CONTROVERSIES IN THEORISING ON GROWTH

P. R. BRAHMANANDA

I

Till recently all economics was virtually growth economics. It all started with Harrod’s seminal book on ‘Towards a dynamic economics’. While Hicks and Goodwin were pulling Harrod towards trade cycle theory, Joan Robinson, Solow and Brems dragged him on to the quest for equilibrated growth. This was rather curious. Joan Robinson was the high priestess of the Keynesian orthodoxy on income and employment theory. Keynes had scoffed at Robertson’s concept of ‘equilibrium over time’. In the long-run, we are all dead, said Keynes; the long-run, he also added, is a matter for the classroom. Keynes had also poked a lot of fun on Hayek’s (alleged) Ricardo-effect. In fact, one thing was common among the Keynesians, and that was an ‘Anti-Austrian’ point of view on matters of capital theory; incidentally, this period had coincided with the academic demonstration of the economic feasibility of price calculation in a socialist society. Hence, to be ‘anti-Hayek’ also meant ideological prestige.

The history of economics laughs at doctrines. In the Post-Keynesian period, the so-called Keynesians, themselves, started taking over, and with great relish, the concepts and positions which they had attacked with so much gusto just a few years ago. The long-run drove away the short-run; and, the Hayekian concepts became now members of the U-class. There was, however, a simple trick. Keynes and Hayek were obsessed with the marginal productivity theory of distribution. This theory created a barrier to the rate of accumulation. Naturally, the best course was to discard it, at least on the surface. But what about the label of Keynes? It was simple. Why not wake up the widow’s cruse of the ‘Treatise’?

It is thus we find the new growth theory being termed as the ‘Neo-Keynesian’ growth theory. Through price-level changes, the cruse enables the volume of savings to vary in such a manner as to equal the volume

* A review of Dr. Gautam Mathur’s Planning for Steady Growth: Oxford University Press, Indian Branch, Bombay. 1965. pp. xvi + 386,
of investment. The share of profits (and of wages) would now be the crucial variable. All that was required to fix the pattern of distribution was some assumption concerning the marginal propensity of savings being higher for profit-incomes as compared to that for wage-incomes. Granted the above assumption, which one could term also as ‘the classical savings assumption’, one could concentrate upon variations in the rate of investment as the crucial factor determining the price-level and the class-distribution of incomes. To term it ‘classical’ was indeed superb. Nobody would query why the same assumption cannot fit in the Neo-Classical theory! ‘Neo-Keynesian’ theory could now take credit for being also a ‘classical’ theory! How to fit in the choice of techniques? Kaldor simply brushed aside the possible impact upon the capital-output ratio of variations in investment. This is certainly a problem for Joan Robinson. Some manoeuvrability could be obtained by the postulate of discontinuity in the choice of technique; another way out would be to abandon the assumption of full employment. (This position has not yet been reconciled with the doctrine of the downward sloping demand-schedule for factors, which the ‘productivity-curve’ approach, as in the writings of Joan Robinson, must lead to.)

Any way growth theory got started. In place of the old concept of static equilibrium, there emerges now the concept of the ‘golden age’ which is none other than Robertson’s ‘equilibrium over time’ or Marshalls’ ‘moving equilibrium of steady growth’ or Schumpeter’s ‘growth’. (A peculiar quality of most of the ‘growth’ theorists is that they do not refer to parallel contributions, particularly if they are from across the continent, and never at all, if they are from India! Hell is the other economist!) When once employment and under-development are introduced, there emerges a whole calendar of ages, with rather picturesque terminology. There are pedigree golden and platinum ages, and bastard golden and platinum ages; galloping ages and creeping ages; so on. One almost is reminded of Browning’s classification of rats in Hamlin!

II

Dr. Mathur’s book belongs to the main stream of Cambridge (England) writings on growth. Dr. Mathur’s special interest is in ‘steady growth’, and with reference to underdeveloped societies. His book is divided into seven parts dealing successively with, (1) Attitude to Planning, (2) Technological structure, (3) Types of growth, (4) Choice of the Dominant steady-
state, (5) Long-term states of transition, (6) Progress of technical knowledge, and (7) Various notes. Dr. Mathur's book covers partly the ground traversed in Joan Robinson's 'Accumulation of Capital', and partly that, independently touched upon, in Sir John Hicks' 'Capital and Growth'. However, Dr. Mathur's main predilections are mostly with Joan Robinson. In fact his work is truly a continuation of the thought-patterns woven in her 'Accumulation'.

In what follows, we shall concentrate upon three or four fundamental aspects of the theoretical portions of the work.

III

Joan Robinson, and even Sir John Hicks, have objected to the conception of capital as an abstract fund of productive power which has the property of flowing in different forms without losing its 'value'. The homogeneous property of capital is also referred to as its 'jelliness'. Samuelson has tried to show that though outwardly capital has heterogeneity and specificity it can be transformed into a fund of productive power. He uses the linear programming apparatus to justify the essential soundness of the (J. B.) Clarkian concept. Dr. Gautam Mathur appears to be on the side of Joan Robinson in this dispute.

Let us accept the Hicksian or this writer's version of the choice of techniques problem. This version has great affinity to a possible interpretation of Sraffa's treatment of the issue assuming possibility of change. Assume that different techniques have the same basic goods, though these are taken in different proportions in the standard commodity of the different techniques. At some equal rate of profit and offsetting standard wage, termed switching points, any two (or more) techniques become perfectly similar to each other in their structures of relative prices. At switch-points the economic system is indifferent to the technique or the mix of techniques it chooses. Off switch-points, one or the other technique alone becomes dominant. Hence, the economic system has as many capital and output potentials as there are techniques, which become relevant at some switch-point or the other. Following Sraffa's procedure, we may adopt an improvised standard to evaluate the different potentials. As the basic goods are the same on all the techniques, it follows that, given sufficient time, for analytical purposes, the stocks of basic goods are perfectly malleable, homogeneous and versatile,
though the improvised standard quantities may differ on the different techniques. In this sense, the error in Meade’s approach was that he did not define capital in terms of the various capital-potentials contained in a stock of goods, which alone are basic in different techniques. We may term this stock as 'leets', 'jelly or putty capital', 'marble capital', 'abstract fund' etc. Provided we stick to the postulates of the switching approach that (a) there are different techniques, (b) these are formed out of the same basic goods, and (c) there are some switch-points, where one or the other technique does become eligible with some other (or others), Meade’s 'substance' has a great deal of substance. The switching postulates permit of paradoxes; but this does not affect the substance of this 'substance'. As Samuelson and Solow have accepted the implications of 'switching', and, have even admitted the paradoxes, the attack of Joan Robinson against the 'abstract fund' approach collapses. In fact, even professor Hicks who appears to define capital as a measure of the productive power of the depreciation fund may not have realised that his version is indeed the same as that of J. B. Clark! If only both Meade and Swan had defined capital as 'a measure in terms of an improvised standard of the 'Meccano' of techniques capable of being formed out of a given stock of basic goods (and of labour)' they would have been perfectly correct.

IV

A second point of dissatisfaction, which Dr. Mathur appears to reveal, against orthodox theory, pertains to the alleged neglect by the latter, of the implications of the so called Wicksell effect. Wicksell, it may be recalled, was bothered by the difficulty that would be caused to the evaluation of capital, when the wage-rate undergoes a variation in a dynamic context. Suppose, in a full-employed economy accustomed to a particular rate of growth of population and capital, we introduce a sudden burst in savings ratio above that which was normal. As a result, argued Wicksell, the wage-rate would tend to go up; the interest rate would fall. It would now pay the capitalists to elongate the capital-structure. The extent of the fall in the rate of interest would thus be minimised by the process of deepening of capital. (As Uhr notes, there is also a Wicksell-effect—in-the-reverse, when, with given savings-ratio, a change in population growth occurs.). Wicksell thought that the social marginal productivity of capital would be lower than the private marginal productivity of capital. (In the Wicksell-
effect—in-the-reverse, the social marginal productivity would be higher than the private marginal productivity). Wicksell’s object was to show how, through deepening, the prophecy of Mill that, with every burst of savings above that required to equip population growth with identical capital, the wages would rise to absorb the whole of the potential excess savings, would be disproved. By using Bohm-Bawerk’s concept of deepening, Wicksell had given a new lease of life for capitalism.

In the discussion of Joan Robinson, the Wicksell effect appears to have got perverted. The Robinsonian Wicksell effect is truly a boat loose from its moorings, to use Hicks’ expression in another connection. Joan Robinson is bothered about the potential effect of variations in the rate of wages and hence of rate of interest upon the prices of individual capital goods, and upon the ‘quantity’ of macro-capital. In the first edition of her ‘Accumulation’, she followed the procedure of assuming that more capital-intensive goods or techniques would have their prices or costs boosted up more, when wages rose and interest fell. Less capital-intensive goods and techniques would have their prices depressed more when wages rose and interest fell. Joan Robinson adhered to the fundamental postulate of keeping the relative ranking of the capital-intensities undisturbed by different patterns of distribution. However, she noted the possibility of perverse effects, but she carefully kept it outside the frame-work of her main discussion on the choice of techniques. Dr. Mathur has carried Mrs. Joan Robinson’s procedures through all their logical implications.

Dr. Mathur’s procedure may now be described. Outputs appear to have been evaluated by a standard commodity. Equipments, mainly capital, to Dr. Mathur, are also evaluated in terms of some standard commodity. Dr. Mathur appears to believe that a suitable mix of consumption goods can serve as a convenient standard. He visualizes the following possibilities: A rise (or fall) in the wage rate keeps the value of the equipment unchanged; this is the neutral Wicksell-effect. A rise (or fall) in wages raises (or lowers) the price of the equipment; this is the positive Wicksell-effect. A rise (or fall) in wages lowers (or raises) the price of the equipment; this is the reverse-Wicksell-effect. In the neutral-Wicksell-effect case, a rise in wages reduces the values of output and of capital in terms of wages proportionately. In the positive-Wicksell-effect the value of equipment in wages is reduced less proportionately than is the value of
output. In the reverse-Wicksell-effect, the value of equipment in wages is reduced more proportionately than is the value of output. But, notes Dr. Mathur, in all these three cases, with a rise in wages the order of mechanization will tend to move up; there is a physical shift to more mechanized techniques. In other words, if we are thinking purely in terms of the relationship between capital per labour and output per labour, a rise in ‘capital’ per labour raises productivity per labour, though the ratio between the increments of ‘capital’ and increments of output would have a tendency to fall with successive application of increments of ‘capital’ to labour. Thus Dr. Mathur does believe in the hypothesis of some concept of a positive marginal productivity of capital. In fact such a belief is fundamental to his theory of growth. The alleged Wicksell effects create a smokescreen which hides the similarity of the belief in the marginal productivity of capital in the writings of Joan Robinson, and of Dr. Mathur to that in the writings of Wicksell, Hayek, Hicks, Samuelson, Solow, et. al. Tweedledum and Tweedledee had greater differences!

V

One may have easily observed that the alleged Wicksell-effect is no longer the pristine Wicksell-effect. In fact, if we accept the old marginalist procedure, in any equilibrium situation, the macro-ratios of capital to labour and of capital to output are unchanged whatever happens to the pattern of distribution. The entire structure of capital must be taken as a single piece. Different technologies or structures cannot co-exist in the same situation. (In a traverse, or transition they may co-exist; but one technology or structure is bound to give way to the other.) The doctrine of the marginal productivity of capital implies simply that, if the savings ratio is above that needed to equip population growth with similar and equal per capita capitals, and, if there is full employment, the rate of interest must be falling. There will be a long time lag before which one can reach a stage of the equality of the rate of interest to population growth rate.

What happens to the pristine Wicksell-effect? There is here a problem of evaluation. It is to the great credit of Mr. Sraffa, that he appears to have found a solution to the original Wicksell-puzzle. Any going-capital structure, at any particular rate of interest, is equivalent to so many identical batches of equipments over the average life-time of the structure.
When the rate of interest is zero, the outstanding batch will be one-half of the equipments in the structure. As the rate of interest goes on rising, the outstanding batch will become less and less than one-half of the equipments in the structure. In this sense, as the rate of interest falls and wages rise, the outstanding batch becomes closer to one-half of the number of fresh equipments in the structure. If the maximum rate of profits rises, following Bohm-Bawerk, because of the postulate of deepening, we have introduced a physical change. One may have to evaluate the different structures by postulating that the system is growing at the maximum rate of profits and by assuming that the same standard commodity rules. Every pattern of distribution belonging to a higher MRP will have a larger ‘quantity of capital’ interpreted as the equivalent number of identical equipments accumulated over the average life-time of the existing structure than a similar pattern belonging to a lower MRP.

One has, therefore, to question the propriety of evaluating capital and output by means of the standard of ‘wages’, as Dr. Mathur appears to have done. If we are thinking of a whole structure, the capital-labour and capital-output ratios will be unchanged. This means that, even in terms of Dr. Mathur’s standard, macro-structures are always neutral! The choice, therefore, will have to be between different whole structures. In that case, analysis in terms of individual items has no meaning. Dr. Mathur, therefore, cannot be put in the category of the old style capital theorists like Bohm-Bawerk or even Wicksell (?)

VI

In fairness to Dr. Mathur, we must say that he also is concerned with choice among whole structures. This however, assumes that the same and only the same goods are basic in all the structures. This is crucial. Note that only consumption-goods won’t do; wages, thus interpreted, cannot by themselves exhaust the standard. As Dr. Mathur appears to approve of the postulates of the linear programming approach to the choice of the techniques (rather, technologies) problem, he has to reckon with the following possibilities; (a) at switch-points different technologies in vogue are equally feasible; (b) when double-switches occur, technologies of different capital-intensities may reverse their relative order of feasibility; (c) if double switching is admitted, every technology may become at least twice feasible. Thus, ordering on the basis of capital intensity does not
help us to choose one or the other technologies, as wholly superior: (d) one may even conceive a situation where the switch possibilities are such that as the rate of interest goes on rising, more and more capital intensive technique are becoming increasingly in vogue! This by itself makes nonsense of the whole concept of the factor–price frontier! Worse, it renders meaningless the whole notion of factor prices: (e) even in a fixed coefficients case, different mixes of goods or of processes may obtain different positions for each interest rate, in the relative ranking of capital intensities. Here also, as the interest rate rises, the desired capital intensity of the system may be rising!

It we stick to the linear approach, the full implications of switching are such as to destroy the basis of any analytical meaning to be given to the concept of wages or of the interest rate in the doctrine of the choice of techniques.

This is not all. Switching presupposes our ability to discover the whole range of the possible prices sets, one for each pattern of distribution; and one range for every technology. This calls forth for a body of knowledge which is simply not available. One must, therefore, advice great caution in jumping from algebra or diagrams to empirical investigations; and from investigations, to economic policy. Unfortunately, there is nothing that economic theory can contribute to the choice problem in growth. Dr. Mathur occasionally gives the impression that he is concerned with concrete planning. However, the reader is warned that no such luxury can be permitted.

Again, why should switching possibilities be permitted? Because two identical sets of basic goods get a similar set of prices at a common wage and profit rate? In this case, why should not the two structures be the same? If we take the joke, we will be more eager than we are to move over to the no-change hypothesis! Granted that we rule out switching and go over to the Ricardo–Sraffa case, where the postulate of change has no place, we immediately find that we cannot share Dr. Mathur’s complacency concerning the relation of all this to the labour theory of value. If economics can have knowledge of only a no-change system, the labour theory of value appears as the only logical corollary. Dr. Mathur appears to scoff at the possibility of reducing capital into compounded labour; as Sraffa has pointed out, if we assume a ruling rate of profit below the MRP, and if we abstract
from joint products and fixed capitals, in the form of durable instruments, we can, by going sufficiently backwards, obtain rough measures of the compounded-labour values of capital stocks. Durable instruments can be treated later as non-basics.

VII

There is a great deal of insight and fresh thought in Dr. Mathur’s book on a number of practical issues concerning growth. Our observations have pertained only to the theoretical core of the book. Dr. Mathur has the extra-ordinary gift of lucid exposition. His ability to communicate, through simple arithmetic, even the most complicated abstract discussions is truly amazing. His vocabulary is indeed picturesque. All these qualities certainly add to the glory of Dr. Mathur’s achievement. If some thoughts in this book appear to this writer to be not in harmony with the latest trends in the subject, it is more a tribute to the fast pace at which economics is changing, and certainly no detraction from the credits richly deserved by Dr. Mathur. But for the implications, as seen by this writer, of Mr. Sraffa’s monumental book, Dr. Mathur’s work would have been the next big step in the theory of growth from Joan Robinson’s ‘Accumulation’. There are many Cambridges even at one Cambridge.

[हेरोइन ‘गतिशील अर्थशास्त्र प्रति’ पुस्तक बाह्य विकासना अर्थशास्त्री श्रद्धांजलि हें. लेकि जो लेन रचितक संरचना आपक अनि रचितकाल सिफथ्यांत्री उपस्थित करें जें तेंम ज्ञानी तेंमें यू विकासना अर्थशास्त्र विषे विषयांत अन्त अवश्यां चे.

अर्थशास्त्रांना बांग्लादेशाना संपूर्ण विकासती अर्थां बाह्य विकासना सिफथ्यान्त्री ‘नव-संरचना’ नंते विकास सिफथ्यान्त्री अनं गेंदे चे.

पिनेव्हा विकासना सिफथ्यांत्री विकास येते. परंतु आं सिफथ्यांत्री रात्री विकाळ राही छ जे तेंगां. अर्थशास्त्री अर्थशास्त्री अथलानी काही नांब लेता तेंती ‘अनं’ अथल काही ‘भारतीय अर्थशास्त्री’ काहीं होय ता तेंती उपेक्षा न अंती होय चे.

दा माहुरूल पुस्तक ‘प्राचीन हैरे रेडी शाख’ विकासना अर्थशास्त्र अथलाने अंतां पुस्तकरांना ध्येय अनांवणातीं ते. पुस्तक सात विकासांना पहेचायलु हे: (१) आर्थिक तरस्ती दिशी (२) वांछनीतिक रत्ना (३) विकासना अधिक (४) रिचर्ड पघोळी रस्तेशी (५) बांग्लादेशानी सकाळिंग्रा (६) वांछनी माननी प्रगती अनं (७) अनं आर्थिक.
\( \text{Dr.} \) माधुरस\( \text{ा} \) अभ्यास अो\( \text{क} \) रीति \( \text{ता} \) \( \text{नेन} \) \( \text{शेरिन} \)-\( \text{सन्} \) \( \text{ना} \) 'अग्रुमुङ्क्षेषनः ओऽक देपांत'\n
\( \text{नेन} \) \( \text{शेरिन} \)-\( \text{सन्} \) \( \text{ने} \) \( \text{अने} \) \( \text{सर} \) \( \text{नोहन} \) \( \text{सिंसे} \) \( \text{पणु} \) \( \text{देपांत} \) \( \text{ने} \) \( \text{अग्रुर्त} \) \( \text{कर्मलक} \) \( \text{कर्तिक} \) \( \text{गाय} \) \( \text{साने} \) \( \text{वाला} \) \( \text{नीरा} \) \( \text{चे} \). \( \text{Dr.} \) \( \text{माधुर} \) \( \text{पणु} \) \( \text{आयो} \) \( \text{मत} \) \( \text{धरण} \) \( \text{होय} \) \( \text{नेन} \) \( \text{लागे} \) \( \text{चे} \).

\( \text{Dr.} \) \( \text{माधुर} \) \( \text{उपाख्यात} \) \( \text{दाप} \) \( \text{अक} \) \( \text{हां} \) \( \text{पोरु} \) \( \text{वार्तन} \) \( \text{आधार} \) \( \text{उपर} \) \( \text{राष्ट्रु} \) \( \text{चे} \). \( \text{आ} \) \( \text{मारे} \) \( \text{उपरेग} \) \( \text{वर्तुभा} \) \( \text{ने} \) \( \text{अहुर्त} \) \( \text{सम्ब्रह्म} \) \( \text{ते} \) \( \text{जो} \) \( \text{पसंद} \) \( \text{कर्य} \) \( \text{चे} \).

\( \text{चे} \) \( \text{चे} \) \( \text{Dr.} \) \( \text{माधुर} \) \( \text{मूर्त} \) \( \text{सं} \) \( \text{स्म} \) \( \text{मारे} \) \( \text{मात्र} \) \( \text{अनेक} \) \( \text{अक} \) \( \text{आंतिम} \) \( \text{कार्य} \) \( \text{पात} \) \( \text{नथी} \). \( \text{अवस्था} \), \( \text{गतिथात} \) \( \text{समावती} \) \( \text{कर्त्तनम्} \) \( \text{आ} \) \( \text{शक} \) \( \text{चे} \). \( \text{परंत} \) \( \text{गतिथात} \) \( \text{सम्ब्रह्मा} \) \( \text{मूर्त} \) \( \text{चे} \) \( \text{मात्र} \) \( \text{सही} \) \( \text{पुष्करत} \) \( \text{तथा} \) \( \text{श्री} \) \( \text{तथा} \). \( \text{नथी} \).

\( \text{Dr.} \) \( \text{माधुर} \) \( \text{ता} \) \( \text{उत्सकम्} \) \( \text{विख्याते} \) \( \text{वग्नता} \) \( \text{भावकार्य} \) \( \text{मुख} \) \( \text{धर} \) \( \text{यान} \) \( \text{नरी} \) \( \text{विभारा} \) \( \text{लेख} \) \( \text{चे} \). \( \text{सर} \) \( \text{वर्षन} \) \( \text{शीती} \), \( \text{समीत} \) \( \text{रवण} \) \( \text{शव} \) \( \text{प्रेयोग} \) \( \text{चे} \) \( \text{वाणिज} \) \( \text{का} \) \( \text{कृष} \) \( \text{चे} \). \( \text{Dr.} \) \( \text{माधुर} \) \( \text{नन्दिना} \) \( \text{लिखिता} \) \( \text{इमे} \) \( \text{चे} \).

\( \text{नो} \) \( \text{खंडना} \) \( \text{महान} \) \( \text{उत्सकम्} \) \( \text{विख्याते} \) \( \text{ता} \) \( \text{Dr.} \) \( \text{माधुर} \) \( \text{ता} \) \( \text{उत्सक} \) \( \text{नेन} \) \( \text{शेरिन} \)-\( \text{सन्} \) \( \text{ना} \) 'अग्रुमुङ्क्षेषनः' \( \text{पृष्ठी} \) \( \text{विख्याता} \) \( \text{सिद्धांत} \) \( \text{मारे} \) \( \text{णीहु} \) \( \text{आगतयु} \) \( \text{अहान} \) \( \text{गाय} \) \( \text{राम} \).]