning the future and what it may bring forth, should also, perhaps, be classified under this heading.

(5) *Changes in fiscal policy.* In so far as the inducement to the individual to save depends on the future return which he expects, it clearly depends not only on the rate of interest but on the fiscal policy of the government. Income taxes, especially when they discriminate against “unearned” income, taxes on capital-profits, death-duties and the like are as relevant as the rate of interest; whilst the range of possible changes in fiscal policy may be greater, in expectation at least, than for the rate of interest itself. If fiscal policy is used as a deliberate instrument for the more equal distribution of incomes, its effect in increasing the propensity to consume is, of course, all the greater.

We must also take account of the effect on the aggregate propensity to consume of government sinking funds for the discharge of debt paid for out of ordinary taxation. For these represent a species of corporate saving, so that a policy of substantial sinking funds must be regarded in given circumstances as reducing the propensity to consume. It is for this reason that a change-over from a policy of government borrowing to the opposite policy of providing sinking funds (or *vice versa*) is capable of causing a severe contraction (or marked expansion) of effective demand.

(6) *Changes in expectations of the relation between the present and the future level of income.* We must catalogue this factor for the sake of formal completeness. But, whilst it may affect considerably a particular individual’s propensity to consume, it is likely to average out for the community as a whole. Moreover, it is a matter about which there is, as a rule, too much uncertainty for it to exert much influence.

We are left therefore, with the conclusion that in a given situation the propensity to consume may be considered a fairly stable function, provided that we have eliminated

changes in the wage-unit in terms of money. Windfall changes in capital-values will be capable of changing the propensity to consume, and substantial changes in the rate of interest and in fiscal policy may make some difference; but the other objective factors which might affect it, whilst they must not be overlooked, are not likely to be important in ordinary circumstances.

The fact that, given the general economic situation, the expenditure on consumption in terms of the wage-unit depends in the main, on the volume of output and employment is the justification for summing up the other factors in the portmanteau function “propensity to consume”. For whilst the other factors are capable of varying (and this must not be forgotten), the aggregate income measured in terms of the wage-unit is, as a rule, the principal variable upon which the consumption-constituent of the aggregate demand function will depend.

III

Granted, then, that the propensity to consume is a fairly stable function so that, as a rule, the amount of aggregate consumption mainly depends on the amount of aggregate income (both measured in terms of wage-units), changes in the propensity itself being treated as a secondary influence, what is the normal shape of this function?

The fundamental psychological law, upon which we are entitled to depend with great confidence both *a priori* from our knowledge of human nature and from the detailed facts of experience, is that men are disposed, as a rule and on the average, to increase their consumption as their income increases, but not by as much as the increase in their income. That is to say, if C_w is the amount of consumption and Y_w is income (both measured in wage-units) ΔC_w has the same sign as ΔY_w but is smaller in amount, *i.e.* $\frac{dC_w}{dY_w}$ is positive and less than unity.

This is especially the case where we have short periods in view, as in the case of the so-called cyclical fluctuations

of employment during which habits, as distinct from more permanent psychological propensities, are not given time enough to adapt themselves to changed objective circumstances. For a man's habitual standard of life usually has the first claim on his income, and he is apt to save the difference which discovers itself between his actual income and the expense of his habitual standard; or, if he does adjust his expenditure to changes in his income, he will over short periods do so imperfectly. Thus a rising income will often be accompanied by increased saving, and a falling income by decreased saving, on a greater scale at first than subsequently.

But, apart from short-period *changes* in the level of income, it is also obvious that a higher absolute level of income will tend, as a rule, to widen the gap between income and consumption. For the satisfaction of the immediate primary needs of a man and his family is usually a stronger motive than the motives towards accumulation, which only acquire effective sway when a margin of comfort has been attained. These reasons will lead, as a rule, to a *greater proportion* of income being saved as real income increases. But whether or not a greater proportion is saved, we take it as a fundamental psychological rule of any modern community that, when its real income is increased, it will not increase its consumption by an equal *absolute* amount, so that a greater absolute amount must be saved, unless a large and unusual change is occurring at the same time in other factors. As we shall show subsequently, the stability of the economic system essentially depends on this rule prevailing in practice. This means that, if employment and hence aggregate income increase, *not all* the additional employment will be required to satisfy the needs of additional consumption.

On the other hand, a decline in income due to a decline in the level of employment, if it goes far, may even cause consumption to exceed income not only by some individuals and institutions using up the financial reserves which they have accumulated in better times, but also by the government, which will be liable, willingly or unwillingly, to run into a

budgetary deficit or will provide unemployment relief; for example, out of borrowed money. Thus, when employment falls to a low level, aggregate consumption will decline by a smaller amount than that by which real income has declined, by reason both of the habitual behaviour of individuals and also of the probable policy of governments; which is the explanation why a new position of equilibrium can usually be reached within a modest range of fluctuation. Otherwise a fall in employment and income, once started, might proceed to extreme lengths.

This simple principle leads, it will be seen, to the same conclusion as before, namely, that employment can only increase *pari passu* with an increase in investment; unless, indeed, there is a change in the propensity to consume. For since consumers will spend less than the increase in aggregate supply price when employment is increased, the increased employment will prove unprofitable unless there is an increase in investment to fill the gap. . . .