

KEYNES LECTURE IN ECONOMICS

LIMITATIONS OF THE 'GENERAL THEORY'

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KEYNES'S *General Theory of Employment, Interest and Money* published in 1936, or 46 years ago, will, I think, be acknowledged as the most important, and certainly the most influential, book on economics of the twentieth century and this, I think, has been or will be conceded by his opponents and not only by his followers. It will rank as one of the top five classics in the field—of comparable importance to Adam Smith's *Wealth of Nations*, Ricardo's *Principles*, Marx's *Das Kapital*, and Alfred Marshall's *Principles of Economics*.¹

Yet compared with these other books—all of which are in the nature of comprehensive treatises covering all aspects of the phenomena with which they deal—Keynes's book is more akin to a polemical pamphlet addressed to trained economists, the main purpose of which is not to teach but to convert the learned reader to a new way of looking at the economic system, based on a limited number of empirically measurable relationships, in order to forge new instruments capable of improving the performance of the economy by fiscal and monetary measures.

When the *General Theory* first appeared, none of the leading members of the profession understood the message Keynes intended to convey, and all the leading reviews—by economists of the distinction of Jacob Viner in the United States, of Pigou or Dennis Robertson in England—were highly critical and disapproving; and all claimed to have found *some* basic logical snag which invalidated its main conclusions.

¹ Some may dispute the inclusion of Marshall in this list, and would prefer Walras's *Elements of Pure Economics* as the more profound and logically more consistent statement of neo-classical economic theory. In my view, however, Marshall's recognition of the impossibility of building a 'pure model' based on a few basic axioms and of the limitations of deductive reasoning, led to results which have been more fruitful than those derived from the single-minded pursuit of an axiomatic theory of value.

For these conclusions ran counter to the basic premisses on which economic theory was built. Both classical and neo-classical economics took the scarcity of means for the satisfaction of human wants as their basic premiss. Keynes asserted that production in general was limited not by resource endowment but by effective demand, which determined *how much* of potential resources were effectively utilised, and in consequence there was scope for greater material welfare through a fuller utilisation of resources.

The principle of effective demand, which is the core of his theory, was in fact a refinement, or a development, of Say's law rather than a simple rejection of it. Keynes did not deny that incomes are derived from productive activities, or that 'incomes' are merely a different aspect of costs incurred, and therefore are both a measure of the value of things produced and the source of purchasing power—the source of demand for goods. What he denied was that there is a necessary equivalence between the costs incurred in production and the demand generated by the costs incurred. The novelty in Keynes's theory was to make production the resultant of expenditure decisions, which must be on a sufficient scale to make it possible for the producers not only to recover their costs, but to leave a surplus over these costs for profit. A private enterprise economy requires such an excess—the receipts obtained from the sale of output must *exceed* the entrepreneurs' outlays on production. To make this possible there must be an additional source of demand which is *autonomous* (or exogenous) in character; and it is the size of this autonomous demand, which does not flow directly from income receipts generated by current production, which will determine at what level of output total demand and supply will match one another.¹ The larger the excess of receipts over outlays—in other words, the larger the share of profits in output—the greater the volume of production and employment will tend to be.

It is not surprising that for economists brought up in the classical tradition all this sounded odd and almost incomprehensible. Yet after a remarkably short time—aided, no doubt, by the rethinking forced on everyone by the war—the initial opposition evaporated, and the basic ideas found acceptance not only among

¹ The above form of stating the principle differs from Keynes's presentation in the *General Theory* (it resembles more closely Keynes's approach in the *Treatise on Money*), but the two are equivalent since investment must exceed savings out of 'factor incomes' for profits to be positive. Keynes's manner of presentation in ch. 3 of the *General Theory* took no explicit account of the vital role of profits in providing both the incentives and the residual finance (or savings) for investment.

academic economists of the younger generation, but among civil servants, official advisers to Ministers and even financial journalists, not only in Britain but also in America and throughout the Western World.

A quarter of a century later, in the 1970s, the full employment policies more or less successfully pursued by all Western countries broke down. This coincided in time with the revival of pre-Keynesian ideas which regarded inflation as the main evil (and also mainly as a consequence of the pursuit of Keynesian ideas of demand management) and which believed that salvation could be sought only through a control of the money supply.

I am not suggesting that the monetarist counter-revolution had a major role in the economic convulsions of the 1970s which came to be known as 'stagflation'—high rates of inflation combined with stagnant and falling output, with the reappearance of mass unemployment. As a matter of time-sequence the triumph of monetarism in Britain and America came years after the convulsions appeared: there was talk of a 'crisis of Keynesian economics' in the early 1970s by Keynesian economists like Sir John Hicks and not just by monetarists.

The purpose of my lecture today is to show that many of the difficulties which emerged in the operation of Keynesian policies of demand management were due not to any defect in the basic conception but to the failure of Keynes (and of his followers) to work out the full implications of his 'paradigm' of the economy as against the ruling 'paradigm' of neo-classical economics.

Keynes himself emphasized that the writing of his book was 'one long struggle to escape from habitual modes of thought and expression . . . The difficulty lies not in the new ideas, but in escaping from the old ones, which ramify, for those brought up as most of us have been, into every corner of our minds.'¹

As far as it is possible within the confines of a lecture I hope to demonstrate that the limitations of the *General Theory* derive more from a failure to escape from traditional modes of thought than from any basic defect in those aspects which were fundamentally new. Apart from his failure to cut himself loose from one of the main tenets of the quantity theory of money, with which I shall deal only briefly today as I have discussed it extensively on earlier occasions, the three main aspects in which Keynes remained too much a follower of tradition concern: first, the micro-economic background, in other words, the implications for his theory of the

¹ *General Theory*, Preface, p. viii.

way markets function; second, the regional or territorial aspect, the implications of inter-regional trade for the differing rates of employment-growth of different areas; and finally, the failure to recognize that owing to the importance of increasing returns in manufacturing, the development of an industrial system is largely self-generated, where, owing to a powerful feed-back mechanism, 'events of the recent past can only be explained in terms of the actual sequence through which the system has progressed; history enters into the causation of events in an essential way'.¹

Keynes was first and foremost a monetary economist. He lectured on monetary theory and monetary institutions in Cambridge throughout his career and he shared with other leading British economists of his generation, such as Dennis Robertson and Ralph Hawtrey, the belief that money holds the key to all major shortcomings in the performance of the economy. This led him to an exaggerated view of the importance of monetary policy and of the rate of interest, and, as I shall argue, it left him open to the monetarist counter-attack, which could not otherwise have acquired so widespread an influence.

Though Keynes looked upon his own intellectual development as an attempt to reformulate and finally to abandon the quantity theory of money in which he was brought up, the fact remains that he never succeeded in doing so entirely. In particular, he retained the assumption that the 'money supply'—the amount of bank money in circulation whether in the form of bank notes or bank deposits—is exogenous, it is independently determined by the monetary authorities. His liquidity preference theory was meant to explain why, despite this, an increase in the desire to invest will lead to a rise in incomes and of savings even if the quantity of money is kept constant. It will do so on account of its repercussions on the rate of interest which will cause an increase in the velocity of circulation of money *pari passu* with the higher level of incomes and expenditures. If the supply of money is held constant, the demand to hold money as a proportion of income will be reduced to the extent required through the rise in interest rates. This form of exposition had the most unfortunate results since it made Keynes vulnerable to critics such as Milton Friedman, who showed, on the basis of extensive historical investigations, that it was the fluctuations in the supply of money which accounted for most of the variations in money incomes and expenditure.

¹ Cf. Jukka Pekkarinen, *On the Generality of Keynesian Economics* (Helsinki, 1979), p. 112. He adds that in consequence 'it is not reasonable to view the economic process as allocating given resources with given technologies and preferences'.

Indeed it is true of most countries that the money supply on a broad definition (M_2 or M_3) increases more or less in proportion to the money value of the national income. The true explanation, which Keynes never stated in the *General Theory*, is that in a credit money economy, changes in the money supply are a consequence, and not the cause, of the change in prices or incomes—a revolutionary idea which was already perceived by Henry Thornton in 1802 and by the followers of the Banking School in the early decades of the last century.

Having said this, I would now like to come to my main points. First, as regards *micro*-economics, the most important difference between the pre-Keynesian and Keynesian ways of thinking concerns the ways in which impulses are transmitted in the economy. In neo-classical equilibrium theory everything happens through the agency of prices. It is through the price system that resources are allocated between different uses; it is through relative price movements that individual markets are maintained in equilibrium, and the economic plans of individuals or businesses (decided on the basis of price-information alone), are made consistent with one another. On this view it is only through a price signal that any exogenous change—an increase in the demand for a commodity, or a rise in its supply—can bring about the required adjustments. Resource allocation or expenditure allocation responds to price signals—which must therefore precede the actual change in the use of resources.

Under a system of imperfect or monopolistic competition, where producers or sellers *set* the price, this is not so. Any exogenous change which disturbs the balance of supply and demand leads to changes in quantities produced or exchanged, whether or not such changes in quantities are accompanied by changes in prices. In either case, prices play a purely passive role—they are not instrumental in bringing about the adjustments in production or employment. These proceed directly from changes in demand.

This is the situation in a modern industrial community where the sellers—whether they are manufacturers or shopkeepers—face a *limited* market, i.e. a limited demand for their products which can be influenced only up to a point by price variations.

Such 'price-setting' behaviour encompasses the greater part of modern economies (with the exception of agricultural staples, certain raw materials, and certain sections of the labour market). It extends to all 'secondary' or processing activities and to a large part of tertiary activities as well but not, or only to a limited extent, to the primary sector.

Under conditions of imperfect competition—oligopoly or polyopoly—the functions of the price mechanism are replaced by, or at least supplemented by, a much simpler mechanism, the so-called ‘stock adjustment’ principle. Stocks are carried at all stages of production and distribution, and the impact effect of an increase in demand is a decrease of stocks in relation to turnover which acts as a signal to producers to step up production so as to restore stocks to the normal level. Professor Kornai has shown, in his book on *Anti-Equilibrium*, that the operation of the ‘stock-adjustment’ principle represents a much simpler ‘nervous system’ communicating impulses through the body economic than that provided by the Walrasian system of equations.

Keynes seems to have been unaware of the importance of imperfect competition to his theory—he was content to assume, with Marshall, that each producer maximizes his profits by equating the market price with his marginal costs, ignoring the fact that this condition implies the *full utilization* of capacity of individual firms, and that without excess capacity, production will be supply constrained, irrespective of whether there is full employment or not.

For production to be demand-determined, excess capacity must exist as well as unemployed labour; this is a basic situation in any model where markets do not ‘clear’ (in the Walrasian sense) and there is excess supply in the sense that sellers sell less than the amount that would maximise their profits at the ruling price.¹

There is a great deal of empirical evidence to suggest² that producers set their prices with reference to costs (charging a margin for profit which secures the required rate of return on capital at the *normal* utilization of capacity). But there is also evidence to show that under conditions of oligopoly this price-behaviour only applies to the ‘price leaders’, whereas the other producers (the price followers) must fix their prices by reference to the price-leaders’ price, which they regard as given, independently of their own price behaviour.

If this were not so it would be difficult to explain the very wide variation in profits earned by different firms in the same industry;

¹ Under conditions of oligopolistic competition, producers deliberately aim at maintaining a larger capacity than they are likely to require—partly in order to be always in a position to satisfy ‘new customers’, and thus to take advantage of any chance increase in their market share, but partly also in order to discourage the entry of new competitors (cf. e.g. the famous anti-trust judgment in the US by Judge Learned Hand in the case of *USA v. Aluminium Company of America*).

² Cf. Coutts, Godley, and Nordhaus, *Industrial Pricing in the United Kingdom* (Cambridge University Press, 1978).

the most successful firms make a profit that is the equivalent of one-half of net output (i.e. of 'value added') or more, whereas the least successful barely cover their costs, or make losses. 'Full cost pricing' applies to the firms that lead the market and set the price to other competing firms.

This type of oligopolistic price behaviour explains why variations in demand cause more or less equivalent variations in the sales of *all* firms, instead of being concentrated (as Keynes assumed in the *General Theory*) on the least efficient or 'marginal' establishments. From the point of view of the buyers, the price to be paid for the products of the high-cost firm is no greater than that of the most efficient firm—the differences affect the profits made by the firms, not the prices paid by the buyers. This, together with the product-differentiation, customer attachment, etc., normally associated with imperfect markets explains why, despite the presence of increasing returns, the most efficient firms are unable to raise their market share beyond a certain level, and why, despite the high range of variation in productivity and cost per unit of output between establishments, which amounts to as much as 2:1 or even 4:1, a demand-induced change in output tends to be associated with a change in productivity in the *same* direction, and not in an *opposite* direction.¹ As an increase in demand raises the degree of utilization of capacity of all firms more or less equally, it is attended by a fall in costs per unit of output throughout the industry and a disproportionate rise in profits. It is this mechanism, not trade unions pushing up wages, which explains why, in the case of a fall in demand, such as we have been experiencing, there is a disproportionate fall in profits—except that, in so far as the fall in demand is large enough to cause the least efficient firms to go out of business altogether (owing to losses which they cannot sustain), average productivity and profits will be relieved. But the market conditions which are necessary to validate the *General Theory* exclude diminishing marginal productivity—a fact which makes the basic assumption of involuntary unemployment far more plausible. As Jean de Largentaye pointed out² Keynes's acceptance in the *General Theory*—he appears to have changed his views later on³—of the classical view of diminishing marginal productivity made it possible 'to

¹ Cf. Neild, R. R., *Pricing and Employment in the Trade Cycle* (CUP 1963).

² Introduction to the second French edition of the *General Theory*; English translation in the *Journal of Post-Keynesian Economics*, Spring 1979.

³ In his article on 'Relative Movements of Real Wages and Output', *Economic Journal*, March 1939.

invoke the authority of the *General Theory* in favour of opinions directly contrary to its essential teaching'.

However these conditions do not obtain (or not universally) in the case of basic materials, the products of agriculture or mining. These are traded in 'flexprice' markets (to use Hicks's expression) where the individual producer can sell whatever he can produce at the ruling price, but where the prices themselves are subject to frequent changes and large fluctuations. The prices of primary commodities (in the absence of publicly operated price stabilization schemes) are settled in highly organized markets where stocks are carried, not by producers, but by merchants (or dealers), who are both buyers and sellers, and make their profit from the margin between their buying price and selling price. It is the merchants whose activities secure an 'orderly market' which they can only do by acting *against* the market, so to speak: by being ready to enlarge commitments when prices are falling, and to curtail commitments when they are rising. The very notion of 'merchanting' involves the assumption that there is a certain elasticity of demand for holding stocks by the market; an elasticity which, within limits, has the same kind of effect as a 'buffer stock' has: the merchant's normal willingness to deal with both buyers and sellers automatically provides extra supplies in the face of excess demand, and extra demand in the face of excess supplies.

None the less, except under conditions of a deep slump, such as occurred in the early 1930s, it cannot be assumed that the supplies of primary products have the same kind of elasticity as those of manufactured goods. This means that, over a longer period and taking the world as a whole, the growth of raw material supplies may be governing factors in the growth of world industrial production and employment.

Both in the inter-war period and in the post-war period, at any rate until the late 1960s, the increase in primary production more than kept pace with the increase in demand from the industrial sectors, and the price-level of primary products, in dollar terms, remained constant after 1953 (though the prices of *individual* commodities fluctuated a great deal). However, by the early 1970s the reserves in grains accumulated in the 1950s and 1960s disappeared, and in response to Russian and Chinese demands in the world market food prices shot up, followed by metal prices, the demand for which may have been swollen by speculative investment in stocks, engendered by the inflationary expectations which ensued from the *formal* abandonment of the convertibility of the dollar into gold in 1971. All this happened

before the oil price explosion due to the formation of the OPEC price cartel in 1973.

The result was both a great acceleration in the rate of inflation the world over, and a slow-down in the growth of world industrial production and productivity. These events have demonstrated that the methods of Keynesian demand management are not sufficient to protect full employment and to preserve stability if the two great complementary sectors of the world economy, the primary sector and the secondary sector, fail to expand in a sustainable relationship to each other. Keynes would have been the first to acknowledge this; hence his advocacy, both before and after the war, of the creation of international buffer stocks in order to stabilize the prices of primary products and thereby reduce the risks, and stimulate investment, in the primary sector.¹

This brings me to the second aspect in which the *General Theory* was defective—in its failure to deal with all problems connected with international or interregional trade. At the level of abstraction in which the book was written, Keynes was implicitly assuming a closed economy and one which consisted only of industrial enterprises with financial resources (or borrowing powers) which were in excess of their projected capital expenditure—otherwise he could not have treated decisions concerning investment as the main autonomous component of demand, depending only on long-term expectations. The result of this neglect was that exports as the *main* source of autonomous demand tended to be ignored; the methods of economic management were concentrated on regulating the domestic pressure of demand, aiming at a level which left adequate resources available for exports looked at simply as the means of paying for imports. In the immediate post-war years, when the foreign demand for British goods greatly exceeded the supply, this policy appeared adequate, and it *did* secure a very rapid growth in the volume of exports in the years up to 1951. But from then on there was a dramatic change. Exports increased very slowly: they actually fell in 1951–2 and afterwards increased at 2–5 per cent a year instead of over 15 per cent a year in 1946–50. And at fairly regular intervals Britain ran into a balance of payments crisis, whenever excessive imports—which began to grow faster than total domestic income and faster than exports—forced the introduction of deflationary measures to protect the exchange rate.

¹ Cf. Keynes's article, 'The Policy of Government Storage of Foodstuffs and Raw Materials', *Economic Journal*, September 1938.

Even then the key importance of exports as 'demand coming from outside the economy' on the growth of profitable investment opportunities and on the growth of industrial capacity and of labour productivity failed to be recognized—though the comparative success in the growth rates of the countries which managed to secure a rapid growth of exports (such as Germany, Japan, Italy, Sweden) became evident by the end of the 1950s.

Though Harrod published, in a small introductory textbook,¹ a revolutionary new explanation of how the balance of payments was maintained in equilibrium under the Gold Standard² and did so three years *before* the appearance of the *General Theory*, his theory of the 'foreign trade multiplier' (as it came to be called) attracted only a limited attention³ and after the appearance of the *General Theory* it disappeared as a rival candidate for the explanation of the failure to secure full utilization of resources. Harrod's theory was a simple application of Kahn's multiplier, taking exports as the exogenous variable and imports as a function of income, according to which 'total income will be reduced sufficiently as a result of a fall in exports to curtail expenditure on imports by the amount that exports have declined'.⁴ For reasons of historical circumstances, the world-wide nature of the depression, Keynes's theory, which put all the emphasis on insufficient *investment* in relation to the propensity to *save*, swept the field.

Yet the broad facts of British economic history supported Harrod more than Keynes—though this only became known as a result of Beveridge's researches⁵ some years later. As numerous studies have since confirmed,⁶ variations in exports regularly preceded variations in the level of investment in manufacturing industry in Britain by two to three years. In other words, Britain's trade cycle was a reflection of fluctuations of export demand: it was imported from abroad even during the historical

¹ Cf. R. F. Harrod, *International Economics* (Cambridge Economics Handbooks, 1933), ch. 6, pp. 104–20.

² Strictly, the theory assumes fixed *real* terms of trade or a fixed *real* exchange rate, not just the Gold Standard.

³ Except by the very few economists who were interested in how the Gold Standard functioned in the nineteenth century, such as P. Barrett Whale (cf. his article in *Economica*, 1937).

⁴ *Ibid.*, p. 111.

⁵ In *Full Employment in a Free Society*, 1943, Appendix A (prepared in collaboration with Mr Harold Wilson).

⁶ Cf. e.g. A. G. Ford, 'British Economic Fluctuations 1870–1914', *The Manchester School*, June 1969; R. S. Sayers, *The Vicissitudes of an Export Economy: Britain since 1880*, Sydney, 1965; *A History of Economic Change in England, 1880–1914* (Oxford, 1965), chs. 2 and 3.

period when Britain was by far the greatest industrial country in the world. The rate of expansion of her manufacturing capacity varied with the fluctuations in the volume of her exports.

Investment, therefore, in part at any rate, was not a truly autonomous factor; it was *induced* by variations in export demand. And it is a matter of considerable importance to know whether Britain's chronic unemployment problem was a consequence of her unsatisfactory foreign trade performance, or whether it was due to excessive savings relative to *spontaneous* investment. For it can be shown, on the basis of Harrod's foreign trade multiplier, that unemployment can be 'explained' by the potential excess of imports at full employment over the actual level of exports.¹ The Keynesian methods of demand management can achieve full employment by substituting Government loan expenditure for the additional exports that would be needed to secure full employment; but they can only do so at the cost of increasing imports above the level of exports, i.e. by creating a negative foreign trade balance.

The importance of the Harrodian export/import propensity relation for industrial countries is that it determines how fast manufacturing output will grow, both absolutely and relatively to the GDP as a whole. Owing to the importance of increasing returns, or economies of scale, of both a static and dynamic kind, in manufacturing industry, success in capturing an increasing share of the world market of manufactures brings cumulative advantages to the 'strong' economies, and a cumulative handicap to 'weak' economies whose market share is reduced in consequence. This kind of problem—the problem of slow growth—could not be adequately handled by demand management policies which concentrated (as the post-war UK policies aimed to do) on securing a certain rate of growth of *domestic* demand.²

¹ Suppose that exports correspond to 20 per cent of 'full employment' output, but 30 per cent of (marginal and average) income is spent on imports. In that case actual output will settle at two-thirds of 'full employment' output, since at that level both imports and exports will be equal to each other and to 30 per cent of output.

² A. P. Thirlwall has shown ('The Balance of Payments Constraint as an Explanation of International Growth Rate Differences', *Banca Nazionale del Lavoro Quarterly Review*, March 1979) that the 'dynamic' Harrod formula (which makes the growth rate of GDP of any particular country equal to the growth rate of the volume of exports divided by the *income* elasticity of its imports) is capable of predicting the growth rates actually achieved of different industrial countries remarkably closely and thereby accounts for a high proportion of the difference between the growth rates of different countries since the war (with the sole exception of Japan, for which the formula predicts even higher growth rates than were achieved). Britain has suffered from a low

The main limitation therefore in Keynes's analysis in the *General Theory* lay in the failure to realize the importance of increasing returns in manufacturing industry, and the importance of securing full employment *via* export-led growth rather than consumption-led growth. The recognition of these points would also have implied that the main objectives of governmental economic management should not be the maintenance of a constant pressure of domestic demand by means of fiscal and monetary policies but of influencing the relationship of exports to import propensities, either by indirect means such as subsidies to exports and/or taxes on imports, or by state intervention for encouraging the development of industries with a high export potential (as was done in Japan and also in post-war France).

This brings me to the third shortcoming in Keynes's analysis mentioned earlier. It follows from the existence of increasing returns to scale (as against the neo-classical assumption of universal constant returns) that the postulate of a clearly determined maximum output given by full employment and a 'natural' growth potential, given exogenously by the rate of increase in the supply of labour and capital and by the rate of technical progress, is illegitimate. 'In the long run'—which means considering the economy over a *period* of time, as against a *point* of time—the mere existence of 'full employment' does not imply that production is supply-constrained, since in all but the very exceptional cases there are always hidden reserves of labour in agriculture and services which could be mobilized if more labour were required to satisfy export demand.

Furthermore, the 'potential' growth of production of any arbitrarily defined section of the globe—whether it is a 'country' delineated by political frontiers, a region (such as Wales or Scotland) or a community of countries (such as the EEC)—cannot be taken as exogenously given, since if there were to be a

growth rate of exports (mainly on account of the industrialization of other countries) ever since the last quarter of the nineteenth century; her industrial growth was also held down by growing import penetration of foreign products in the British market which was only temporarily interrupted in the 25 years 1932–57, due to the introduction first of protective duties and then of quantitative import controls. By 1899, the import content of total supplies of manufactures (including home absorption and exports) in Britain reached 16 per cent. This was only slightly exceeded in 1913, and 1929; by 1937, the ratio was reduced to 10 per cent and in 1955 to 5 per cent, but from 1957 on it started to increase again. In 1980 the ratio was in excess of 25 per cent (for the historical figures, see Maizels, *Growth and Trade* (CUP 1970), Table 6.4).

shortage of labour or capital, there would be an inflow of both labour and investable resources. Thus, during the post-World War II boom, when Western Germany absorbed into her economy the many millions of Germans transferred there from other territories such as the Sudetenland or East Prussia, she supplemented her labour force by a succession of Italian, Spanish, Greek, and Turkish 'guest-workers' to the extent required to match the excess demand for labour; and Germany's example was copied by most other successful exporting countries of Western Europe, including small countries such as Austria, Switzerland, Holland, and Sweden. Equally, the growth of 'real capital' (in the sense of capital equipment of all kinds) was not exogenously determined by psychological preferences as between consumption and savings. If a higher rate of growth of demand required a higher proportion of resources devoted to capital accumulation, this was automatically forthcoming through a higher proportion of total income accruing as ploughed-back profits which provided the finance for it. Thus the growth of real incomes was not determined by the growth of 'factor supplies' because, on account of increasing returns, higher rates of production growth were invariably associated with higher rates of growth of productivity — the 'Verdoorn Law' — which came to the same thing as a higher rate of increase in the supply of labour; this equally implied higher rates of capital accumulation.

It follows from all this that, apart from the trivial sense in which everything that exists today was inherited from yesterday, there is no safe anchorage to be found in any exogenous 'resource endowment' and its natural rate of increase. All such notions are derived from assumptions such as that of linear and homogenous production functions, the universal existence of perfect competition and continuously clearing markets, where prices are settled through a heavenly all-knowing auctioneer who discovers the general equilibrium system of prices *before* any transactions are made, for the present and for all periods in the future. All these features of neo-classical theory have nothing to do with the real world, but are the product of the feverish imagination of mathematical economists who invented them so as to make profit maximization of the individual firm and perfect competition in perfect markets consistent with one another. Yet economic policies are based on models of the economy which are built with the aid of such assumptions, with far-reaching consequences for the way the world actually develops. For example, if Keynesian demand management policies are applied by reference to an

econometrically calculated potential growth rate of the economy, Keynesian fiscal and monetary measures, if successfully conducted, will make the calculated growth rate become the actually realized rate thereby confirming confidence in the econometric model—without any awareness that some other calculated growth rate might have also been ‘confirmed’ in this manner.

Notwithstanding these limitations I feel that Keynes’s macro-economic model was an enormous advance on what went on before, and made an important contribution to the long spell of uninterrupted progress and full employment of capitalist countries for two decades or more after the Second World War. However, the belief that a private enterprise economy does not require any central guidance or direction other than the fiscal and monetary measures necessary for maintaining effective demand at the correct level has proved insufficient for more than one reason. One reason was that it took no account of the strong disequilibrating forces, virtuous circles and vicious circles, arising out of the coexistence of competition and increasing returns, and requiring a policy of positive guidance and direction by the state to ensure that development proceeds along the most favourable lines.

The second and far more generally accepted reason was that Keynesian fiscal and monetary policies offered no solution to the endemic tendency to inflation of an oligopolistic economy with strong trade unions. There is plenty of evidence that Keynes became aware of the serious nature of this problem during the war but searched in vain for a practicable remedy. In the Keynesian model the price level of an industrial society, in a closed economy or under a system of variable exchange rates, depends on its level of efficiency wages—wages divided by the value of output per worker—of which one component, the level of money wages, is treated as exogenously given at any one time, a heritage of the past. But there is nothing in the model to determine the rate of change of money wages relative to the rate of change in productivity, and it has been the universal experience of capitalist countries in the present half-century that the former is invariably faster than the latter, though the gap is habitually greater in some countries than in others. It appeared probable from the start that wage-induced inflation would be more serious and show a stronger tendency to acceleration in boom periods with fast-rising profits and high levels of employment than in slack periods with low profits and high unemployment. This made it likely that Keynesian policies of economic management would themselves generate a cycle—Kalecki’s famous ‘political trade cycle’—

according to whether concern with inflation or concern with unemployment came uppermost in people's minds. But this political trade cycle is likely to have a much longer periodicity than the trade cycles of the past, which may be one possible explanation of the apparent dominance of the Kondratieff cycle in our century. (But that much be the subject of another lecture on some other occasion.)