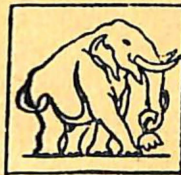


THEORY OF ECONOMIC GROWTH

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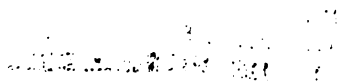
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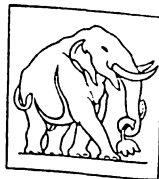
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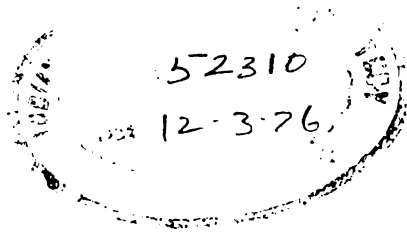
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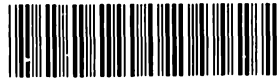
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THEORIES OF ECONOMIC GROWTH

RAPPORTEUR — AMLAN DATTA

By the last quarter of the nineteenth century, a schism became quite evident in the community of economists, a schism which the methodological battle between the German historical school and the Austrian economists led by Menger served to highlight. Long before this controversy another German, Friedrich List, had with uncanny foresight sensed the nature and source of the division which was to overcome the economic profession. List's own interest was mainly in what he called "the theory of the 'productive power'", in other words, the theory of economic development. In Adam Smith's great book, List perceived a division of interest between two distinct questions, one of which concerned the determination of exchange value while the other involved an enquiry into the causes of economic progress or the development of the productive powers of society. Adam Smith, List complained, should have "followed up the idea of 'productive power' without allowing his mind to be dominated by the idea of 'value', 'exchange value'". (*The National System of Political Economy*, Ch. 12.) List was not really suggesting that there should be no place in economics for a theory of value; but he suspected that the enchantment of value was so great that it might divert the mind of the economist from what should be his main concern, viz., a study of economic growth.

Richard Whateley, proposing that the name 'political economy' be discarded in favour of 'catalactics' or the science of exchange, represented a trend in economic thinking threatening to overshadow the larger enquiry into the causes of the wealth of nations. The risk of a split was so much the greater because the type of mind and the analytical methods necessary for an understanding of economic growth in its concrete manifestation is different from the type which feels at home in what Walras was later to call 'pure' economics. The battle of methods in the late nineteenth century was to a great extent a battle between these two different kinds of preoccupations. In the last decade of the century, J. N. Keynes, surveying the earlier controversy with uncommon detachment in his celebrated treatise on *The Scope and Method of Political Economy*, brought out the difference with striking perspicacity when he remarked: "The theory of economic progress is more distinctly subordinate than are other portions of economic doctrine to general sociology". So great, however, was the power of the new techniques of marginal analysis that those who continued to busy themselves with the study of

economic progress and combined it with historical and sociological interests were virtually pushed out of the fraternity of economic scientists and were barely tolerated as distant cousins.

It must, however, be recorded that the classical economists from Adam Smith through John Stuart Mill down to Marshall, if the last named can be given the classical label, never allowed themselves to be converted into 'pure' economists, though Marshall did much to get marginal analysis accepted in academic circles, and continued to show their attachment to economic development quite openly, and, to that extent, harboured unashamedly historical and sociological interests. "Mill's theory of economic growth", writes J. L. Dholakia, "may be described as socio-economic rather than economic". This would equally hold for Smith and the other great economists of growth, including Marx and Schumpeter.

It is useful, for the sake of perspective to pause here for a moment and try to understand how exactly sociological factors come in, in the growth theories of Mill and Smith.

Mill was a legatee of the tradition of the enlightenment which taught that the progress of knowledge was the root of all progress. Knowledge promotes economic development by the increased power that it gives to control the environment. "Of the features which characterise (the) progressive economical movement of civilized nations," wrote Mill, "that which first excites attention is the perpetual...growth of man's power over nature...increasing physical knowledge is now, more rapidly than at any former period, converted, by practical ingenuity, into physical power" (*Principles of Political Economy*, BK. IV, Ch. I, section II). In his discussion on the productivity of labour he stressed how "the efficacy of industry is promoted...by the amount of knowledge of natural powers and of the properties of objects, which are turned to the purposes of industry" (*Principles*, BK. I, and 7, iv). In stressing the importance of knowledge, including the art of its practical application, Mill was typical of the majority of the classical economists. Adam Smith, for instance, long before the current vogue, had already stressed the special importance of investment in what we now call 'human resource development', and he spoke of the education and training of the worker as "a capital fixed and realised, as it were, in his person" (*Wealth of Nations*, BK. II, Chapter I). When Dholakia, in the third section of his essay, writes that Mill "did not emphasize the narrow role of education as a utilitarian agent and diffuser of technical knowledge", he is making a point which he might better have left out. He is nearer the mark when he himself observes, in the preceding section of the same essay, that "education played a more important role in Mill's theory of economic

growth than did any other factor because it increased man's technical capacity to overcome the niggardliness of nature".

This leads us on to our next point. If the progress of knowledge and technology is the key to economic progress, what are the chief obstacles on the way? The obstacles are of two principal kinds. There is first the impediment arising from the 'niggardliness of nature'. To this we shall come back a little later. Before that let us pay attention to obstacles created by man himself, the outmoded institutions and customs brought over from a less enlightened and less developed stage of society. "The despotism of custom is everywhere the standing hindrance to man's advancement". The relevance of this indictment should not be lost upon us, particularly after the recent movement for a legal ban on cow slaughter.

Among outmoded institutions, both Mill and Smith emphasized the hindering effects of antiquated systems of land tenure which discourage productive labour and investment. Dholakia quotes from Mill some very powerful passages in this connection. Again, these passages have a clear relevance to the contemporary situation in many underdeveloped countries, including India.

Brahmanand Prasad has drawn attention to the importance that Smith attached to the trade between agriculture and manufacture. It is usual to develop this point in terms of the widening of the domestic market that results from such trade and the impetus that agriculture receives to produce a surplus for this purpose. The essential argument had, in fact, been stated by Sir James Stuart even before Adam Smith, and it is to Stuart that the credit for originality should go. The central point in the argument is quite simple. The desire for agricultural products as consumer goods is quickly satisfied and if nothing else happens stagnation sets in easily. Trade between country and town produces a psychological break-through; the peasant is confronted with a much wider choice of new and seductive consumer articles to procure, so he is now induced to produce a surplus which he can offer in exchange. "Methods relying on market forces are of marginal significance", writes B. S. Sindhu, and he stresses as a counterpoint the importance of social obstacles. To the classical economists, this kind of distinction would seem pointless. They would stress the importance of both; and surely the more recent experience in different countries leaves one in no manner of doubt about the importance of producing for a market to agricultural development.

Indeed, the significance of trade between country and town goes deeper than what one might be led to suppose so long as one thought in

terms of a widening of the market only. Smith, in spite of his preoccupation with the extent of the market, did see deeper; and so did some other eminent economists before him and after. The market is not simply a place for commerce in commodities, but it also quickens the commerce in ideas. New ideas, the fruits of the advancement of science, come first to the cities. The commerce between country and town helps enlightenment and new techniques of production to penetrate rural society. As Smith did not fail to notice, the same process helps also to bring about institutional changes of a far-reaching character.

While we are still on the subject of institutional changes with special reference to agriculture, we may as well take note of an interesting difference between Marx, on the one hand, and Smith and Mill, on the other. Marx apparently did not believe in the possibility of much improvement in agricultural practice on the basis of small-scale farming. "Small landed property", he wrote, "creates a class of barbarians standing halfway outside of society", and he went on to add: "Large-scale industry and large-scale mechanized agriculture work together" (*Capital*, Vol. III, Moscow, p. 793). In his grand vision of capitalist development, Marx thought of the 'contradiction' between the private ownership of the means of production and the social character of production growing acute in a parallel way in agriculture and industry, thus pointing towards the overthrow of private proprietorship and the establishment of social ownership in both sectors. Mill, however, made a more discriminating statement. In industry, he wrote, "the form of association which must be expected in the end to predominate is ... an association of the labourers themselves, on terms of equality, collectively owning the capital". But a careful study of conditions in Holland, France and elsewhere led him to conclude that "the superiority of the large system of agriculture is by no means so clearly established as in manufactures," and further that "there is no particular advantage in setting a great number of people to work together in ploughing or digging or sowing the same field. ... A single family can generally supply all the combination of labour necessary for these purposes". (*Principles of Political Economy*, BK. I, Chapter 9.) He did not omit to mention some of the handicaps of small proprietorship. But these can often be overcome by co-operatives for specific purposes and government aid and assistance supplementing the work of small cultivators. One is struck here by Mill's undogmatic approach. He is not too attached to the cause of private property to favour co-operative ownership in industry, nor too completely given up to the idea of socialism to prefer a suitably modified regime of cultivating ownership in agriculture. He is under no illusion about the permanence of capitalism as he witnessed it in his time; but he is flexible in his recommendation of institutional changes. The pro-

gress of enlightenment, with all that it involves, can make itself effective through a diversity of institutional forms under different circumstances.

There is one great limitation to the classical vision of economic development. This arose from a persistent obsession with the law of diminishing returns as it was supposed to apply particularly to agriculture. With all their faith in knowledge as power, the classical economists still believed that the limitation of the global supply of land would, sooner or later, set up a decisive barrier to material progress. New knowledge and new techniques of production might only temporarily overcome the obstacle from the niggardliness of nature, but after every victory the old problem would arise anew. The conclusions that Mill derived from this were not particularly pessimistic. Given an enlightened outlook on population, mankind should be able to settle down with limited numbers at a high and comfortable standard of living. But the end is still the stationary state.

Was Marx free of this particular limitation of classical thought? He certainly did not think of economic development ending up in the stationary state. He was intensely aware of the continuous development in history of the forces of production. He described in vivid and powerful phrases the improvement in the techniques of production that the bourgeoisie had brought about under capitalism. He was aware that the progress of techniques resulted in increasing labour productivity. Subrathesh Ghosh, in particular, draws attention to this aspect of Marx's ideas.

Yet the idea of diminishing returns crept in unnoticed by Marx in the corpus of his economic doctrine, and it did so with such force and effect as to determine the character of that doctrine in some essential respects. Like Ricardo, Marx too enunciated a law of the falling tendency of the rate of profit, which, as P. H. Prasad points out, is regarded as "a fairly weak link in his chain of analysis" by some very sympathetic critics. Assuming rising organic composition of capital and a constant rate of surplus value, it has been shown that the rate of profit is bound to decline over time. Let us ignore the technicalities and try to understand the essence of the matter. The rising organic composition of capital, or the increasing use of 'constant capital' in combination with labour, takes place to the accompaniment of improvements in the techniques of production and increasing labour productivity. At the same time, Marx assumes that wages remain at the subsistence level. Indeed, Marx's law of increasing immiserization of the proletariat can be interpreted in an even stronger sense. But let us leave that aside. The main point is this. If labour productivity is increasing generally while wages remain at the

subsistence level, a decreasing share of the total labour is necessary to produce the labourers' means of subsistence and, therefore, the rate of surplus value will be increasing; but, on that basis the law of declining rate of profit cannot be deduced. It is not reasonable to maintain simultaneously the subsistence theory of wages and the law of declining rate of profit in the face of increasing labour productivity. If the first two are essential parts of the Marxist doctrine—and much of the appeal of Marxism and its prophecy of capitalist crisis depend on them—then Marxian theory is, in effect, assuming diminishing returns from capital. If diminishing returns are thus assumed against one's better judgement and without any distinction made between agriculture and manufacture, this is hardly satisfactory. One should think that in strict theory it is less unsatisfactory to adopt the law of diminishing returns explicitly and confine it to agriculture.

Much of the sharpness of the Marxist theory of capital accumulation arises from the same reason. In reading Adam Smith one feels that the additional capital in the process of development becomes available to no small extent as a result of increased productivity due to specialisation and better allocation of resources or the application of improved techniques. One is thus released from that static frame of analysis in which profits can only grow at the expense of wages or vice versa. Marx is superbly dynamic in much of what he wrote. Yet when he discusses the question of the accumulation of capital and the forms of exploitation labour, one has the feeling as though one has been put back in the static frame. It is arguable that this is only one stage in the development of Marx's analysis, that is, in the unfoldment of his method of abstraction or successive approximation. But then the fact remains that the characteristic flavour of Marxism derives from conclusions associated with the earlier stages of analysis in this ascent through successive approximation; and the more we approximate the end the closer are we to the conclusions of the 'revisionists'. When the more restrictive assumptions are withdrawn, rising standard of living for the working class over time is seen to be consistent with the accumulation of capital, capitalist development is relieved of the intensity of its inner contradictions as originally conceived, and a new vista of gradual change and transformation of the industrial economies opens up.

Nor does the perspective change only for the advanced industrial countries. Even the phenomenon of 'primitive' capital accumulation appears under a new light. So far as the stresses and strains of this early phase of transition are concerned these are even more acute and painful than what a purely "material" account of the process would suggest; for they do not arise only from material deprivations, but also from moral

insecurity. But we are concerned here with a more limited aspect of the question. As Ghosh rightly points out, in discussing primitive accumulation, Marx drew attention particularly to the dispossession of small producers in the traditional sectors of the economy. In agriculture, for instance, the enclosure movement in England led to the uprooting of many small cultivators, who were thus forced to join the ranks of the proletariat with opportunities for the leaders of the new capitalist enterprise to exploit their labour. But there is also a rather less gruesome aspect of the process of capital accumulation even at the early stage of capitalist development. Productivity in agriculture increased as a result of a new rotation of crops, better drainage, more effective application of manure, and certain other forms of investment not involving very large initial amounts of capital. By a series of chain reactions for instance, increased supply of fodder making possible the maintenance of a larger livestock, which yielded more natural manure and also helped to diversify agriculture — capital accumulation was assisted thanks to a judicious application of new knowledge of better farming. There was also a subtler and more profound change which John Rae described under the title of 'effective desire of accumulation'. At any given stage of social and cultural development, people are, so to say, habitually attuned to a certain range of economic foresight. In *Some New Principles on the Subject of Political Economy*, John Rae, whom Mill quoted with approval, pointed out that "there is (at a less developed stage of society) a want of the habit of perception and action, leading to a constant connection in the mind of those distant points and of the series of events serving to unite them." In other words, innovations connecting the present with a more distant point in the future than the normal span are not sought out or adopted because the mind is not in the habit of acting with that degree of forethought. Conversely, more forward-looking investments are undertaken and capital accumulation is hastened with a strengthening of the effective desire of accumulation. Thus, a complete theory of capital formation, even at the earlier stage of capitalist transition, has more dimensions to it than a simple theory of exploitation takes into account.

Ideas regarding population control also require to be presented in this wider framework. It is wrong to consider this matter as though it were simply a question of adopting a new mechanical device unrelated to the cultural background and general economic outlook of the people. The idea of population control should come as part of a wider educational movement which aims at instilling in men a new confidence in their capacity to control the future and improve the material conditions of life. It would then be unrealistic to assume, as Amritananda Das seems to do, that controlling numbers would leave people's propensity to save (and

spend on the education of the children) unaltered, since both would be the result of the self-same change in the outlook of the community. The struggle for economic development is quite often not so much a struggle against 'vested interests', but against fixed habits or customs rooted in an older culture. These curiously are sometimes presented as interests because it seems more rational (revolutionary) to fight for (against) interests than against mere habits or wonted ways of life. Food habits (e. g. vegetarianism versus non-vegetarian diet) are habits before they are interests (or else how does one explain the difference between Hindus and Muslims in India); and the same is true at a deeper level of active curiosity (which, as Haldane complained, is particularly weak among us) and the somewhat unreligious propensity to take thought of the morrow.

Economic growth then is to no small extent a matter of social engineering. Backwardness cannot be explained and the strategy of development cannot be settled without reference to a wider social background. This is particularly true of those transitional periods when institutional and cultural changes appear as preconditions of development. It will be wrong to allow economics to be submerged by sociology; but at this stage of India's development it will be infructuous to keep them strictly apart.

GROWTH ECONOMICS AND THE POPULATION QUESTION IN UNDERDEVELOPED COUNTRIES

AMRITANANDA DAS

SUMMARY

Currently fashionable theories of economic development do not sufficiently analyse the interactions between population change and other factors in a process of economic transition. After critically examining some modern attempts to answer the question of whether and how much a particular underdeveloped economy ought to spend on population limitation, the author turns to the one pre-modern attempt which should, in principle, provide the answer : the Optimum Population Theory.

A rigorous restatement of the theory in mathematical form leads to the conclusion that its significance has been considerably misinterpreted due to an incorrect definition of the index of population maladjustment. It is *not* true that a growing gap between actual and optimum population implies the need for population control. In fact, taking the costs and gestation lags of population control programmes into account, it is doubtful whether the theory would recommend population control for any real-life underdeveloped country.

It is a common opinion shared by economists and laymen alike that most, if not all, underdeveloped economies need some form of population limitation. It will be the purpose of this paper to question the analytic basis of this judgement. At the outset, let it be clear that we are not disputing the ecological point that a smaller world population means a slower dissipation of the exhaustible resources with which the earth is endowed and is, therefore, desirable. This may, for all we know, be entirely valid. We are content to notice that this is a point about world population in general and applies with equal force to developed and underdeveloped economies. It applies, in fact, *a fortiori* to the developed economies, for an average American child consumes during its lifetime much more of the dwindling resources of coal or oil than does its Indian counterpart.¹

What we are interested in, is the question of whether population limitation programmes can be expected to speed up the rate of economic progress of underdeveloped economies and, incidentally, in the optimum amount they should invest for such programmes. Unfortunately, the currently fashionable approaches to the problem of economic growth

1. For a rational treatment of the ecological question, see Spengler, J. J. : "The Economist and the Population Question," *American Economic Review*, March 1966.

are singularly unsuited for answering such questions. This is because none of them take adequate account of the interactions between population change and other factors in economic growth. The commoner attempts to answer the above questions involve either separating altogether the growth of population from the growth of aggregate income or, which is not significantly better, treating population growth as an independently given exogenous parameter to which the rest of the economic system passively adjusts.

I

Let us illustrate our assertion by a few examples. We begin with a very common piece of argument that has been employed by Professor Jan Tinbergen among others². In its most general form it is as follows:

“ Given a rate of population growth of n per cent and a capital output ratio of $k:l$, the savings ratio needed to keep per capita income constant is kn per cent. One per cent reduction in the rate of population growth makes per capita income grow at one per cent. To achieve this same result it would be necessary to save k per cent more of the national income. One per cent off the population growth rate is therefore equivalent to a k per cent rise in the savings ratio.”

Let us examine the alleged equivalence between a rise in the savings ratio and a fall in the rate of population growth. Starting from a hypothetical initial position in which capital stock, income and population are all increasing at the rate g ($= s/k$, where s is the savings ratio and $k:l$ is the capital/output ratio), thus keeping per capita income constant, we consider two alternative policies (i) one of keeping the capital stock constant and lowering the birth rate so as to lower the rate of population growth to (-2) per cent and (ii) one of not interfering with the rate of growth of population but raising the rate of capital accumulation so that per capita income rises by 2 per cent per annum. According to the above analysis both alternatives will lead to growth at the rate of 2 per cent per annum. However, it is intuitively clear that the diminishing population/constant capital stock variant is the negation of growth in any meaningful sense of the term. Thus, we can see that the alleged equivalence between raising the rate of capital accumulation and lowering the rate of population growth would not stand up to rational investigation. It is also evident that the above argument depends on a rigid separation between population growth and the rate of growth of aggregate income.

2. Jan Tinbergen : *The Design of Development*, John Hopkins Press, Baltimore, 1958.

As a second example, let us take the case of a more respectable attempt to bring the question of the desirability of population control under analytical purview : the pioneering attempt by Coale and Hoover³ to demonstrate that (i) lower fertility rates accelerate the rise in total national income and (ii), *a fortiori*, in per capita national income since (a) a higher proportion of income is available for growth expenditure and (b) a smaller portion of this higher ratio goes into low-yielding and lateyielding welfare expenditure on extra population.

Their projections are based on an explicit model intended to show the economic effects of different fertility rates. By working out various combinations of coefficients of investment and developmental outlays to incremental personal income, they claim to show that “ through this whole gamut of projections despite the wide variations in the rates of progress they imply, the differential associated with reduced fertility is remarkably persistent and stable ”.

While Coale and Hoover deserve all credit for a pioneering effort at quantitative analysis in a field where such attempts have been all too scarce, we are constrained to note that as far as our own questions are concerned, the analysis has not advanced matters any farther. Since Coale and Hoover (Hereafter, C. and H.) expect that an increase in the capacity to save would automatically lead to investment (they do not consider whether a lower rate of population growth would sensibly diminish the incentives to invest) it is easy for them to conclude that *ceteris paribus* lower fertility means higher rates of growth.

It should be noted further, as Myrdal⁴ has pointed out, the authors' idea that saving levels can be made to depend on both per capita and aggregate income is not quite tenable. Considering the three major sources of funds—the personal, the corporate and the governmental sectors, it is easy to see that per capita income is unlikely to be a major influence on the savings ratio. As to personal, savings, the C. and H. projections imply that the average propensity to save would at least double over a period of thirty years due simply to the influence of rising per capita incomes. This is, however, contrary to a large body of evidence of the numerical stability of the average saving ratio. If it is assumed that higher per capita incomes do not necessarily imply a higher average propensity to save, the C. and H. differentials are immediately reduced substantially. As to corporate and government savings, the alleged connection with per capita incomes become still more tenuous.

3. Ashley J. Coale and Edgar M. Hoover : *Population Growth and Economic Development in Low-Income Countries*, New Jersey, Princeton, 1958.
4. Gunnar Myrdal : “ The Economic Effects of Population Development, ” in *Dr. P. S. Lokanathan, 72nd Birthday Commemoration Volume*, New Delhi, 1966.

It is necessary also to note that the C. and H. model is entirely unsuitable for proving the superiority of population control over uncontrolled population. What C. and H. have proved — if anything — is that an “autonomous and costless fall in productivity of the human womb” would be a good thing for underdeveloped economies. To have demonstrated this is not to have proved that population control programmes would have improved growth prospects. This can be immediately seen by realising that the Coale and Hoover result is predicated on the mechanism of diminishing fertility leading to higher per capita income and less induced welfare outlays, which in turn imply higher rates of productive investment and hence faster growth. The immediate effect of a population control programme is to divert funds from growth outlays to non-growth outlays, whereas the fall in fertility rates takes quite an amount of time to become discernible, let alone significant. During this period the effect of population control will be to lower and not to raise per capita income compared to the uncontrolled population variant. Since aggregate income would be less too, by the inverse of the C. and H. process, it is not impossible that growth funds would be severely reduced. Whether future effects of diminished fertility would later on more than offset this initial set-back is another matter. A choice for or against population control cannot in any case be based on the existence of stable C. and H. differentials.

II

Both the analytic approaches noticed above have the unfortunate feature that any lower rate of population growth emerges as preferable to any higher rate of population growth and a decaying population appears to be an economic blessing. This is a type of conclusion that revolts common sense. It seems much more preferable to have a theory which would point out an ideal rate of population growth or a time path of ideal populations to which it would be the goal of policy to make actual population to conform.

The only analysis of the population question which has posed the problem in this particular form has been the Optimum Population theory. For a general doctrinal history, the reader is referred to the excellent survey by Gottlieb.⁵ Our own purpose will be to re-examine the most developed form of this theory in an attempt to see whether it forms a superior analytical foundation for population planning.

According to this theory, for any economy at a given point of time, characterised by a given endowment of developed natural resources,

5. Gottlieb, *Journal of Political Economy*, December, 1945.

accumulated capital stock, state of technology, etc. there exists an unique hypothetical population which can optimally utilise attainable per capita income from them. The operation of the law of variable proportions is called in to assure us that any other population, higher or lower, will have an income smaller than this maximum attainable per capita income. This, then, is the optimum population. Over time, too, given the time paths of the non-human factors determining the location of the optimum and a reliable projection of future population, it is feasible to predict whether the difference between actual and optimum population would grow, remain constant or diminish in absolute size.

Under the assumption that all factors affecting the location of the optimum can be subsumed under the blanket variable "capital", the above statement may be formalised as follows :

$$(1) \quad p_t = p_0 e^{nt}$$

$$(2) \quad k_t = k_0 e^{gt}$$

$$(3) \quad \bar{p}_t = ak_t^\alpha$$

$$(4) \quad \bar{y}_t = bk_t^\beta$$

$$(5) \quad D_t = \left| ak_t^\alpha - p_0 e^{nt} \right| = \left| p_0 e^{nt} - ak_t^\alpha \right|$$

$$(6) \quad y_t = \bar{y}_t - cm_t$$

where p stands for actual population, n its rate of growth

k stands for capital stock and g for its growth rate

\bar{p} for optimum population

\bar{y} for the per capita income attainable with an optimum population

m for an index of maladjustment

and y for actual per capita income.

The subscripts indicate time periods with a zero subscript denoting initial values. The first equation is a forecast about future population, the second is a projection for capital. The third expresses optimum population as a function of capital : assuming that capital accumulation is usually associated with lower optimum labour-capital ratios, it follows that $\alpha < 1$. The fourth, in the same way expresses the maximum attainable per capita income as a function of capital : since this typically rises faster than capital stock, $\beta > 1$. The fifth equation measures the absolute size of the gap between optimum and actual population and the last indicates how actual income falls below the maximum per capita income due to the existence of maladjustment. The crucial thing is to define properly the index of maladjustment.

Obviously, the difference between actual and optimum population cannot itself serve as such an index. This is so because a gap of equal absolute size has much less significance when the absolute sizes of optimum population and capital stock are large than when they are small. The standard practice has been to define the index by dividing the gap by optimum population :

$$(7) \quad m_t = \left| p_0 e^{nt} - ak_0^\alpha e^{n\alpha t} \right| / ak_0^\alpha e^{n\alpha t}$$

$$= \left| \frac{p_0}{ak_0^\alpha} e^{(n - n\alpha)t} - 1 \right|$$

However, there are two serious defects in this procedure. First, the condition for a growing m_t is obviously p_0 greater than or equal to ak_0^α and n greater than $g\alpha$. The conditions for a growing D_t are also identically the same. The point of defining an index of maladjustment the structure of whose time path is identical with that of D_t , is not very clear.

The second point is more fundamental. The formulation of the optimum population theory stressed that the optimum population was one which was properly adjusted to the non-human endowments of the economy. By analogy, therefore, the degree of maladjustment of the actual population with the non-human endowments of the economy is best measured by relating it directly to some index of non-human endowments, in this case "capital". It is, therefore, proposed to define the index of maladjustment as

$$(8) \quad m_t = \left| p_0 e^{nt} - ak_0^\alpha e^{n\alpha t} \right| / k_0 e^{nt}$$

and *not*

$$(9) \quad m_t = \left| p_0 e^{nt} - ak_0^\alpha e^{n\alpha t} \right| / ak_0^\alpha e^{n\alpha t}$$

Once this is done, some very interesting conclusions tend to emerge.

(8) reduces to

$$m_t = \left| \left(\frac{p_0}{k_0} \right) e^{(n-g)t} - ak_0^{-\alpha} e^{n(\alpha-1)t} \right|$$

$$= \left| \left(\frac{p_0}{k_0} \right) e^{(n-g)t} - \frac{a}{k_0^\alpha} \cdot \frac{1}{e^{tg(1-\alpha)}} \right|$$

whose second term tends obviously to zero as t becomes sufficiently large. The condition for the index to grow, remain constant or diminish over time is given by $n \geq g$, and not $n \geq g\alpha$. Since $\alpha < 1$, we can

conceive of a situation in which $g \geq n \geq g^\alpha$. Then, while the gap between actual and optimum population will grow without assignable limit over time, the index of maladjustment would diminish or, at most, remain constant. We propose to show that this case, far from being a rare exception, is likely to obtain in a large number of underdeveloped economies.

Assuming that the incremental capital output ratio is around 4 : 1 (fairly high) and a propensity to save of around 12 to 16 per cent (not too high), the growth rate of capital stock comes out at around 3 to 4 per cent per annum. This is higher than the rates of population growth prevailing in most underdeveloped economies : so that $g > n$. At the same time, there is considerable evidence to the effect that the absolute size of the gap between actual and optimum population is growing : hence, $n > g^\alpha$. It follows, therefore, that the case is not a typical but on the contrary most relevant.

Would population control be helpful in such a case? We shall demonstrate that it is likely to cause positive harm to the goal of speeding up the rate of growth of per capita income.

We have already noticed that population programmes are costly. It has been estimated that aside from substantial initial investment in advertisement and persuasion, the annual recurring costs of a population control programme designed to reduce population growth by one per cent is in the region of 5 to 6 dollars per adult of child-bearing age. A diversion of funds on this scale from productive investment would cut the rate of growth of capital stock drastically.

Let us compare two time paths with and without population control programmes starting from the same initial situation. The uncontrolled population path is described by the set ($g > n > g^\alpha$) whereas the control path is described by ($g' > n' < g'^\alpha$). We assume that $n > n'$, $g > g'$ as a result of population control. For t sufficiently large, the controlled population path converges to

$$(10) \quad y_{ct} = bk_0^\beta e^{g'\beta t} \quad \text{for} \quad \left| \frac{p_0}{k_0} e^{(n' - g')t} - ak_0^{-\alpha} e^{g'(\alpha - 1)t} \right| \rightarrow 0$$

as $t \rightarrow \infty$

whereas the uncontrolled population path would converge to

$$(11) \quad y_{uct} = bk_0^\beta e^{g\beta t} \quad \text{for} \quad \left| \frac{p_0}{k_0} e^{(n - g)t} - ak_0^{-\alpha} e^{g(\alpha - 1)t} \right| \rightarrow 0$$

as $t \rightarrow \infty$

for t sufficiently large. Comparing (10) and (11) it is clear that the per capita income on the uncontrolled population path is higher for all $t > 0$.

The fact that population control programmes embody large lags gives further support to the argument. As shown above, such lags imply a substantial sacrifice in terms of per capita income. Our analysis of the no-lag case shows that this sacrifice will never be required. Finally, there is also evidence to show that the degree of effectiveness of population control programmes vary very widely and uncertainly. This is an additional consideration against the population control variants.

Conclusion

In our limited, necessarily and regretfully so because of the space limitation, survey of modern and pre-modern attempts to arrive at a judgement regarding the necessity of population control, we have discovered a few substantial reasons for doubting whether a country whose rate of capital accumulation was ahead of its rate of population growth would be well advised to control the rate of population growth. We have also found reasons to believe that a rise in the rate of capital accumulation with the rate of population growth constant is unequivocally superior to an identical fall in the rate of population growth with a constant rate of capital accumulation. Finally, we have shown that in the fruition of the population programmes, there are substantial lags and uncertainties. During the waiting period there is a substantial loss since the time path of per capita income gets revised downwards. There is no ground for a firm hope that these sacrifices would be soon repaid. The conclusions are tentative but they point the way towards a revision of "conventional wisdom" on the population question.

JOHN STUART MILL ON ECONOMIC GROWTH

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SUMMARY

John Stuart Mill is widely regarded as both a seminal and original thinker and the object of this paper is to discuss his views on economic growth. It is important to discuss Mill's contribution to the theory of economic growth because he enlarged and extended the classical theory of growth developed by Adam Smith, Ricardo and Malthus. The first section of this paper discusses Mill's views on economic growth. It is shown in this section that he gave consideration to many non-economic factors and institutional determinants in the process of economic growth. It is shown in the second section of the paper that Mill's contribution to the theory of economic growth in its broad outline does not differ greatly from comparable present-day approach of the growth theorists. The final section attempts at a critical evaluation of Mill's system of economic growth. It is maintained that Mill attached far more importance to diminishing returns and over-population than to technical progress and productive capital formation. Mill had no theory of enterprise and failed to integrate the actions of change-producing creative individuals within the process of growth. Despite same flaws in his approach, it is contended that Mill expounded socio-economic view of growth based on individual liberty and social morality.

The purpose of this paper is to discuss John Stuart Mill's views on economic growth. It is important to discuss Mill's contribution to the theory of economic growth because in its broad outline his theory of economic growth does not differ greatly from comparable present-day theories of growth. Though Adam Smith and Ricardo had contributed a good deal to the Classical theory of growth, it was left to Mill, a seminal and original thinker, to indicate in the process of growth the vital role played by certain factors which were not given due importance by Adam Smith and Ricardo. For this reason alone, it would be relevant to discuss Mill's role in the development of the theory of economic growth. An attempt is made in the first section of this paper to discuss the salient views of Mill on economic growth. In the second section, his views are compared with those of present-day growth theorists. An appraisal of Mill's theory of growth is presented in the third and the last section of the paper.

I

Mill developed his views on economic growth in his "Principles of Political Economy with Some of Their Applications to Social Philo-

I. E. A.,-1-2,

sophy".¹ It is in his "Principles" that the whole of Mill's theory of economic growth is succinctly discussed. His other published works sometimes elaborate his views, but do not contribute substantially new thoughts on economic growth. Mill's concern with economic growth is also evident in his "Logic".² Besides, his views on economic growth are found in "Dissertations".³ In the preparation of this paper, all the above-mentioned books and the bibliography⁴ of the published works of Mill have been referred.

Mill believed that economic laws of a stationary and unchanging society were not always applicable to man's economic conditions and, therefore, he saw a need for a "dynamics of political economy", for "a theory of motion", as well as for "a theory of equilibrium".⁵ Mill sought to explain why some countries were experiencing accelerated expansion and why this movement of growth had not spread to others. Mill had principally the European countries in mind and he contrasted their growth with that of Asian countries. He believed that Asian countries were not developing their economies and attributed this 'non-development' to lack of "a better government, more complete security of property; moderate taxes, and freedom from arbitrary exaction under the name of taxes; a more permanent and advantageous tenure of land, securing to the cultivator as far as possible the undivided benefits of the industry, skill and the economy he may exert."⁶ Thus Mill believed that good government, moderate taxation and security of property and fair tenurial rights of the cultivators were some of the important factors in the income-increasing process of economic growth.

But Mill believed that non-economic factors played a more important role than economic factors in the process of economic growth. Among the non-economic factors, he included beliefs, habits, institutions and traditions and customs. Hence he attributed to unsalutary beliefs, customs and attitudes the ultimate cause of economic backwardness. Mill had observed a number of times that the economic backwardness of various countries was due to despotic and anti-progressive

1. Hereinafter cited as *Principles*. References to this work are from an edition with introduction by W. J. Ashley, New York, 1921.

2. J. S. Mill, *System of Logic*, 6th edition, 1885.

3. J. S. Mill, *Dissertations and Discussions*, London, 1867.

4. *Bibliography of Published Writings of John Stuart Mill*, New MacMinn. edited Evanston, 1945.

5. See his *Principles*, pp. 695-99.

6. J. S. Mill, *Principles*, pp. 189-90.

character of their customs, reinforced by religious beliefs. He wrote : “ The despotism of custom is everywhere the standing hindrance to man’s advancement ”.⁷ He recognised the valuable role played by custom in the evolution of socio-economic relationship but his concern was with the rigidity of custom after it had ceased to serve the general welfare. He thought that when production and distribution were governed by customs and religious beliefs “ laws which political economy might investigate were not operative ”⁸. Mill emphasized that the salutary economic change was always opposed by the static forces of ceremony, status, modes and legendary beliefs. According to Mill, it was essential to modify customs, habits of thoughts and beliefs to increase economic growth and augment human welfare.

Mill accorded an important role to institutions in the process of economic growth because he found that man’s economic behaviour was conditioned by the complex set of institutions. Thus, he can, along with Adam Smith and Malthus, be described as an institutionalist. He maintained that various institutions in Asiatic countries hindered the process of competition and thereby acted as growth-retarding forces. In this context he made some pertinent remarks about the role of trade unions in the process of economic growth. According to him, trade unionism was incapable of surmounting demographic and physical barriers to the process of economic growth. He believed that economic progress would not be satisfactory unless the trade unions were replaced by co-operative associations of workers and employers. He argued for “ an association of the labourers themselves, on terms of equality, collectively owning the capital with which they carry on their operations, and working under managers elected and removable by themselves. ”⁹ Mill expected the trade unions to be gradually superseded by co-operative associations of the labourers with the capitalists and “ perhaps finally in all, association of labourers among themselves. ”¹⁰ Mill thought that co-operative forms of institutions would induce economic change favourable to economic growth. He said that a change through the co-operative principle “ would result in a change in society, which would combine the freedom and independence of the individual, with the moral, intellectual and economic advantages of aggregate production. ”¹¹

7. J. S. Mill, *Utilitarianism, Liberty and Representative Government*, New York, 1920, p. 127.

8. See his *Principles*, Chapters 4-8, pp. 242-304.

9. See his *Principles*, p. 127.

10. *Principles*, p. 764.

11. *Ibid.*, p. 791.

Though Mill assigned a crucial role to non-economic factors and institutions in the process of economic growth, he did not fail to ascribe to capital, land and population a significant role. In this, he followed the classical thesis developed by Smith, Malthus and Ricardo. Let us first discuss his views on the role of capital in the process of economic growth. According to Mill, capital was the result of saving and was formed only when economic and non-economic factors were sufficiently favourable to it. How rapid was the rate of capital formation depended on two conditions : (1) the magnitude of the net produce of industry, the 'net produce' consisting of, "surplus of produce that remained after supplying out of gross output the necessaries of life to all concerned in production : including those employed in replacing the materials, and keeping the fixed capital in repair " ¹² and (2) the strength of disposition to save. This strength or inclination to save, according to Mill, depended on the rate of return or the rate of profit on invested savings. Whatever increased 'net produce' or the rate of profit increased the rate of capital formation. Mill also maintained that deficiency of capital set a limit to the increase of production per capita. Mill thought that bad government, high taxation, mis-investment and rash speculation led to a decline in the rate of capital formation.

Despite his emphasis upon the role of capital in the process of economic growth, Mill believed that profits would be reduced to a minimum level. This belief was largely due to the impact of Ricardian view of diminishing returns on Mill's theory of economic growth. Land was the more completely limitational factor in Mill's theory of economic growth. He believed that the tendency to diminishing returns in agriculture would set a limit to the rate of growth of output, 'net produce' and savings, and, therefore, would slacken the rate of capital formation. Further, he thought the very rate of growth of capital might reduce the profits to zero and that the zero rate of profit might adversely affect the disposition to save. As a consequence of the operation of the slow rate of capital growth and the zero rate of profit, the economy according to Mill, might slide into a stationary state. Mill conceded that the advent of this state depended on what happened within a country and upon its international economic relations with other countries. But Mill, building particularly upon Ricardo's views, concluded that given the fixity of the land supply, the net capital formation and profits would decline as population grew and cultivation extended. In consequence, he believed that a stationary state was bound to come into existence. Thus, there is almost an inevitability of a stationary state in a society in Mill's system of thought.

12. *Ibid.*, p. 163.

But why did the rate of profit descend to a zero-saving level? The answer to this question, according to Mill, was the rapid rate of growth of population pressing on the limited supply of land. According to Mill, when the population of a country was growing fast, it was difficult to increase the rate of savings and means of production. He was much impressed by Malthusian theory of population and, therefore, F. W. Taussig remarked that Mill attached "exaggerated importance" to Malthusian theory.¹³ Mill wrote in 1849 that "the evils of overpopulation are not in distant future; they are and have been throughout history, almost everywhere present, and often in great intensity."¹⁴ He attached a significant role to population growth in reversing the process of economic growth. But in the prescription of a policy for population he differed from Malthus. He believed that prudence, forethought and self-restraint would prevent the growth of population from consuming the fruits of economic growth. He observed that prudential motives were found among, and conscientious self-restraint was practised by, the middle class, the peasantry and the skilled artisans. He lamented the fact that these motives were not found among unskilled workers and agricultural labourers. Mill was particularly concerned about the reproductive behaviour of the working classes and wrote that although there was a great increase of aggregate wealth, there would be "the great class at the base of the whole increasing in numbers only, and not in comfort nor in cultivation".¹⁵ Mill therefore suggested education as a remedy for curing the ills of growth of population among the unskilled workers and agricultural labourers. He also believed that emancipation of women from subjection and their entry into the labour market would also tend to decrease the rate of growth of numbers. Moreover, he hoped that the introduction of a regime of co-operation might improve the worker morally and induce him to limit the size of his family. He approved of the use of contraceptives.¹⁶ Unlike Malthus, he suggested a policy for emigration as an antidote to the rapid growth of population.

On the whole, Mill's theory of economic growth may be described as socio-economic rather than economic because of the crucial part played by non-economic and institutional variants in his system. Moreover, his theory also stressed the role of capital formation, population growth and increased knowledge and education in the income-accelerating process of economic growth.

13. F. W. Taussig, *Wages And Capital*, New York, 1848, p. 224n.

14. See *The Letters of John Stuart Mill*, H. S. R. Elliot, ed. London, 1910 I p. 142.

15. See his *Principles*.

16. N. E. Himes, "The Place of John Stuart Mill and of Robert Owen in the History of English Neo-Malthusianism", *Quarterly Journal of Economics*, XLII, 1927-28, p. 627.

II

In this section an attempt is made to compare Mill's views on economic growth with that of modern growth theorists. Modern growth theories emphasize the key role played by education or "investment in human capital" in the process of economic growth. Theodore W. Schultz, Edward F. Denison, John Vaizey and others have stressed the production increasing role of knowledge in economic development.¹⁷ Education played a more important role in Mill's theory of economic growth than did any other factor because it increased man's technical capacity to overcome niggardliness of nature. Though Mill was obsessed by the law of diminishing returns he believed that this law could be suspended or controlled temporarily by "any extension of knowledge".¹⁸ He believed that economic progress and human welfare could be augmented by extension of knowledge and education. According to Mill, education generated and stimulated forces making for increase of aggregate production. Education influenced opinions, habits and institutions on which depended economic progress of a country. He stressed the importance of the general mental advancement of the community for accelerating the process of economic growth. He wrote, "successful production depends more on the qualities of human agents, than on the circumstance in which they work." According to Mill, "real amelioration in the lot of mankind depends on their intellectual and moral state."¹⁹

Mill's emphasis on the part played by the marketed surplus of food-grains is strikingly similar to the emphasis placed on it by the modern growth theorists, building models of growth for underdeveloped countries. According to Mill, the underdeveloped countries differed from the developed ones because in the former the surplus of food beyond the "necessary consumption" was "torn from the producers" by individuals who, by superior force, or by availing themselves of religious or traditional feelings of subordination, have established themselves as lords of the soil".²⁰ He argued that in Asian countries this surplus

17. See Schultz, "Capital Formation by Education", *Journal of Political Economy*, Vol. LXVIII No. 6 December 1960 and "Investment in Human Beings" special supplement, *Journal of Political Economy*, Vol. LXXI No. 5 Oct. 1962. Also, Edward F. Denison, *The Sources of Economic Growth in the U. S. A. and the Alternatives before US*, Committee for Economic Development, New York 1962 and John Vaizey, *The Economics of Education*, Faber and Faber, London, 1962.

18. See his *Principles*, p. 188.

19. See *Principles*, p. 104.

20. *Ibid*, p. 104.

was misappropriated and hence very little capital was formed. He also referred to the improper use of this "surplus of food" for "unproductive edifices" and wasteful consumption expenditure.²¹

Mill's views on the role of inflation in promoting economic growth were similar to that of many present day growth-theorists who believe that inflation is inimical to economic progress. Mill considered it fallacious that an increase in currency quickens the pace of development and he wrote that the increase in the money supply "cannot benefit anybody, except at the expense of somebody".²² In Mill's system of thought real capital formation was a far more dynamic factor in the process of economic growth than the increase in money supply.

III

In the main, Mill's vision of economic growth, based principally on England's economic progress, was correct, although his emphasis upon the Malthusian principle and diminishing returns was not. Mill's system was marked by an excessive emphasis upon population growth and scarcity of natural resources. Subsequent history of economic development of England and United States of America proved that Mill's emphasis was incorrect. The question remains open to-day as to whether economic growth will evolve a cultural pattern suited to optimum population.

Mill attached far more importance to education and to the accumulation of knowledge than had Smith or Ricardo, but much less than do present day growth-theorists. He stressed the broadening role of education in the advancement of human welfare and economic progress but did not emphasize the narrow role of education as a utilitarian agent and diffuser of technical knowledge. According to him, man's technical competence to overcome niggardliness of nature was not without a limit and therefore the coming in of a stationary state was inevitable. Mill believed land and natural resources to be more important than technical knowledge and technological change and therefore his theory of economic growth often relapsed into a stationary state.

Mill believed in the inevitability of a stationary state because he underestimated greatly the production increasing capacity of fixed capital. Being without a productivity theory, he almost came near to expounding a stagnation theory. He did not develop a theory of productivity

21. *Ibid*, pp. 12-14.

22. Mill, *Essays on some Unsettled Questions*, pp. 55-57.

of labour or that of capital and therefore underplayed the growth-promoting role of labour and capital. Like Smith and Malthus, Mill did not assign to the state an important role in economic growth. Mill thought that the state would destroy the creativity, independence and the individuality and would thus retard the process of economic growth. Mill regarded private enterprise as an engine of economic growth. For England and many Western countries—especially the United States—this view has not been misleading, for these countries have been supplied with private industrial and financial leadership, capable of economic progress. Many newly developing countries have not been so fortunately endowed and therefore Mill's views have limited applicability to conditions obtaining in these countries.

While Mill did emphasize the change-producing role of creative individuals, he did not greatly play up this role of innovating entrepreneurs. Nor did he integrate this creative role of "remarkable individuals" with that of capital in the process of economic growth. As a consequence, Mill had no economic theory of enterprise. But then Mill expounded the socio-economic and moral view of growth based on individual liberty.

Mill enlarged and extended the views of Adam Smith, Ricardo and Malthus and he did this in his own inimitable way. Baumol has described classical dynamics as "magnificent",²³ and this description seems eminently applicable Mill's theory of economic growth.

23. W. J. Baumol, *Economic Dynamics*, New York, 1951, p. 19.

ECONOMIC DEVELOPMENT OF UNDERDEVELOPED COUNTRIES AND MARXIAN THEORY OF GROWTH

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SUMMARY

Marxian theory of growth has its own special characteristics that distinguish it from other theories. In order to test its general validity, the present paper tries to examine its applicability in economic development of underdeveloped countries to-day. It is found that the essence of the Marxian theory of growth lies in the generation of surplus value and its appropriation by capitalists for capital accumulation. Although reduction of wage-rates and extension of hours of work may be used for increasing the rate of exploitation for enhancing the volume of surplus value, at a certain stage of development, technological change tends to be the main instrument of capital accumulation. This emphasis on the role of technological change in capital accumulation was a notable contribution of Marx. However, his explanation of the process of initial formation of capital (the theory of primitive accumulation) in the formative stage of industrialization is found to be inapplicable to the underdeveloped countries of the twentieth century.

I

I.1. Marxian theory of growth has its own special characteristics that distinguish it from other theories. Although greatly influenced both by the English classical school as well as by the German historical school, Marxian theory significantly differs from all other theories of growth that could be applied to explain the economic development of the capitalist countries of the West. This naturally raises considerable scope of controversy about its theoretical validity. This, of course, may be tested in various ways, but one possible method may be to test its generality over different contexts of time. Although Marx never attempted to build up a theory of growth that would explain economic development under all circumstances, if it can be shown that with reasonable modifications it can well explain economic development of underdeveloped countries in the changed capitalist context of the twentieth century, its claim to superiority over other theories tends to be better established. In this paper, an attempt would be made to examine how the Marxian theory fares in that respect.

II

Essentials of the Marxian Theory of Economic Development

II.1. Being a part of a closely knit theory of social dynamics, it is difficult to isolate the Marxian theory of economic development

(and, in fact, any other part) from the other components of the whole theory. However, for our special purpose, we would try to present the essential elements of those aspects of the Marxian theory which have direct significance in explaining economic growth.

II.2. Marx was not a “ pure economic ” theorist. His objectives were neither pedagogic, nor intellectual. Thus no part of his theory is presented in isolation from social reality. Accordingly, all aspects of his theoretical framework show admirable blending of different elements—economic, sociological, political etc. In explaining the dynamics of economic change of a society as well, Marxian theory makes use of non-economic as well as economic factors.

II.3. Most of the non-economic factors involved in Marxian theory of development may be described as sociological—basically connected with class relations and class antagonisms arising out of changes in production relations under different societies. These are, of course, inseparably connected with and influenced by economic factors, but for our purpose we may concentrate mainly on those factors that may be considered strictly as economic factors by themselves.

II.4. The theory of surplus value provides the framework on which Marx bases his analysis of capital accumulation and thus of economic development. As labour power, applied to means of production, can produce something more than its own value (i.e., the wage, which tends to be equal to the subsistence requirements of the workers), the economy can have a surplus which can be further applied to produce capital. This surplus is reaped by the capitalists who besides using part of it for their own consumption, also employs another part of it for further investment. Capital accumulation directly depends upon the ability of the capitalists to increase the surplus value. This may be accomplished broadly in three ways : first, by reducing the wage-rates below the subsistence level, second, by extending hours of work and, last but not the least, through increasing labour productivity by means of technical improvements.

II. 5. Among the various methods of increasing the surplus value, the first two cannot be relied upon over a long period. If the wage-rates are kept at a lower level than the subsistence requirements, there would be a secular decline in the supply of labour, which would tend to create difficulties with respect to the maintenance of the level of production and that of the economic surplus. The lengthening of working hours also has its limits. Thus the best possibility of raising the volume of surplus value, at a certain stage of capitalist development lies mainly in raising labour productivity,¹ which would, in turn, depend on technological

1. Karl Marx, *Capital*, Vol. I (Moscow edition), p. 621.

improvement. Thus capital accumulation, in the Marxian theory, basically 'becomes a function of technological improvement. (It is interesting to note in this connection that about the role of technology in economic development Marx had definitely a better conception than the leading classical economists. Ricardo, in fact, had minimised the role of technological change.² He held that inventions and discoveries could only postpone the advent of stationary state, but could not prevent its arrival.³ Adam Smith, of course, recognised the importance of technical change in industrial growth.⁴ But Marx's analysis of the role of technological change as the helping factor in raising the level of economic surplus for re-investment through the productivity-effect may be considered as superior to Smith's analysis of the significance of technological change as the factor responsible for release of labour from the agricultural sector for industrial activities.)

II.6. Marx not only had shown technological improvement to be the main lever of economic progress under capitalism, but also had shown this to be mainly responsible for downfall of capitalism and the ultimate advent of socialist society. In his model, the compulsions of capitalist competition would induce the capitalists to introduce more capital-intensive technology in order to raise the productivity of their workers over others. The organic composition of capital thus tends to rise. This, in Marxian scheme, would directly contribute to the falling rate of profit over the long run. Moreover, due to the unequal capacity of different capitalists to introduce technological improvement, the bigger capitalists would tend to " kill " the smaller ones, who would ultimately swell the rank of the proletariat. At the same time in order to prevent the secular decline in the rate of profit, the capitalists would try to increase their rate of exploitation by all means, including wage-cuts and lengthening of the working hours. This would create immense hardships for the workers, who, to protect themselves, would combine in trade unions in greater numbers. The compulsions of capitalist development would thus increase, on the one hand, the workers' resistance to it and on the other hand, would tend to breed greater centralization and concentration of capital. The growing monopoly and centralization of capital

2. G. M. Meier and E. M. Baldwin, *Economic Development* (Indian edition, 1960), p. 52.
3. J. M. Letiche, " Adam Smith and David Ricardo on Economic Growth " in *Theories of Economic Growth* (Eds) Hoselitz and Others (Illinois, 1960), p. 75.
4. Adam Smith, *Wealth of Nations*, (Modern Library edition, 1937), p. 163.

would be incompatible with further technological progress.⁵ There would be, thus, contradiction at the economic level which would make the main lever of capital accumulation weaker and would thus remove the economic justification of capitalism as a system. At the same time the growing resistance to capitalist exploitation bred by itself would ultimately sharpen the class struggle between the capitalists and the workers. Capitalism, therefore, would outlive its utility and ultimately be overthrown, as feudalism was overthrown earlier when it became an obstacle to economic progress.

III

The Theory of Primitive Accumulation as a Theory of Industrialization

III.1. In this connection it has to be noted that this analysis of economic development on the basis of capital accumulation mainly refers to the competitive capitalist systems comparable to the nineteenth century Europe with which Marx was intimately familiar. These countries, then, had already passed their early stage of industrialization. Thus the theory of socio-economic development outlined above may be considered more as a theory explaining the changes in the advanced phases of industrial capitalism, rather than as an explanation of the transformation of an underdeveloped agrarian society into an industrialized one. Marx was aware of this and had something to say about the initial phase of industrial transformation in his theory of "primitive accumulation". (*Capital*, Vol. I, Chapter XXVI).

III.2. Marx's approach to primitive accumulation was basically historical and descriptive, rather than analytical. He had traced the secret of primitive capital accumulation in the separation of tillers from land and the small industrial producers from ownership of their equipments accomplished under various sorts of compulsions. "The so-called primitive accumulation, therefore, is nothing else than the historical process divorcing the producer from means of production."⁶ The separation of the producers from the means of production helped capital accumulation in two ways. Firstly, it created a vast 'reserve army' of unemployed workers waiting at factory gates for work. This helped the capitalists to have a cheap and abundant supply of labour and thus enabled them to reap considerable amount of surplus. On the other

5. This point is implied in the analysis of Marx. One of the motive forces to induce the capitalists to introduce technological changes being the desire to outbid the competitors, with the growth of monopoly and centralization of capital, the pace of technological change would slow down.

6. Karl Marx, *op. cit.*, p. 714.

hand, with the expropriation of small peasants, the way for large-scale commercial cultivation was paved clear. This helped in the creation of agricultural surplus and promoted capital accumulation. (Although Marx did not state the second point explicitly, this follows from his analysis of primitive accumulation.)

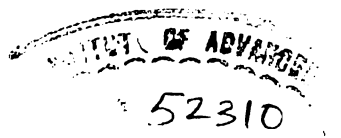
III.3. Marx and Engels, of course, recognised that besides the expropriation of producers there were certain other factors as well that helped the primitive accumulation and also the later stage of capital accumulation. They were well aware of the role of foreign trade and colonial exploitation in this process. However, on the whole, it would be quite legitimate to state that in answer to the straight question what helps industrialization of an underdeveloped country, one may find the separation of the producers from the ownership over their means of production for ultimate rise and appropriation of surplus value by the capitalists to be the main Marxist answer. This theory, it should be mentioned, was mainly derived from the study of historical experience of medieval Europe in the course of its transition from the agrarian stage to the industrial stage under capitalism. Whether this particular historical experience can be the basis for valid generalization in explaining the same transition in a different historical context has to be examined in the following section.

IV

The Theory of Primitive Accumulation and the Underdeveloped Countries in the Twentieth Century

IV.1. While making an attempt at testing the Marxian theory of primitive accumulation in the context of underdeveloped countries to-day, one immediately faces a difficulty.

IV.2. Capital shortage is, of course, a leading obstacle to industrialization of the underdeveloped countries in the twentieth century, but there are other obstacles as well. Lack of growth of proper institutional climate for industrialization, lack of skill formation, excessive growth of population, low productivity of man-power in production (both managerial and rank-worker), administrative and entrepreneurial inefficiency, bottlenecks in the supply of essential inputs, pressure of food-shortage etc. are some of the most pressing problems without the solution of which only the provision of abundant supply of capital will not solve the problems of industrialization of the lagging economies of Asia and Africa. In the Marxian framework such obstacles have not received due attention and thus his theory tends to be as incomplete as many non-Marxian one-factor growth models that over-emphasize the role of capital as the major determinant of economic growth.



IV.3. Recent experiences in different underdeveloped Asian and African countries also would throw doubt about the applicability of the Marxian theory of primitive accumulation as an explanation of the process of industrialization in the underdeveloped countries to-day. In medieval Europe the existing land system and the social set-up might have stood in the way of the industrial sector obtaining abundant supply of cheap labour. In a large number of countries of Asia and Africa to-day (if not all), that is not a problem at all. Unskilled labour is already abundant and cheap here and the decay of agriculture and the rural industries and also the growing pressure of population on land are already operating as strong push-factors causing emigration from villages somewhat comparable to the medieval Europe during the early phase of transition from the agrarian to the industrial society. But this, by itself, although creating considerable volume of the reserve army of labour, has not been helpful in the process of capital formation to any significant scale.

IV.4. There is another point. The capitalists of Europe in the early phases of industrialization were, in general, a thrifty and production-minded class. The social and religious features were also much conducive to make the capitalists more interested in investment rather than immediate consumption of non-essentials. But it would not be legitimate to assume to-day that the major part of the surplus appropriated by the capitalists in underdeveloped countries to-day could be invested in the key industries essential for economic development of their own countries. The impact of the internal and international demonstration effect and also the alternative attractions of far higher rates of marginal return from commerce and speculation would make a major portion of the surplus generated in to-day's undeveloped countries non-available for real capital formation. This change in the socio-economic and psychological climate makes the Marxian theory of primitive accumulation less applicable to the industrializing countries of the twentieth century.

V

Conclusions

V.1. If we reject the applicability of the Marxian analysis of primitive accumulation in the context of economic development of underdeveloped countries of the twentieth century, what would then remain of the Marxian theory of economic development? Should it be then considered as completely useless as a theory of the growth process of the industrializing countries to-day? The answer is clearly in the negative.

V.2. Although an important constituent, the Marxian theory of primitive accumulation is not the whole thing of the Marxian theory of development—nor even the whole thing of the theory of capital accumulation. It appears that the Marxian emphasis on the role of technological progress in raising the rate of capital accumulation, together with his clues on the relationship between foreign trade and capital accumulation, may be considered as significant contributions of the Marxian theory in understanding the path of industrialization of underdeveloped countries to-day. Although Marx envisaged their role more in the context of advanced capitalist economies, these, together with the sociological factors, may be incorporated into a new theory of “initial accumulation” in which the Marxian and non-Marxian contributions may be generously blended to provide a more general theory of industrialization.

ECONOMIC DEVELOPMENT WITH UNLIMITED SUPPLIES OF LABOUR

(A CRITIQUE OF LEWIS MODEL OF GROWTH)

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SUMMARY

In this paper an attempt has been made to assess the relevance of Lewis Model in the context of developing economies. Although we have tried to show that the application of the Model is circumscribed by special conditions prevailing in underdeveloped countries, the Model retains high analytical value as it highlights some basic relationships in dualistic development and for its insights into the role of capital formation in the development process.

Lewis' assumption of constancy of wage-level in the subsistence sector is unrealistic. The Lewisian process of growth ends as soon as wages rise above the subsistence level. With increase in wages process of capital deepening takes place in the capitalist sector and the assumption of unlimited supply of labour in the strict Lewisian sense does not hold good, and the growing economy has the tendency to pass into Harrod-type neo-classical model with inelastic supply of labour. Classical economic expansion in Europe may be due to an elastic supply of labour at the subsistence wage, but this may not be true of many developing countries which have adopted the most progressive piece of labour legislation, with the result that wages tend to rise even if labour supply remains redundant.

The application of the Model is further circumscribed by the fact that the capitalist class with necessary ability and motivations to undertake investment does not exist in underdeveloped countries. The modern sector is not sufficiently developed to absorb the surplus labour released by the subsistence sector. The bulk of savings are made by the household sector with little traditions for investment. Corporate profits which are the mainspring of growth in the Lewis Model form a negligible part of national income in developing economies.

The contention of Lewis that inflation for the purpose of creating capital is self-destructive, does not hold good in the context of developing economies which are characterised by structural rigidities, limited productive capacity, low elasticity of supply and high propensity to consume. Empirical evidence does not establish any positive or negative relationship between degree of inflation and rate of growth in developing countries.

“ Over-valuation ” of labour for the manufacturing sector due to divergence between private transfer wage of rural surplus labour and true social opportunity cost, does not provide a conclusive argument for protection to the manufacturing industry.

Lewis Model¹ of growth may be viewed as representative of a family of growth theories based on the behaviouristic assumption of an unlimited supply of labour and which recognise the existence in 'labour surplus less developed economies', of dualism, a structural condition which renders general equilibrium theory invalid.

This paper will attempt to assess the relevance of Lewis Model which visualises the possibilities of capital formation and growth with unlimited supplies of labour in a dual economy, composed of a capitalist sector and a subsistence sector, in the context of underdeveloped economies, more particularly India. In section I, we summarise the model and in section II, an attempt is made to test its hypotheses in the context of contemporary problems of development.

I

The Lewis Model is based upon the classical assumption of unlimited supply of labour available at subsistence wage. The model emphasises how resources can be drawn into modern exchange system through capital formation and a growing capitalist sector. The dual economy is composed of a small "capitalist sector" and a large "subsistence sector", the former is that part of the economy which uses reproducible capital and latter which does not use such capital and where marginal productivity of labour is zero or negative, constituting a case of disguised unemployment. The supply of labour to the capitalist sector is assumed to be infinitely elastic, so long as at a wage based on the product per labour in the subsistence sector, it exceeds demand. Shortage of labour is no limit to the creation of new employment. The supply of labour comes from farmers, casual workers, petty traders, domestic retainers, women in the household and population growth. Extra capital is used in the modern sector for capital widening rather than capital deepening, capital-labour ratio remaining constant.

Entrepreneur in the capitalist sector enjoys a surplus which is saved and invested, as output per worker in this sector is higher than wage per worker. The wage which the growing capitalist sector has to pay is determined in the Model by what labour earns in the subsistence sector. But to overcome inertia and immobility considerable premium will have to be added to the subsistence wage before the rural surplus labour would become available to the industrial sector. Wages cannot rise so long as unlimited supply of labour, capital formation and technical progress

1. Arthur Lewis, "Economic Development with Unlimited Supplies of Labour", *The Manchester School*, May, 1954 and also "Unlimited Labour : Further Notes", *Ibid*, June, 1958.

result not in raising wages but in raising the share of profit in national income. This is the first stage in the Lewis Model.²

The second stage as visualised by Lewis is more akin to the neo-classical model where profits and wages are determined by the relative marginal productivity of aggregate stock of capital and labour in the modern sector and not conversely. The model assumes that anything that increases a country's stock of capital or causes a transfer of workers to more productive employment in the capitalist sector is directly or indirectly beneficial to labour. But anything that increases the cost of labour to the capitalist sector will reduce profit and lower capital formation.

In the third stage there is no subsistence sector. The horizontal supply curve of labour to the capitalist sector is considered to end when the redundant labour force in the subsistence sector is taken up and a relative shortage of agricultural goods appear, so that the terms of trade turn against the capitalist sector." This upward trend in the labour supply curve is later accentuated by a rise in the agricultural real wage traceable to the removal of disguised unemployment and the commercialisation of agriculture, so that real wages are determined by competitive market forces and not by non-market institutional average product.³ High rate of profit would allow the capitalist sector to expand fast enough and eventually embrace the whole economy, which in other words means the elimination of dualism.⁴ In the third stage, rise in wages can be prevented if the subsistence sector releases labour by modernising itself. When surplus is exhausted wages begin to rise above the subsistence level but mass immigration of surplus labour from other countries and export of capital can check this rise in wages at home.

In the Lewis Model, practically all the savings are made by the capitalist from his profits. This is based on the assumption that profits and savings are equal as the consumption of the capitalist class has been assumed to be constant.

In the model, capital besides coming from savings, can also be created by bank credit. The real cost of capital created by inflation is zero and this capital is as useful as that created out of savings from profits. Inflation for the purpose of creative productive capital is self-destructive. Inflationary process comes to end when voluntary savings are equal to the inflated level of investment.

2. S. Enke, "Economic Development with Unlimited and Limited Supplies of Labour," *Oxford Economic Papers*, Vol. 14, No. 2, June, 1962, pp. 158-172.
3. Gustav Ranis and J. C. H. Fei, "A Theory of Economic Development", *American Economic Review*, Sept. 1961, pp. 533-65.
4. Samir Gupta, "Under-Development and Dualism—A Note" *Economic Development and Cultural Change*, January, 1964 p. 181.

Lewis makes out a case for protection of manufacturing industry on the ground that labour is "overvalued" for the urban industrial sector as the private transfer wage of rural surplus labour to industrial employment far exceeds its true social opportunity cost which is determined by its marginal product in agriculture which is equal to zero.

II

In this section we propose to assess the relevance of Lewis Model for contemporary problems of development. A number of qualifications reduce the range of application of the model. Considerable empirical research is needed to test the hypotheses of the model in the context of developing countries. We need to find out the excess supply of labour in the subsistence sector. We have also to find out the possibilities of absorption of excess labour in the modern sector. Theoretical and practical difficulties lie in the way of measuring disguised unemployment. Some attempts have been made in the direction of measurement of disguised unemployment potential with the help of some "norms" regarding minimal work-hours and productivity. The macro-definition of disguised unemployment indicates only the potentialities and not the actual dimensions of the problem. This underlines the need for a micro approach. It is in this field that suitability of the time-norm will have to be judged. These norms are bound to be arbitrary and vary widely according to time and space.

The assumption of unlimited supply of labour is unrealistic for many underdeveloped countries of West Africa, Latin America and South East Asia which are sparsely populated. The existence of disguised unemployment is not strictly necessary for the expansionary process that Lewis has described. All that is necessary is that productivity in the subsistence sector be relatively low and that the supply of labour to the capitalist sector should exceed the demand for labour.

The transfer of labour from the subsistence to the modern sector is not an easy task as visualised in the Model. The case of migrant labour force poses special problems that cannot be adequately analysed in the Lewis Model.⁵ Socio-cultural barriers to occupational and geographical mobility are more pronounced in a developing economy; "...any transfer of the so-called redundant labour from agriculture will have to be accompanied by organisational and technical improvements in that sector; the dramatic implication of costless industrialisation (à la Nurkse) also vanishes."⁶ The re-organisational changes

5. Gerald M. Meier, "Inter-sectoral relationship in a dual economy" in *Leading Issues in Development Economics*, p 422.

6. Samir Gupta, "Under-development and Dualism—A Note," *Economic Development and Cultural Change*, January, 1964, p. 176.

will have to be supplemented by institutional changes before the released surplus might become available for the labour market. In the absence of such re-organisation, the removal of marginal workers would draw upon the effective working strength and thus will cause decline in total output.

Lewis may be justified in implying that classical economic expansion in Western Europe was primarily due to an elastic supply of labour at low wage rates. He had probably in his mind the British economy in its earlier phase of industrialisation when effective trade union action and factory and social legislation came only after it had undergone a large period of economic and industrial progress. In developing economies, more particularly in India, factors like effective trade union action, labour and social security legislation, enforcement of minimum wage acts, tend to raise wages even though the supply of labour remains redundant.

Further, in a poor country skilled labour is in short supply. "It is not realistic at all to speak of the two types of labour in the two sectors as though they were a homogeneous factor, when complex changes involving the way of life, attitudes, rhythm of work, etc., have to take place before an agricultural worker from the traditional rural society can become even an unskilled worker in an urban industrial urban sector."⁷

A Study⁸ by A. M. Khusro "rules out the applicability of the growth model of Nurkse and Lewis in so far as they base their policy of industrialisation on the exploitation of saving potential inherent in the disguised unemployment associated with agriculture in the underdeveloped countries." The important leakages involved in the transfer are: 1. Price insensitivity of farmers and the consequent price-inelasticity of supply in under developed agriculture. 2. The decline in marketed surplus when terms of trade move in favour of agriculture and the manifestation of backward sloping supply curve of agricultural products. 3. Supplies to the non-agricultural sector may not increase due to increase in hoarding propensity of farmers, wholesale and retail traders.⁹

The main contention of Khusro's Study is that till 1975-76, there can be no absorption of surplus labour from agricultural into non-agricultural sector. The Nurkse-Lewis Model therefore overstated the capa-

7. H. Myint, "Infant industry argument for assistance to industries in the setting of dynamic trade theory," in *International Trade Theory in a Developing World*, I. E. A. Edited by Harrod and Hague, p. 179.

8. Khusro, A. M., *Economic development with no population transfers*, Institute of Economic Growth Paper No. 4, 1962.

9. *Ibid*, p. 10.

city of the modern sector to absorb surplus labour from the subsistence sector. "Only when demand for labour in the modern sector exceeds supply . . . does a net shift of workers from agricultural sector become economically justified, otherwise the result is only an addition to the pool of unemployed in the modern sector."¹⁰ The answer to the problem would seem to be increased employment within agricultural sector rather than in other sectors. There can be enough scope for productive work which can be undertaken with indigenous tools and equipment. Since increased productivity depends upon capital formation in agriculture, the obvious solution to the dual problem of low productivity and low employment is to use the under-employed labour in the agricultural sector rather than transfer it to the non-agricultural sector."

It is not possible to transfer large number of workers without organisational changes from agriculture to industry without a drop in agricultural output. During planting and harvesting season which together account for several weeks in a year, the bulk of labour force is occupied. A farm household does not merely earn annual income but provides economic security since it is based on land and other property and can provide most of the basic necessities of life. Furthermore, a farm provides a certain kind of environment, the advantages and disadvantages of which have to be taken into account in the decision to leave agriculture.¹¹ The non-agricultural sector must compensate for the loss of security if the entire household is to migrate. Thus the supply of labour to the capitalist sector is not perfectly elastic as assumed by Lewis. "Lewis's attention was focussed mainly on the creation of required employment opportunities in the industrial sector and on the consequences of the ultimate "turning up" of the industrial labour supply curve, but he paid relatively little attention to the agricultural sector and to the causes of the upturn and its implications for the dynamics of the reallocation process."¹² The problem has been re-interpreted in terms of allocating investment funds by ensuring constancy of intersectoral terms of trade while freeing only those workers from the agricultural sector which can be productively absorbed by the industrial sector."¹³

10. *Ibid*, pp. 24-25.

11. Yasusuke Marakami and Machiko Kubo, "Migration of Agrarian Labour Force and the Theory of Disguised Equilibrium," *Indian Economic Journal*, Oct.-Dec. 1964.

12. Gustav Ranis, "Theories of Economic Growth in Capitalist Countries," in *Problems of Economic Development*, Edited by E. A. G. Robinson, p. 16.

13. G. Ranis and J. C. H. Fei, "A Theory of Economic Development," *American Economic Review*, Sept. 1961.

It would not be correct to assume that accumulation of capital is determined by the ratio of profits to national income. Aggregate annual savings depend upon this total profit and individual capitalists' wealth.

Another point that invalidates the Lewis model in the context of developing countries is that surplus generated in the process of growth may be utilised either for unproductive purpose or invested in a manner which does not lead to increase in output. In an under developed economy, despite unequal distribution of wealth, the upper classes which have a surplus do not use it for productive investment nor are they interested in entrepreneurial activities. " In an under-developed country because of its being in a pre-industrial stage, income accompanies status rather than function and status is determined more by birth than by merit. The result is that income gets disassociated with productivity and there is no incentive either for intensive work or the play of enterprise in the productive field. Thus the normal pattern of income distribution in an under-developed country encourages neither saving nor enterprise and does not therefore promote economic growth."¹⁴ Similar view is expressed by Meier and Baldwin : " Inequality in the distribution does not contribute as much to productive investment as might be expected... (because) the group at the top of the income pyramid is composed of land owners and traders who tend to invest in more land, real estate, speculation, capital flights or inventory accumulation rather than public utilities."¹⁵ In a developing economy we do not have the Schumpeterian entrepreneurs due to sociological, political and historical reasons. The entrepreneurs in such countries adopt short economic horizons and avoid long-term commitments in industry. We do not have entrepreneurs as visualised in the Lewis Model who appropriate surplus and re-invest that in production.

The Lewis Model visualises a large corporate sector which re-invests a large part of its profits. In an under-developed economy, on the other hand, the corporate sector is very small. According to the Reserve Bank of India Study¹⁶ of savings in Indian economy, savings of the corporate sector accounted for only 0.7% of national income in 1962-63, of the government sector 2.5% and of the household sector 6.3% of national income. Between 1951-52 and 1962-63, corporate sector accounted for 5.9%, the government sector 19.5% and the household sector 74.6% of total domestic savings. Similar is the conclusion of the

14. V. K. R. V. Rao, *Income and Wealth Series*, edited by Colin Clerk, p. 309.

15. Meier and Baldwin, *Economic Development—Theory, History and Policy*, pp. 307-308.

16. " Estimates of Savings and Investment in Indian Economy ", *Reserve Bank of India Bulletin*, March, 1965.

study of savings by the National Council of Applied Economic Research when it observes : “ However, corporations have never played a substantial role in the Indian economy or the saving total as they have in other countries, accounting only for 2 to 3% of national income in 1948-49 to 1957-58 period, with individuals and government accounting for roughly 80 to 82% respectively. ”¹⁷ Another study¹⁸ concludes: “ that both the government and the corporate sectors tend to depend largely upon personal savings and their growth for their developmental programme. In view of this, the generally accepted saving model, emphasising the need for a rise in the share of corporate profits in national income as well as the need for a positive role for inflation in economic development, may not hold good. ”

The household sector predominates in national savings in developing countries and the other two sectors, viz. the government and the private corporate sectors draw upon the savings of the household sector for raising resources for investment.¹⁹ A Study²⁰ of the Planning Commission of the inter-sectoral flow of gross savings during the fourth five year plan in India shows that savings of the household sector will represent 6.3% of national income and 53% of total domestic savings during the fourth five year plan period. 17% of this are expected to be made available to the private corporate sector, 40% to the public sector and 43% would be utilised by the household sector for investment in the same sector. Total investment in the public sector during the fourth plan period will be 10.3% of national income, whereas savings in this sector will represent 4% of national income. Investment in the household sector will account for 2.6% whereas savings in this sector will represent 6.3% of national income. Investment in the corporate sector will be 5.8% of national income, whereas savings will be of the order of only 1.7% of N. I.

The foregoing discussion shows that the households save a great deal more than they invest directly while the corporate and the government sectors invest more than they save. This asymmetry in saving-investment structure underlines the importance of inter-sectoral flow of funds in a developing economy and also the need for increasing the effectiveness of financial intermediaries in accelerating such inter-sectoral flow of funds.

17. *Savings in India*, National Council of Applied Economic Research.

18. Vakil and Brahmanand, “Capital Supply and Growth—Sources of Savings”, *Economic Development with special reference to East Asia*, IEA, Edited by Kenneth Berril, p. 98.

19. “Financial Flows in Indian Economy”, *Reserve Bank of India Bulletin*, March, 1967.

20. Planning Commission’s Perspective Division, *Draft Fourth Plan : Material and Financial Balances—1964–65, 1970–71 and 1975–76*, p. 113.

The contention of Lewis that "only capitalists save" or "low incomes lead to low levels of savings" has been contradicted by actual facts. As S. J. Patel observes: "the low rate of productive investment in India may be explained not by reference to the low average income, but by the preponderance of feudal income, which in the main, is sterile at present for furthering economic development."²¹ Similarly the UN World Economic Survey 1960 observes: "It might be expected that a smaller proportion of income would be available for saving in the lower income countries, since relatively more would be absorbed in meeting subsistence needs...the experience of under-developed countries in the 1950's however, offers a very limited support for this explanation. In a number of countries, such as Burma, the Congo, Nyasaland and Rhodesia, low income levels have not prevented the attainment of high levels of domestic savings. At the opposite pole are countries such as Chile, Puerto Rico, which have experienced low levels of domestic savings notwithstanding their higher income levels and more advanced economies." The Economic Survey of Asia and Far East, 1961 substantiates this statement thus: "...South Korea which ranks high in terms of per capita income, generated little or no domestic savings whereas Burma with a per capita income in the lower range ranked high in terms of the rate of domestic savings," and adds that "the association between income, growth and domestic savings does not appear to be strong."

Arthur Lewis maintains that inflation for the purpose of creating capital is self-destructive. This hypothesis of the Model is not based on a realistic nature of the under-developed countries which are characterised by structural rigidities, limited productive capacity, low elasticity of supply, high income elasticity for food and high propensity to consume. "In a Western type of economy one of the factors which hold down the pace of any resultant inflation is the tendency of these additional profits to be saved or paid in taxes...In an under-developed economy, the situation is basically different. If rising prices lead to higher profits, these do not typically accrue to a company at all, but to working farmers, traders and other managers of small scale business..... Moreover, in many cases, the "entrepreneurs" who receive profits are not rich, but struggling people with low income, and a real need to spend more on consumption. In such circumstances, the built-in brakes on the pace of inflation which exist in the West may even be replaced by built-in accelerators because the new distribution favours potential spenders

21. S. J. Patel, "The Distribution of Income in India", *Indian Economic Review*, Feb., 1956.

rather than potential savers.”²² Further as Dr. Roberto Campos says, “Inflation is likely to discourage investment in price-rigid economic overheads such as power, transport and communications by shifting the incentive to invest in the direction of price-flexible and quick-yielding sectors. A wrong disproportionality in industrial development is also nurtured since investment goods which require a long gestation period, suffer a loss in relative profitability as compared to light industry. These induced disequilibria brought about by inflation tend to low down or stifle the rate of growth.”²³ Many allocational inefficiencies are associated with inflation as it destroys the allocation function of price-mechanism. There is greater investment in inventories and projects having short gestation period. Statistical evidence²⁴ collected does not establish any positive or negative relationship between rate of profit and rate of investment or growth in real GNP.

Over-valuation of labour for the manufacturing sector due to divergence between private transfer wage of rural surplus labour and true social opportunity cost, does not provide a conclusive argument for protection.²⁵ Labour is merely one of the factors of production. Rates of interest are much higher and therefore capital is more “over-valued” in rural sector in an under-developed economy. Thus the question whether manufacturing costs as a whole are overvalued relating to agricultural costs will depend on the relative capital-labour ratios in the two sectors and the relative size of the wage and interest gaps. The effects in the opposite direction of the higher rate of interest in the rural sector and the higher capital-labour ratio in the industrial sector may more than counterbalance the handicap which the latter may suffer due to “over-valued labour”.²⁶ Thus the argument that wage-productivity gap between the subsistence agricultural sector and the urban industrial sector would be corrected by protecting (subsidising) the latter, cannot be valid ground for giving protection (subsidy) to the industrial sector.

In view of the above important limitations, the Lewis Model might usefully be amended or supplemented in many respects.

22. W. B. Reddaway, “The Economics of Under-developed Countries,” *Economic Journal*, March, 1963, pp. 9-10.

23. Roberto De Oliveria Campos, “Inflation and Balanced Growth” in (Eds) Howard S. Ellis and Henry C. Wallich, *Economic Development of Latin America*, p. 102.

24. M. R. Madhavan, “Inflation and Economic Development”, *Indian Economic Journal*, January, 1963.

Warner Baer, “Brazil : Inflation and Economic Efficiency”, *Economic Development and Cultural Change*, Vol. XI, No. 4, pp. 396-97.

25. H. Myint, “Infant Industry Argument for Assistance to Industries in the setting of Dynamic Trade Theory” in *International Trade Theory in a Developing World*, edited by Harrod and Hague, p. 178.

26. *Ibid*, p. 178.

ADAM SMITH ON ECONOMIC GROWTH AND ITS RELEVANCE TO INDIAN CONDITION

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SUMMARY

Even though Adam Smith did not coalesce his ideas on economic growth as an integrated formulation, piecing up together his scattered thoughts in his economic principles, yield meaningful analysis very much relevant to the contemporary Indian situation. Primacy given to improvement in agriculture as the base for future development, is as much true to-day as when formulated. Similarly, his advocacy for creation of suitable climate for a freer expression of 'self-interest' for achieving general well-being has some message for the Indian planners—though in a different context.

The theory of growth has not been elaborated at any one place in the works of Adam Smith. His postulations are scattered throughout his analysis of economic principles. But when they are pieced up together, they yield meaningful analysis very much relevant to the Indian situation. This paper aims at bringing out what may be described as the economic growth theory of Adam Smith and its applicability to the contemporary Indian condition.

In the Smithian system, technical improvement in agriculture is the pivotal point for sparking off development in other sectors of the economy. If due to improvement in agriculture, one family could produce food sufficient for two families, it follows from it that the labour of half of the society could provide food for the whole. The other half of the population would be released for producing other things or in satisfying the other wants and fancies of mankind.¹

The creation of agricultural surplus is *sine qua non* for generating demand for other goods and services which could be purchased with the excess supply of agricultural products. Expansion in the demand or market for non-agricultural products facilitates division of labour. Specialisation through division of labour would improve the "dexterity of the workman" which will of necessity "increase the quantity of work he can perform.." ² by saving on "time commonly lost in

1. Adam Smith, *An Enquiry into the Nature and Causes of the Wealth of Nations*, ed. Edwin Cannon (New York : 1937), p. 163.

2. *Ibid.*, Bk. 1, Ch. 1, p. 11.

passing from one sort of work to another;³ and “thirdly and lastly, (it will permit) the application of proper machinery.”⁴

Persons having command over more food than they possibly could consume, would be too eager to exchange their surplus for manufactured goods. The desire for more amenities of life is almost endless and hence the surplus in agriculture creates a chain reaction in the manufacturing sector. Therefore, every increase in surplus from land would impel more specialisation in industry through division of labour, “the quantity of materials which they can work up, increases in a much greater proportion than their numbers. Hence arises a demand for every sort of material which human invention can employ, either usefully or ornamentally, in building, dress, equipage, or household furniture. . . .”⁵ “The poor in order to obtain food, exert themselves to gratify those fancies of the rich, and to obtain it more certainly, they vie with one another in the cheapness and perfection of their work.”⁶

The advantage accruing from being in possession of surplus agricultural produce induces further improvement in agriculture. But paucity in the superiority in labour resources and application of more inputs in agriculture would act as a constraint in bringing about improvement in agriculture as fast as it was possible in industry through specialisation.

However, those engaged in agriculture will gain from economic development in two ways. First, with diminution of labour employed in agriculture, the real value of agricultural products would rise, and the landowners would receive a larger share of them. Smith says that “every improvement in the circumstances of the society tends either directly or indirectly to raise the real rent of land, to increase the real wealth of landlords, his power of purchasing labour, or the produce of labour of other people. . . . The landlord exchanges that part of his produce, which is over and above his own consumption, or what comes to the same thing, the price of that part of it, for manufactured produce. Whatever reduces the real price of the latter, raises that of the former. An equal quantity of the former becomes thereby equivalent to a greater quantity of the latter; and the landlord is enabled to purchase a greater quantity of the conveniences, ornaments, or luxuries, which he has occasion for.”⁷

3. *Ibid.*, Bk. 1, Vol. 1, p. 12.

4. *Ibid.*, Bk. 1, Ch. 1, Vol. 1, p. 13.

5. *Ibid.*, Vol. 1, pp. 6 and 164.

6. *Ibid.*, p. 164.

7. *Ibid.*, Bk. 1, Vol. I, p. 275.

Second, landowners also benefit indirectly because higher specialisation in industry would reduce the exchange value of manufactured goods. Labour would also be better off because a part of the commodities they bought could be had cheaply.

On the other hand, manufacturers and middlemen would face a reduction in the rate of their profits through a fall in the price of their products.⁸ This would affect capital formation which should be avoided in order that the process of development proceeds uninterruptedly.

It was therefore necessary that all obstacles to economic progress be removed. For this he relied upon propellant like 'self-interest.' Efforts directed to maximize personal gain are like "invisible hand," prompting individuals to further community economic welfare.⁹ The urge to acquire power and prestige through acquisition of wealth and riches have impelled innovators and merchant class to make immense sacrifices.

Smith said that a poor man's son when he sees his miserable condition vis-a-vis the conveniences enjoyed by rich, devotes himself to the pursuit of acquiring wealth through hard labour. Through his unrelenting efforts, he tries to acquire talents superior to all his competitors and make known his capabilities in order to secure a superior employment. "For this purpose he makes his court to all mankind; he serves those whom he hates, and is obsequious to those he despises."¹⁰

Opulence promising him pleasure and satisfaction — prompting hard labour, deludes him once he is able to amass it. "It is this deception which rouses and keeps in continual motion the industry of mankind. It is this which first prompted them to cultivate the ground, to build houses, to found cities and commonwealths, and to invent and improve all the sciences and arts, which ennoble and embellish human life; which have entirely changed the whole face of the globe, have turned the nude forests of nature into agreeable fertile plains...."¹¹

His views about the illusory character of personal opulence as propounded in the *Theory of Moral Sentiments* are not inconsistent with the *Wealth of Nations* which concerned with the best method of acquiring personal riches. He held the view that people have persisted in thinking otherwise, and they have worked hard to make the earth "redouble her

8. *Ibid.*, p. 332.

9. Frank Neff, *Economic Doctrines* (New York : McGraw-Hill Book Company, Inc., 1950), p. 107.

10. Adam Smith, *The Theory of Moral Sentiments* (1759) (London : 1880), pp. 259-60.

11. *Ibid.*, pp. 263-64.

natural fertility, and to maintain a greater multitude of inhabitants.”¹² That is why Adam Smith devoted himself to the task of finding out that social arrangement which would be conducive to the pursuit of self-interest, contributing, in turn, to the general well-being. His advocacy of *laissez-faire* was an attempt to create a suitable climate for the interplay of motives like self-interest, on the assumption that free competition in factor and product markets would ensure a proper allocation of resources and distribution of wealth.¹³

His theory of *laissez-faire* was an extension of “natural law” — widely accepted philosophy of the eighteenth century, to economic principles. According to Smith, nature has given every individual the right to pursue the economic activity of his choice, to maximize his own advantage, as long as he does not overstep his rights and impinges upon the rights of others.¹⁴ That, according to Adam Smith, is the only way to maximize human welfare.

One other reason that prompted Smith to propound his doctrine of *laissez-faire* was that the government of his time was corrupt and incompetent. Perhaps, as a reaction to it, he was against entrusting to government functions beyond its fundamental duties of justice and security. He was even against the policy of exploiting the colonies by the Imperial government of England. At one stage he went on to describe the government of India as a council of foreign merchants. “The plunderers of India”, he called them in one passage; and “military and despotical,” in another.¹⁵

Relevance to Indian Situation

In the Smithian system, improvement in agriculture propelled development of the industrial sector. The Indian planning till about the end of the *Third Plan* adopted a strategy which gave primacy to the development of industries with a comparative neglect of the agriculture. This policy stemmed from the conviction that once break-through in industry was achieved, improvement in agriculture could be achieved without difficulty. But the adoption of this strategy has created problems which have bogged down even industrial expansion.

In a mature economy, development of capital goods industries is dependent upon the profitability of consumer goods industries. But in a poor economy like India, a large proportion of consumers' income

12. *Ibid.*, p. 264.

13. *Wealth of Nations, op. cit.*, Vol. I, Bk. I, Ch. II.

14. Neff, *op. cit.*, p. 106.

15. *Wealth of Nations, op. cit.*, pp. 603 and 605.

is spent on foodgrains leaving very little for non-food items. Therefore, demand for non-food consumption goods was dependent upon the growth of population and agricultural goods. Since the supply of agricultural goods determined the demand for non-food consumer goods, by implication the profitability of investment goods, and thus, determined the rate at which the economy could grow.

Urban non-food consumer industries could expand only if the rise in food prices did not affect their cost and profit position. The expansion of urban industries was discouraged due to two types of pressures, one, in the form of reduced demand and ultimately falling prices, and second, in the form of increased cost of production through increased wages. The more food prices rose, the more difficult it became to keep labour in consumer industries, unless money wages were allowed to rise as well.

Rising agricultural prices were not particularly effective in stimulating additional output because of low price elasticity of supply. Rising prices generated speculative activity which was not conducive for increased market arrivals. At the same time, rising food prices raised cost of other commodities via the cost of living and wages.

A larger proportion of increased money wages in urban industries was again spent on food, leading to a further rise in wages and prices, while adding little or nothing to the profitability of urban industries. This led to the spiral of rising prices and slowing down of growth of urban industries. The Indian experience therefore vindicates the Smithian postulation that improvement in agriculture is the prime mover in industrial expansion. This is particularly important because in India, the State has taken over the role of landlords. Growth in agricultural surplus and a comfortable position vis-a-vis industries would have helped in accelerating savings and so capital formation.

Again Adam Smith's advection for creation of suitable climate for a freer expression of 'self-interest' for achieving general well-being has some relevance for our condition, though in a different context. While economic planning can help in initiating industrial development and in breaking the inhibiting factors which blocked development in the past by bringing about structural transformation and moulding the social values of the community, its unimaginative pursuance can again be the cause of slowing down of entrepreneurial efforts and ultimately the economy may slide back to stagnation. The doctrinal craze for the State to enter into almost every sphere of economic activity as if the government is wielding a magic-wand, a mere touch of which would achieve the impossible, at a time, when the past performance of government companies presents a rather dismal picture, is rather inexplicable. As a

result, individual enterprise was stifled and people have developed the habit of looking to the government for every bit of improvement, guidance and inputs that may be needed for accelerating production in agriculture and to some extent in industry. But it is often forgotten that in a non-totalitarian society everything cannot be done by the State.

The State in India has so far failed to eradicate the inhibiting social values, or in mobilising domestic efforts in achieving its own set targets. Even if governmental machinery had failed in expanding investment and productive activities in the desired magnitude, inculcation of feeling of control over their own lives and 'rational' individualistic attitude to life, would have, through private endeavour, made up for the short-falls in governmental efforts. The community would have stepped-up savings, for earning business profit. But expanding bureaucratic set-up of planning and execution machinery tends very substantially to deaden the "upward ferment" of developmental impulses, ideas and decisions originating at the local level. The State failed in creating conditions under which individual response mechanism could have operated more freely.

Therefore, if the process of development is to be a continual phenomenon, as it should be, government action should be directed to the generation of secondary economic forces, so that the economy may be able to reach in not too distant future self-sustaining stage of development.

Lastly, complete control over production and distribution by the State involves regimentation and rigid control over all economic activities. And, such authoritarian arrangement pre-supposes concentration of wisdom and integrity in those few, who control and direct the economic system. Absence of concentration of wisdom and integrity in those in authority, is borne out by the prevalence of inefficiency and corruption in governmental activities, which means waste of meagre resources which an underdeveloped country like India was able to mobilise for accelerating economic development.

Summing up, one is tempted to say that the growth theory as enunciated by Adam Smith has many lessons and message for the Indian planners and the earlier they realise, the better it would be for the country's progress.

THEORIES OF GROWTH—THE DECLINING RATE OF ACCUMULATION ASPECTS*

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SUMMARY

The declining rate of accumulation was the dominant thesis in the classical economists' approach to economic dynamics. The classical economists' approach, typified by the Ricardian analysis, was essentially based on the Malthusian theory of population and the law of historically diminishing returns. Marx, even after rejecting both these classical assumptions, developed the thesis of declining average rate of profit. The contemporary approach, by and large, assumes a linear homogeneous production function with respect to capital and labour and an exogeneous rate of growth of population and arrives at a conclusion that there happens to be a stable growth rate for the economy equal to the rate of growth of population. The stability condition implies that a chance deviation from the equilibrium growth path generates forces which bring the economy back to equilibrium path (but the fluctuations around the path are not necessarily ruled out). The stability conditions have usually been spelled either in terms of neo-classical assumptions of factor substitution or in terms of 'classical' saving function. An attempt has been made that even with the 'classical' saving function, the stable growth rate may not always be a feasible solution and there may be possibilities of declining rate of accumulation.

The declining rate of accumulation was the dominant thesis in the classical economists' approach to the problem of growth of income and wealth of nations. The thesis which was developed by Smith visualised enlightened self-interest alongwith the propensity to truck, barter and exchange as the essential cause of division of labour which increases the productivity of labour ultimately resulting in maximum opulence.¹ Since the extent of division of labour is limited by the extent of market,² the increase in the stock of capital causes competition among the capitalists which leads to a decline in the rate of profit and, hence, causes a decline in the rate of the growth of capital.³ The economy thus has a

* I express my thanks to Professor A. K. Das Gupta for his valuable comments. My thanks are also due to Sri R. N. Maharaj and Sri S. A. Khan for their helpful discussions.

1. Smith, Adam, (1776), *The Wealth of Nations*, The Modern Library, New York, Book I, chs. I and II.
2. Smith, Adam, *op. cit.*, ch. III.
3. Smith, Adan, *op. cit.*, ch. IX.

tendency to move from a progressive state to a stationary state (i. e., to a situation of maximum opulence) which is characterised by a low rate of profit as well as very low wages (that which is barely sufficient to keep up the number of labourers).⁴ The wages will be higher than the subsistence wages in a progressive state which would cause an increase in population⁵ needed for accumulation.

Malthus, on the other hand, visualised the process of accumulation coming to an end due to general over-production (i.e., due to the non-operation of Say's law) before an economy attains the situation of maximum opulence.⁶

The classical approach to economic dynamics, so far as rigour of analysis is concerned, is typified by Ricardo. He rejected the Malthusian plea of general over-production⁷ but accepted the Malthusian thesis for population which implied a perfectly elastic supply of labour in the long run at the subsistence wage rate.⁸ Assuming the operation of the law of historically diminishing returns⁹ (caused due to fixity of land and slow rate of technological progress) in the agricultural sector of the economy, he developed the theory of declining rate of profit which results in the declining rate of accumulation ultimately leading to a stationary state.¹⁰ Surplus population has no chance of threatening the tranquility of the stationary state as nature (i.e., Malthusian positive checks) is supposed to take care of any such tendency. "Classical political economy, which leaned so heavily on the Malthusian population theory, was always inclined to predict the imminent end of economic progress. . . . Economic progress must finally be arrested by two overriding and immutable natural laws : the law of population and the law of diminishing returns".¹¹

Marx rejects the Ricardian thesis of historically diminishing returns because of his assumption of sufficiently high rate of technological pro-

4. Smith, Adam, *op. cit.*, pp. 94-96.

5. Smith, Adam, *op. cit.*, p. 81.

6. Malthus, T. R., (1836), *Principles of Political Economy*, pp. 314-330.

7. Correspondence between Ricardo and Malthus in the year 1820 and 1821 in Sraffa, Piero, (ed.), *The Works and Correspondence of David Ricardo*, Vols. VIII and IX.

8. Ricardo, David, (1811), *The Principles of Political Economy and Taxation* ch. V.

9. Ricardo, David, *op. cit.*, ch. II.

10. Ricardo, David, *op. cit.*, chs. VI and XXI.

11. Sweezy, Paul M., (1942), *The Theory of Capitalist Development*, p. 92.

gress which is capital-intensive in nature.¹² Rate of growth of population is also no longer an endogeneous variable¹³ (as suggested by the Malthusian theory of population) in the Marxian analysis of economic dynamics. Capitalists, according to Marx, in their greed for increased individual rate of profit¹⁴ adopt such capital intensive technique as not only leads to cycles of unemployment (which is explosive) and over-production but also leads to a decline in the average rate of profit¹⁵. These very manifestations (popularly termed as inherent contradictions), which are the outcome of the capitalist system of production, threaten the continuation of the institution of capitalism.

The contemporary approach to economic dynamics, by and large, is characterised by a linear homogeneous production function¹⁶ with respect to capital and labour as well as an exogeneous rate of growth of population. These, when further reinforced by the neo-classical thesis of factor substitution (i.e. infinite number of techniques of production) and the marginal productivity theory of distribution, define a stable¹⁷ growth rate for the economy (equal to that of rate of growth of population).¹⁸ It also implies a stationary state for a stationary population.¹⁹ The stability condition, in growth models having finite number of techniques of production, is defined by the "classical" saving function where all wages are consumed and non-wage income alone is the source of saving.²⁰ In such a situation a higher rate of growth of population

12. Marx, Karl, (1867), *Capital*, Foreign Language Publishing House, Moscow, 1961, Vol. 1, ch. XXV.
13. Marx Karl, *op. cit.*, Vol. I, pp. 631 n. and 637.
14. Marx, Karl, *op. cit.*, Vol. III, pp. 256, 257, 259 and 260.
15. Marx, Karl, *op. cit.*, Vol. I, ch. XXV and Vol. III, chs. XIII to XV. See also Prasad, Pradhan Harishankar, "Marxian Model of Growth", *Artha-Vikas*, July 1966.
16. Infinite as well as finite number of techniques of production.
17. The stability condition implies that a chance deviation from the equilibrium growth path generates forces which bring the economy back to the equilibrium path.
18. Solow, R. M., "A Contribution to The Theory of Economic Growth," *Quarterly Journal of Economics*, February, 1956.
- Swan, T. W., "Economic Growth and Capital Accumulation," *Economic Record*, November, 1956.
- Meade, J. E., (1961), *A Neo-Classical Theory of Economic Growth*.
19. J. S. Mill, however, anticipated the feasibility of declining rate of profit consequent upon rising age rate caused due to stationary population, which results in the declining rate of accumulation ultimately leading to stationary state. See Mill, John Stuart, *Collected Works*, Vol. III, Book IV, pp. 705-796.
20. Hahn, F. H., and Mathews, R. C. O., "The Theory of Economic Growth : A Survey" in *Surveys of Economic Theory* prepared for The American Economic Association and The Royal Economic Society, p. 16.

than the rate of growth of capital, which leads to a decline in wage rate and, hence, a redistribution in favour of non-wage earners, results in an increase in the rate of growth of capital so that it catches up with the rate of growth of population. If, on the other hand, the rate of growth of capital happens to be greater than that of population, the redistribution in favour of wage earners brings the economy back to the equilibrium path. Even if the "classical" saving function is replaced by the Kaldor assumption²¹ that the average rate of saving with respect to non-wage income (s') is higher than that of wage income (s''), the stability condition is not threatened in situations where there is only one technique of production²². However, in all such models (discussed in this para) the possibility of fluctuations around equilibrium growth path is not necessarily ruled out.

The stability condition, however, is seriously threatened as "classical" saving function is replaced by the Kaldor assumption (i.e., $1 \geq s' > s'' > 0$) in a situation where there are more than one (but finite number of) techniques of production. In a one commodity economy²³ the rate of profit (r) is defined by the following equation :

$$(1) \quad wa + br = 1$$

where

w is the real wage rate,

a is production coefficient of labour,

b is production coefficient of capital, and there is no depreciation of capital.

The rate of growth of capital (g) in a situation, where it is assumed that wage is paid post factum as a share of product²⁴ is given by

$$(2) \quad g = s'r + \frac{s''wa}{b} .$$

It is assumed that two techniques of production are available to the economy after an invention, where for technique 1, $a = a_1$ and $b = b_1$ and for technique 2, $a = a_2$ and $b = b_2$. The rates of profit

21. Kaldor, Nicholas, "Alternative Theories of Distribution", *Review of Economic Studies*, Vol. XXIII, No. 2, 1955-6.
22. Prasad, Pradhan Harishankar, "Business Cycle Phenomena in the Harrod-Domar Model", *International Economic Review*, January, 1965.
23. The assumption about a one commodity economy is made for the sake of simplicity. Important as the problems of multi-commodity economy are, quite a number of issues can be analysed in an abstraction from it.
24. Sraffa, Piero, (1960), *Production of Commodities by Means of Commodities*, p. 10.

for the two techniques are, then, given by r_1 and r_2 while the rates of growth are given by g_1 and g_2 . As technique 2 is invented such

$$\text{that } b_2 > b_1 \text{ and } \frac{s'}{s' - s''} > \frac{w(a_1 b_2 - a_2 b_1)}{b_2 - b_1} > 1,$$

there emerges a possibility of declining rate of accumulation. As $r_2 > r_1$ while $g_2 < g_1$, capitalists for a higher rate of profit shall adopt technique 2 (which is capital-intensive) which will result in a decline in the rate of accumulation²⁵.

Moreover, even with the "classical" saving function (i.e., $s''=0$), the stability condition is threatened if the assumption regarding post factum payment of wages is dropped. Then, there emerges two rates of profit—the short term-rate (e) and the long term rate ($e + m$). The profit equation is there defined by

$$(3) \quad wa(e + 1) + b(e + m) = 1$$

and the rate of growth by

$$(4) \quad g = \frac{s'(1 - wa)}{b + wa}$$

instead of equations (1) and (2).

It is assumed that e is institutionally determined (as a result of monetary policy); the rate of profit is, then, given by m . If technique 2 that is invented is such that $b_2 < b_1$ and

$$w(a_2 + (b_2 + 1) \frac{a_2 - a_1}{b_1 - b_2}) > 1 > (e + 1) w(a_2 + b_2 \frac{a_2 - a_1}{b_1 - b_2}),$$

we find that while $m_2 > m_1$, $g_2 < g_1$.

As capitalists adopt technique 2 with a view to increase profit, the rate of accumulation tends to decline. Hicks²⁶ avoids such a possibility by an implicit assumption about post factum payment of wages so that there is only one rate of profit (i. e., $e = 0$) and, hence, in his model $g = s'm$. On the other hand, it is often maintained that Marxian analysis of declining rate of profit is a fairly weak link in his chain of analysis.²⁷

25. See also Prasad, Pradhan Harishankar, "Choice of Technique in Under-developed Economies", *Indian Economic Journal*, January-March 1965, p. 330.

26. Hicks, J. R., (1965), *Capital and Growth*, pp. 140 and 146.

27. Sweezy, Paul M., *op. cit.*, p. 104.

Robinson, Joan, (1942), *An Essay on Marxian Economics*, pp. 5-6.

A THEORETICAL MODEL AND ITS IMPLICATIONS FOR ECONOMIC GROWTH IN INDIA

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SUMMARY

In this paper an attempt is made to construct a simple model of growth which can depict the basic forces which govern growth in the initial stages in an underdeveloped economy. The model is based upon Domar's equilibrium condition of growth. It is arrived at by introducing certain basic functional relationships in the equilibrium equation. The equation shows that the growth rate of an underdeveloped economy is basically governed by three factors, viz., the marginal saving-income ratio, the marginal output-capital ratio, and the rate of growth of population. It seems during the period of planning we have largely failed in adequately manipulating the strategic determinants governing these three basic factors.

The purpose of this paper is to construct a theoretical model of growth for an underdeveloped economy and to draw some implications from it for examining the rate of economic growth in India. The theoretical model will bring to the fore significant variables which are of crucial importance in the initial stages of development. The implications derived on the basis of the model will help in understanding the main forces which affected the rate of growth in India during the first decade of planning. The understanding of these forces will indicate the requisites which should be fulfilled in order to achieve high rates of growth in future.

The first section of the paper is concerned with the formulation of the theoretical model of growth. The second section is concerned with the analysis of the determinants of the strategic factors of growth indicated by the model. The last section examines what part these crucial factors have played during the first decade and half of planning in India and it also indicates how they should be manipulated to achieve high rates of growth in future.

I

Economic growth in underdeveloped countries has to be achieved with 'substantial' price stability, if forces which impede growth in the long run are to be avoided. This statement will generally be accepted. However, difference of opinion would prevail over what should be

regarded as 'substantial' price stability, or in other words differences may prevail over what should be regarded as 'tolerable' degree of price-instability. In this area differences would prevail not only because it is not certain what degree of price-instability (if any) would help accelerating economic growth, but also because in judging other effects in the form of distributive and allocative changes as desirable or otherwise value judgments would enter. However to take growth with stability as the proper goal of economic policy would not be generally questioned.

If it is desirable to accelerate growth while maintaining monetary stability, dynamic conditions of stability should form the core of our model of growth. Thus we can use Domar's theoretical framework in order to construct the dynamic model of growth. However, the theoretical framework of Domar has to be modified to make it suitable for analysing the growth process of an underdeveloped economy. The main modification which would be necessary is to shift the emphasis in the model from demand-sufficiency to supply-sufficiency. For, the basic framework of Domar emphasises the conditions of equilibrium between increased monetary demand and increased supply of output to meet this demand. When applying these conditions of equilibrium to a developed economy in normal times, the emphasis in interpreting the model would be on the fulfilment of the conditions on the side of demand-sufficiency. But when we are analysing the growth process in the initial stages of development of an underdeveloped economy, the emphasis has to be on the side of supply-sufficiency. This change in emphasis becomes necessary because in a developed economy the equilibrium normally is likely to be disturbed because of insufficiency of demand; while in the case of an underdeveloped economy the equilibrium is likely to be disturbed because of supply-insufficiency.

With this change in emphasis Domar's basic framework can be used to construct a model of growth with stability for an underdeveloped economy.

The basic equation of Domar's framework can be written as under :

$$dI \times \frac{1}{s} = I \times r \quad \dots (1)$$

(where dI stands for increment in investment, s stands for the marginal propensity to save, and r stands for the marginal output capital ratio).

The equation can also be written as

$$\frac{dI}{I} = s \cdot r \quad \dots (2)$$

If we assume a constant relationship between the rate of growth of investment and the rate of growth of income (output), we can also write the equation as :

$$\frac{dY}{Y} = s \cdot r \dots\dots\dots (3)$$

(where dY and Y stand for the increment in income and income respectively).

The equation shows that the equilibrium rate of growth of income depends upon the product of marginal saving-income ratio and the marginal output-capital ratio. It follows that to raise the rate of growth one should raise s , or r , or both. However, it should be noted that “ s ” and “ r ” are not wholly independent of each other. For, given the efficiency of organising production and the spectrum of techniques, the higher the value of r greater will be the labour intensity of production, and greater will be the share of wages in the total sales-proceeds. And generally as the saving propensities of the wage-earners and non-wage-earners would be different change in r will affect saving from a given level of income. Thus generally an increase in r under given conditions is likely to be associated with a fall in s . And, therefore, out of a spectrum of techniques, the technique suitable for promoting high rates of growth in an underdeveloped economy would be that where the increment in r achieved by saving of capital (resulting from labour-intensity) is atleast as high as the decrement in “ s ” associated with such a choice of technique.

Now, s in our model can be regarded as dependent mainly on the rate of growth of per capita income. And introducing dynamic relationships we can assume “ s_t ” as a function of

$$\frac{dy_t - 1}{y_t - 1} \text{ (where } dy \text{ and } y \text{ stand for the increment in per capita income}$$

and per capita income respectively). We can write the functional equation as under :

$$s_t = a \frac{dy_t - 1}{y_t - 1} \dots\dots\dots(4)$$

Here we have taken the saving-income ratio as a function of the rate of change in per capita income in the previous period. If the period is taken to be approximately of one year, the assumption of one period lag may be defended on *a priori* grounds. For it takes some time before the changes in the per capita income changes the saving and consumption patterns of individuals, and in the case of corporate

earnings, usually the income will take a year's time to become disposable income.

Now we can relate the rates of growth of income and the rates of growth of per capita income by an identity, where we introduce the rate of growth of population as the third factor.

Thus

$$\frac{dy_t}{y_t} = \frac{dY_t}{Y_t} - \frac{dP}{P} - \frac{dY_t}{Y_t} \cdot \frac{dP}{P} \dots\dots (5)$$

(where dP and P stand for the increment in population and population respectively). For small rates of growth of income and of population

the factor $\frac{dY_t}{Y_t} = \frac{dP}{P}$ will be negligible and therefore can be

omitted for simplification. We can write the equation as :

$$\frac{dY_t}{Y_t} = \frac{dy_t}{y_t} + \frac{dP_t}{P_t} \dots\dots\dots(6)$$

Now we take the fundamental equation of economic growth, that is, equation (3), and introduce time-subscripts in it. The equation then can be written as :

$$\frac{dY_t}{Y_t} = s_t \times r_t \dots\dots\dots (7)$$

substituting the value of $\frac{dY_t}{Y_t}$ from equation (6) and that of s_t

from equation (4) we get :

$$\frac{dy_t}{y_t} + \frac{dP_t}{P_t} = a \frac{dy_t - 1}{y_t - 1} \times r_t \dots(8)$$

$$\text{Or, } \frac{dy_t}{y_t} = a \frac{dy_t - 1}{y_t - 1} \times r_t - \frac{dP_t}{P_t} \dots\dots(9)$$

To make the equation more significant for depicting the chief factors involved in the growth process of an underdeveloped economy in the initial stages of development, we introduce another significant assumption.

We assume that the rate of growth of population, $\frac{dP_t}{P_t}$ is a positive function of the rate of growth of per capita income in the two-

period past, $\frac{dy_{t-2}}{y_{t-2}}$. This assumption which is a Malthusian hypothesis is likely to be true in the initial stages of development, as rising living standards would depress the death rates much faster than the birth rates. This functional relationship can be denoted by the following equation :

$$\frac{dP_t}{P_t} = B \frac{dy_{t-2}}{y_{t-2}} \dots\dots\dots (10)$$

Substituting the value of $\frac{dP_t}{P_t}$ from equation (10) in the equation (9) we get

$$\frac{dy_t}{y_t} = a \frac{dy_{t-1}}{y_{t-1}} \times r_t - B \frac{dy_{t-2}}{y_{t-2}} \dots\dots\dots(11)$$

This can be regarded as the fundamental dynamic equation depicting the growth process in the initial stages of development of an underdeveloped economy. It rests on two simple assumptions, viz. (i) marginal saving-income ratio is a function of the rate of growth of per capita income and (ii) the rate of growth of population positively depends upon the rate of growth of per capita income. It is easy to see from the equation that the rate of growth of per capita income is dependent upon three crucial factors (apart from the past values of the rate of growth of the per capita income). These three factors are : (i) the value of coefficient *a*, (ii) the value of *r* and (iii) the value of the coefficient *B*. Now in the next section we shall analyse the basic determinants of these three factors and see how they can be manipulated through planning.

II

From our fundamental equation we can see that the rate of increase of per capita income which can be achieved in an underdeveloped economy is positively dependent upon the rate of increase of per capita income in the previous period. If the past rate of growth is high we can achieve a high rate of growth in the current period also. But the magnitude of this effect will depend upon the value of the coefficient “*a*”, which shows the relationship between the saving ratio *s* and the rate of growth of per capita income $\frac{dy}{y}$. As the previous rates of increase of

per capita income could not be deliberately changed very much, the

strategic factor which can be manipulated through planning is the value of the coefficient " a ". Then the crucial question is how the planners can raise deliberately the value of a . To answer this question fully it will be necessary to examine all the complex of factors which govern saving in an underdeveloped economy. It is not possible to treat this problem at great length in this Paper. However, we may note below a few important factors which are likely to be of crucial importance in governing the value " a " in the initial stages of development of an underdeveloped economy.

- (i) Introduction of new or better varieties of products,
- (ii) Taxing of surpluses which otherwise go in ' unessential ' consumption,
- (iii) Changes in distribution of income which go to increase ' unessential ' consumption, and
- (iv) The policy of public and private corporations in the matter of earning and distributing surpluses.

It will be fairly obvious how these factors would influence the value of " a ".

In terms of our equation the second strategic factor which positively influences the rate of increase of per capita income is the value of " r ", the output-capital ratio. The main factors which govern " r " under given spectrum of techniques are : (i) proportions in which factors are combined, and (ii) the efficiency in the use of capital. About the first factor we have already noted that there is a limit beyond which labour-intensive techniques (even assuming perfectly elastic supplies of different types of labour) cannot be beneficially employed. For, though labour-intensive techniques will raise the value " r ", by decreasing the capital used per unit of output, they would not lead necessarily to higher rates of growth than would be possible under less labour-intensive techniques. This happens because though labour-intensive techniques raise " r ", they are likely to have depressing effect on " s ". Hence the planners in underdeveloped countries can determine the optimum combination of factors by choosing that combination which maximizes the value of the multiple " $s \times r$ ". It should be noted that in actual practice given the technical possibilities in various lines, this would mean maximizing of the various specific " $s \times r$'s". But once this is attempted by the planners, the only other way in which they can raise the value of r is through the second factor, viz. by increasing the efficiency in the use of capital. This can be done by : (i) decreasing unutilization or under-utilization of plant capacity, (ii) decreasing unutilization or under-utilization of land and other natural resources (which can

be considered as national capital) and (iii) more intensive use of land and other capital resources.

In terms of our equation, the rate of growth of per capita income in the previous period has a positive influence upon the rate of growth of the per capita income in the current period through its positive effect upon the saving-income ratio. But past (strictly speaking two-period past) rate of growth of per capita income has also a negative effect upon the current rate of growth of per capita income, through its positive effect upon the rate of growth of population. The magnitude of this effect obviously will depend upon the value of the past rate of growth of per capita income and the value of the coefficient " B ". It would be sheer nonsensical to decrease the previous rates of growth of per capita income so as to decrease the strength of this negative effect, and hence the only strategic factor in this case is the value of the coefficient " B ". Now the important factors on which the value of " B " depends are : (i) the magnitude of the positive effect of the rise in per capita income upon the decrease in death rates and (ii) the positive or negative effect of the rise in per capita income upon the birth rates. Obviously the rise in " B " as a result of decrease in death rates due to the rise in living standards cannot be avoided. In fact, decrease in death rates and rise in the expectation of life are the desirable aims of a socio-economic policy. Hence, the only way by which the negative effect of population growth can be countered is by decreasing the value of " B " (even beyond zero) by seeing that the rise in per capita income makes it possible to decrease birth rates faster than the decrease in death rates resulting from it. For only if birth rates are made to decline faster than death rates the future rate of population growth can be decreased. In this situation obviously where the rise in per capita income begins to impinge upon the birth rate more strongly than it does upon the death rate the value of the coefficient " B " will become negative; and in that case rise in per capita income in the past will have a favourable effect upon the current rise in per capita income.

To summarize, in terms of our simple model, there are three strategic factors which needs to be controlled and manipulated through planning for achieving high rates of growth with economic stability in an underdeveloped economy. These three factors are : (i) The coefficient of the saving-income ratio, (ii) the coefficient denoting the output-capital ratio and (iii) the coefficient relating population growth with living standards.

III

Having examined the strategic factors which needs to be manipulated through planning in an underdeveloped economy, we shall briefly

examine in this section how these strategic factors have been affected in the first decade and half of planning in our country.

First we take up the factor a , which is the coefficient relating saving income ratio to the rate of growth of per capita income. In order to know how " a " has behaved during the first decade of planning we must first note how the marginal saving-income ratio has moved during this period. The Reserve Bank Calculations has given the Aggregate Marginal Saving-Income Ratio as 19.1 for the period of 1953-54 to 1954-55, 14.2 for the period of 1954-55 to 1955-56 and 17.3 for the period of 1956-57 to 1958-59 (first three years of the Second Plan)¹. Dr. Raj points out "The Reserve Bank of India has estimated the overall marginal rate of saving in the economy at between 14 and 19 per cent while the National Council of Applied Economic Research places it at between 20 and 25 per cent."² Also recent estimates made by *the Economic Times*³ with the help of available data show that the domestic marginal propensity to save was 20.0 per cent during the Second Plan and it was only 9.1 per cent during the Third Plan. All these estimates whatever may be their shortcomings, indicate that the marginal saving-income ratio has not risen appreciably during the first decade and a half of our planning. The marginal saving-income ratio might have risen in the early stages of planning as compared to its average value during the pre-plan period. But afterwards it seems to have remained more or less stagnant around 20 per cent or so. Also this small rise in the marginal saving-income ratio has taken place in a period even when we neglect the dismal economic picture of the Third Plan period. This rise occurred during the first decade of planning when the per capita income has risen at the rate of a little less than 2 per cent per year. It is true that the rate of growth of per capita income itself was very low, and therefore it cannot appreciably have the influence of raising the marginal saving-income ratio to a high level; still there must have been other factors also in operation which must have curbed down this influence and made for the very low value of the coefficient a . We have already noted that introduction of new or better varieties of products, non-taxing away of surpluses which otherwise go to unessential consumption, changes in distribution which go to increase 'unessential' consumption and the policy of public and private corporations in the matter of earning and distributing surpluses, are the factors which govern the value of " a ". Each of these factors seem to have played a part in keeping down the value of the marginal saving-income ratio. It is a matter of further study how far each of these

1. *Reserve Bank of India Bulletin*, August 1961, p. 1208.

2. *Oxford Economic Papers*, February 1962, p. 45.

3. *The Economic Times*, 17th December 1967.

factors have kept down the value of the marginal saving-income ratio. However some general observations can be given here.

One important factor which has kept down our saving-income ratio (marginal and average) is the introduction of new and better varieties of products. We have allowed the introduction of new products like rayon, artificial silk, plastics, transistor sets, scooters and many others during the first decade of planning. This step seems to have raised the propensity to consume of the fairly rich classes. And through the 'demonstration effect' it has caused higher levels of consumption all round. Our planners ought to have waited for at least 10 to 15 years for allowing the introduction in the economy of new luxury consumer goods.

Apart from this factor, the other one which also seems to have played an equally significant role is our apathy in taxing away surpluses which go to increase unessential consumption. In fact, it seems that unessential consumption has increased as fast as or even faster than essential consumption during the first decade of planning. M. Kalecki writes: "The result of the inquiry (i. e. inquiry of the consumption of essentials and non-essentials) is rather striking; it appears that necessities constitute only about 55 per cent of the consumer expenditure on goods and services, so that about 45 per cent fall in the category of non-essentials".⁴

The other factor which governs growth is the factor " r ", the marginal output capital ratio. After having achieved an optimum factor combination, the value of r , as noted earlier, can be raised by decreasing unutilization or underutilization of plant capacity, by decreasing unutilization or underutilization of land and other natural resources, or by more efficient use of land and other capital resources. To some extent all these factors seem to have kept the value of r more or less stagnant during the first decade of planning. However, the most important factor which has contributed in keeping down the value of r and which thereby has led to a comparatively slow rate of growth, is the more or less stagnant condition of the productivity of land. It is a well known fact that productivity of land in India is 50 to 100 per cent lower than that in other countries. But still we do not seem to have succeeded in raising our land productivity substantially.

The third important factor in the growth process is the value of B , the relationship between the rate of growth of per capita income and the rate of population growth. It has already been pointed out that it

4. M. Kalecki "Financing the Third Plan," *The Economic Weekly*, July 9, 1960, p. 1122.

should be the endeavour of planners to reduce the value of " *B* " substantially towards zero, so that rise in per capita income does not give rise to any substantial growth of population. However in the first fifteen years of planning the value of " *B* " does not seem to have been reduced; on the contrary, the value seems to have risen during the planning period as compared to the pre-plan period. Thus, during the first decade we had a little more than 2 per cent per annum rise in population while per capita income also rose by about 2 per cent per annum . It means that the rising living standards have impinged much more heavily on the death-rates rather than on the birth-rates.

To summarise, we can say that the three essential factors in the growth process, viz. the saving-income ratio, the productivity of capital and other resources, and the population growth have so behaved in the early stages of our planning as to give rise to very slow rate of growth of per capita income. From this it is very easy to conclude that the obstacles which we are experiencing in our planning process in various forms such as, scarcity of internal resources, rise in prices, balance of payments disequilibrium and foreign exchange shortages, unemployment and under-employment, can be ultimately attributed mainly to three factors, namely, (i) failure to raise the saving-income ratio to the required high level, (ii) failure to raise the productivity of agricultural land and other capital resources, and (iii) failure to decrease the birth-rates substantially so as to reduce the population growth. It can also be pointed out that in future the achievement of high rates of growth crucially depends upon our success in these three fields.

GROWTH — THEORETIC FORMULATIONS AND GROWTH

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Attempts at understanding the nature and problems of economic growth are as old as the subject of economics. Prof. Hicks has compared the relationship between classical economics and present day growth-economics to that between Greek geometry and modern mathematics.¹ For a fairly long period, however, beginning with John Mill, from 1870-1930, the period of neo-classical economics, concern with growth ceased to exist and ideas of a by and large constant national product getting appropriately distributed under certain conditions, became the sole concern of professional economists and socialists.

This view of Mill and his followers lost sanctity because of three important events in history of the world.

1. The establishment of the socialist order in backward Soviet Union was the undoing of the socialist's myth that equal distribution of wealth could see the end of mass poverty.
2. The depression of 1930's broke the economist's myth of automatically functioning price mechanism ensuring the best use of a country's natural and man-made resources.
3. The post-World War II independence of former colonial territories brought forth the urgency of rapid economic development of erstwhile near stagnant economies.

The vision that emerges is that rapid economic development of under-developed economies is essential for removing absolute poverty and bridging the now advancing gap between developed and under-developed economies. Further, the economic growth and appropriate distribution of what is produced has to be ensured by conscious effort, through the agencies specially designed for this purpose.

Two Approaches :

Evolving planning policy pattern for changing the status quo has to be done on the basis of growth analysis. The growth analysis consists of two broad categories :

1. J. R. Hicks, " Growth and Anti-Growth ", *Oxford Economic Papers* ,Vol. 8, November, 1966, p. 261.

(i) The models making approach in which the over all frame-work is taken to be the *ceteris-paribus* and dynamic function is given to the crucial variables. The crucial variables such as the capital-output ratio, the rate of population change, the saving consumption propensities etc. are given forms and shape on the basis of the historical experience of now advanced economies. Since over all frame-work here is considered as the *terra incognita* the policy implication is addressed to relatively manageable problems—of the choice of technology, of relative worth of the different devices of birth control, of alternative methods of financing development projects, etc.

(ii) The second approach does not recognise that institutional or non-strictly economic factors can by and large be neglected as *de-minimus*. It does not believe in the delimitation of economic variables and takes as a starting point for analysis the processes within the *ceteris-paribus* field. The tradition is marked by such names as Adam Smith, Marx, Max Waber and Schumpeter. They have formulated theories of social and institutional transformation as an integral part of the process of economic development. In fact here the economic policy in the narrower sense has to be evolved within the changes in the social and institutional frame-work.

We consider next the important ideas which have evolved from the first approach :

1—(A) *Capital Formation*

The theory of factors of production led to the idea of capital being the missing component. Land being given and labour being abundantly available, capital induction seemed to be the only something to be done. The capital creation required savings. The savings in monetary and real terms were taken to be identical and poor countries were advised to increase their saving rate to 10-12 per cent from 5 per cent of their national incomes. Professor Lewis asserted, "The central problem in the theory of economic growth is to understand the process by which a community is converted from being a 5 per cent to 12 per cent saver."² This was also one of the conditions for take off laid down by Prof. Restow.³ This figure of 12 per cent saving ratio was arrived at for two reasons. One : assuming (a) Desired rate of per capita income increase per annum of 2 per cent, (b) Fixed capital-output ratio of 3:1, (c) Population increase per annum of 2 per cent, the desired rate of income increase could

2. W. A. Lewis : *The Theory of Economic Growth*, pp. 225-6.

3. W. W. Rostow : "The Take-off into Self-sustained Growth". *Economic Journal*, LXIV, March, 1956.

be obtained by a saving rate of 12 per cent per annum. Two : 12 per cent was estimated to be the saving rate of now advanced economies in their periods of take off.

For savings to come into existence in real terms, in economies with very low average per capita income, the concept of disguised unemployment proved quite handy. The distinction was not made between zero marginal product per unit of labour and zero marginal product of a worker. The workers who remain in the villages would thus work more and consume the same amount of food. The workers who move away from the villages would do so at the old consumption standard. The difficulties were all assumed away. It is now increasingly recognised that creating employment for the unemployed in disguise would not only require additional investment in the form of housing and equipment but would also generate extra-consumption out of the newly expanding wage incomes, adding to the total consumption of the community.⁴ In a country like India the social cost created by the extra consumption is very concretely felt in the form of serious pressure on limited food supplies.⁵ Further, creating capital requires skilled man-power and basic tools. In order to avoid these difficulties it is suggested that capital formation (making village roads!) is possible with existing techniques which fortunately are very much labour-intensive. Thus the very problem of shifting labour from a system of low productivity to high productivity is ignored altogether. This mistake has been realised now. The so-called labour-intensive techniques have been shown to require in fact more capital per unit of output than capital-intensive techniques.⁶ And where do we reach, in the course of time, with more and more labour-intensive techniques? We may end up working with bare hands! Professor Maurice Dobb very rightly observed that the same grounds which would justify a high rate of investment, would also justify a high degree of capital-intensity in the choice of investment forms.⁷

1. (B) *The Critical Minimum Effort :*

A small (2%) increase in national income is followed by an equilibrating (2%) increase of population. The increased income does not improve the living standard of the existing population but just results in supporting a larger number of people at the old living standard. In case, however, increase in national income is substantial (4%) the popu-

4. A. K. Sen : *Choice of Techniques*, Chap. 5.

5. H. Myint : *Economics of the Developing Countries*, p. 89.

6. W. B. Reddaway : *The Development of the Indian Economy*, pp. 68-78.

7. Maurice Dobb : *On Economic Theory of Socialism*, p. 14.

lation increase rate cannot be above a certain maximum (3%) because of biological reasons, so that per capita income would increase (by 1%) and so on. If this tendency continues for a certain length of time the economy would grow indefinitely.

The above thesis finds its best expression in Richard R. Nelson's Diagram⁸. He uses two reaction curves of percentage change in income and percentage change in population, with per capita income at the base, to arrive at one stable and the other instable equilibrium. The stable equilibrium point is at a low level of per capita income and the unstable equilibrium point is at a high level of per capita income. If the economy is to move off dead centre then per capita income must reach in one big jump to the right of the 2nd unstable equilibrium point.

H. Myint⁹ criticises the logical basis of this analysis. "The analytical device is borrowed from the trade cycle theory designed to deal with turning points in the level of short-run economic activity in the advanced countries from a state of depression through an upswing phase to a boom and so on."^{9a} We may therefore question how far this type of analysis originally designed to illustrate the gear shifts in short-run economic activity of a fully developed engine of growth in the advanced countries, is useful for the study of the problem of long-term economic development of the under-developed countries which is concerned with the construction of the engine of growth itself."

The remedies suggested on this basis are the 'big push' approach of rapid strides in increase of National Income or pulling down the population curve. The 'big push' is then dismissed as impossible of achievement and all emphasis shifts to pulling down population curve. In order to appear convincing, all kinds of images of horror are created by the Neo-Malthusians. For example, A. J. Coale reports, within 65 centuries exponential growth in a finite environment could generate, "a solid sphere of live bodies expanding with a radial velocity that, neglecting relativity, would equal the velocity of light."¹⁰ Professor M. K. Bennett of Stanford University has given a very apt rebuff to calculations of this type. "This is surely an arithmetical exercise. It is also sterile one. . . . Society may be counted upon to act in such a way that the impeccable arithmetical calculation fails to work out, society has the power to act.

8. Richard R. Nelson : "A Theory of the Low-Level Equilibrium Trap", *American Economic Review*, XLVI, December, 1956.

9. H. Myint ; *op. cit.*, pp. 107-108.

9a. N. K. Kaldor : "Model of the Trade Cycle," *Economic Journal*, March, 1940 referred by H. Myint.

10. A. J. Coale : "Increase in Expectation of Life and Population Growth" Quoted by J. J. Spengler, "The Economist and the Population Question," *American Economic Review*, March, 1966, p. 21.

The arithmetic in itself carries no element of prediction, no element of compulsion.”¹¹ The control of population is important by itself, but no one can accept the Malthusian proposition that economic development is a hopeless task rendered insoluble by the very nature of the human animal. There is nothing to show that just as incomes increase, more population follows. The rapid population increases of the last decade are the result of the application of technical methods of death control rather than increases in income.

Balanced Growth :

The importance of capital creation and the necessity of a certain minimum rate of effort are attempts to look at the development problem from the point of view of increasing supplies. The balanced growth theory approaches the problem from the side of demand.

The beginning of balanced growth theory was made by P. N. Rosenstein-Rodan.¹² He argued for a simultaneous expansion of consumer and capital goods sectors. This theory was extended further by W. A. Lewis and Ragnar Nurkse. They included agriculture also in the balanced growth frame-work.

The investment in one new sector may not be an economic proposition because of lack of demand, if nothing is done simultaneously to increase production and hence incomes in other sectors. The surplus production of other sectors alone, through the process of exchange, can give economic value to the products of the new sector and shift the whole system to a higher level of consumption. Since all the sectors have to make a simultaneous progress, growth of the slowest sector—agriculture—sets a limit to the investment of the whole economy. The structure of agricultural relations being given the surplus in agriculture can be pushed up by two methods. (1) The goods on which farmers are likely to spend money may be increased in supply along with increased supply of capital inputs such as fertilisers so that the peasants have the possibility of producing more and also utilising their increased income for consuming goods, which they wanted to consume before but could not because of low income level. (2) The surplus agricultural produce may be forcibly collected either by manipulating the prices which farmers pay and get or through taxation. This may however discourage the farmers from doing their best like it happened after the Russian Revolution and the total supplies may get reduced.

These methods relying on market forces are of marginal significance. The real thing is to reorganise the structure of agricultural relations so

11. M. K. Bennett : *Population, Food and Economic Progress*, p. 58.

12. P. N. Rosenstein-Rodan: “ Problems of Industrialisation of Eastern and South Eastern Europe ”, *Economic Journal*, 1943.

that social obstacles in the way of introducing new technical methods get removed. Prof. Habakkuk remarks, "In England, the main social obstacles to the introduction of new techniques had been decisively weakened well before the Industrial Revolution. In countries like Germany and Russia...reform of the agrarian social structure was undertaken by the state and pushed through rapidly and with relatively small regard for individual interests which were sacrificed to the aim of increasing efficiency of agriculture."¹³

If anything, a rapid survey of main ideas of the first approach reveals that economic systems in underdeveloped economies are incapable of significant improvement without concomitant structural changes in the socio-political environment in which economic elements operate. In the absence of the rationally organised social frame-work, the capital creation thesis ends up suggesting labour-intensive techniques, the critical minimum effort theory drifts to population control measures and the balanced growth idea turns out to be a plea for agricultural improvement through price incentives. The change of social frame-work is thus an essential precondition for harnessing opportunities which are now being wasted both in men and materials.

Let us now see in which direction the second approach leads ?

2. (A) *The Social Condition :*

The same quantity of land, labour and capital will not turn out the same output of goods and services in all social arrangements and every kind of institutional structure. The non-cost, non-price elements embodied in social environment effect the maximum return from the available resources of any economy. Henry Bruton points out, "The point is not merely that non-economic factors affect the performance of the economy and hence must be included in an analysis of the economics of development, but rather that the production of economic goods takes place within a particular social and institutional environment, all parts of which effect in one way or another, the capacity of the system to turn out goods and services."¹⁴

The values, beliefs and social environment that prevail are not only consistent with non-growth, but have emerged in part as means of easing the hardships imposed by mass poverty. To take a few instances:

1. The extended family system diffuses the responsibility of bringing up the children much more than the nuclear family system. Incentive

13. H. J. Habakkuk : "Historical Experience of Economic Development," in E. A. G. Robinson (editor), *Problems in Economic Development*.

14. Henry J. Bruton : *Principles of Development Economics*, 1965, p. 242.

to work is therefore reduced in proportion as the responsibility of their upbringing is diluted.

2. In agriculture, peasants with idle time are reluctant to engage in output-increasing capital formation simply because all or most of the increment in output accrues to the landlord.

3. The labour supply curve turns back after a modest increase in wage rates since the labour are unacquainted with alternative uses of income.

All this adds up to the glorification of a life of leisure, and labour or hard work is at a discount. But to conclude from this that human beings in underdeveloped countries are species of a very special kind immune to economic motivations is the height of non-reason.

In all the examples taken above breaking up the old attitudes is dependent upon breaking up the old institutions. That this may be done with minimum social disturbance goes without saying but some disturbance is definitely unavoidable. If a new economic model is to emerge the old occupational pattern has to change. If the use of gold ornaments is to stop, the goldsmiths have got to get unemployed for some time and then absorbed in other vocations. The wastage of labour and capital in the big sink of retail trade in India cannot be stopped without considerable but inevitable hardship. There is no running away from the problems and inevitable choices have to be made. Prof. Hicks correctly compliments Marx for his perception, "that the passage from the one state to the other must imply some deep structural changes, changes not only economic but social and political as well."¹⁵

Along with institutional changes propaganda for educating the masses has also an important part to play in changing the valuational pattern; perhaps there is reason to believe that if development efforts were given the widespread propaganda that war efforts are, they would also generate the same national fervour. In India for example in 1962-63 defence expenditure alone was raised by 5 per cent which had been long assumed to be the total tax-paying capacity of a poor nation. Yet there was not a word of protest. The development effort also could be extended very far by a determined people.

2. (B) *The Economic Surplus* :

The problem is not really one of competing claims at all. It is wrong to make calculation of average income and deduce that low income levels leave little margin for saving. Such calculations ignore the fact that there is faulty distribution of income among the various agents of

15. J. R. Hicks : *op. cit.*, p. 263.

society on the basis of their position rather than on the basis of their contribution to production.¹⁶ If the luxury living of the unproductive classes and distortions introduced thereby in the economic system could be stopped, the potential economic surplus would be found to be big enough to sustain development effort of any reasonable magnitude.

The improper functioning of the existing system in India makes Professor Kaldor to lament, "India with one of the lowest incomes per head of population has a high ratio of property income to total income--a ratio that is comparable to that of the country with the highest income per head, the United States."¹⁷ Prof. Baran notes, "This (potential economic surplus) is to be found in more than 25 per cent of India's national income which that poverty-stricken society places at the disposal of unproductive strata. It is visible to the naked eye as the share of agricultural output withdrawn from the direct producers by the land owners in the form of rent and by moneylenders in the form of usury interest. It can be seen in the profit of business, the bulk of which is not plowed back into productive enterprise but spent on consumption by its proprietors."¹⁸

Now converting all this potential economic surplus into actual economic surplus is a heroic task and requires a determined leadership of the highest order. The change will be resisted by the existing vested interests--Landlords, bankers and the like--who would do all to preserve the status quo. When a very simple proposition of introducing a graduated land tax cannot be introduced, to ask for all-round far-reaching changes is in fact to ask for the moon. To quote Kaldor again, "A progressive land tax naturally raises the most fierce resentment in all countries where a land owning class exists and to my knowledge it has not yet been put into practice anywhere... Powerful pressure groups block the way to effective tax reform. Accelerated economic development in all such cases is predominantly a political issue."¹⁹

The inevitable inference from the above is that the problem of poverty cannot be tackled by mere economists. The vision must be broadened; economists must learn their lessons in the company of other social

16. Henry J. Bruton : *Principale of Development Economics*, p. 105.

17. Nikolas Kaldor : "The Role of Taxation in Economic Development", in E. A. G. Robinson (editor), *Problems in Economic Development*, p. 173.

18. Paul Baran : *The Political Economy of Growth*, p. 250.

19. Nikolas Kaldor : *op. cit.*, p. 171. Prof. Kaldor wrote in 1962. Rajasthan, one of the Indian states has introduced graduated Land Tax in the budget of 1967-68. For a detailed analysis of Land Revenue in India, see my : "Abolishing Land Revenue" in the *Mainstream*, dated 25th March, 1967.

scientists belonging to other disciplines such as political science and sociology.

2. (C) *Economics and Economists* :

An elaborate change in the socio-economic cum political structure of the society alone can see the end of poverty. And more than anything else economists and economics must start rebuilding themselves in order to be effective instruments for change. Prof. Ingvar Svennilson writes, "The isolation of economics, tending towards econometrics, from other social sciences that often exists has as far as possible to be broken; even if for obvious reasons a certain degree of specialisation must remain. . . . An integration and an adjustment of 'economic theory' to new research about exogenous factors is strongly needed from a policy point of view. . . . Economists have to confess that their formulation of growth theory has not always been adequate for solving the policy problems of underdeveloped countries. . . . Economists may also be responsible for the fact that the shift of emphasis in development policy from the volume of investment towards various types of social and institutional change has come about so late." ²⁰

We must learn to penetrate behind the facade of simple economic theory and into the forces behind technical change. The attempts to formulate economic notions within the existing social frame-work have an inbuilt tendency to be futile exercises. As Marx wrote, "The economists explain to us the process of production under given conditions; what they do not explain to us, however, is how these conditions themselves are being produced, i. e., the historical movement that brings them into being."²¹ This suggestion for recognising no *Ceteris-Paribus*, except for solving specific problems in an over-all rationally organised society, is not the monopoly of Marx and his tribe. Much earlier, the classical economists referred to functions of state in economic life. They had no qualms of conscience when they argued that economic progress depended upon the removal of out-dated political, social and economic institutions, upon the creation of free competition. Why and how, then, the existing socio-political structure could be sacrosanct for economists, when they can clearly see that it is increasingly becoming a fetter on further progress? To quote Schumpeter, "The rational attitude does not (and need not) stop at the credentials of kings and popes but goes

20. Ingvar Svennilson: "Education Research and other Unidentified factors in Growth", in E. A. G. Robinson (editor), *Problems in Economic Development*, pp. 93-94.

21. Marx: *The Poverty of Philosophy*, p. 86.

on to attack private property and the whole system of bourgeois values."²²

Once there are no inhibitions, and economic growth as a means of ending mass poverty is recognised as an ultimate value, the awe inspiring beauty of geometrical diagrams and algebraic formulae need not confuse and confound judgment, and the course to be chartered for creating the 'India we want' is at once simple and clear.

2. (D) *Changing the Milieu :*

National Income can meaningfully grow as a result of sweat and toil. And for persuading the masses to willingly offer sweat and toil, we must build up their hopes of a prosperous India in a generation's life time. To quote from a very well known document : " If the leaders win the confidence of the country, and prove themselves to be vigorous in eradicating privilege and gross inequalities, they can inspire the masses with an enthusiasm for the progress which carries all before it."²³

Once determined to labour hard and throw away lethargy of the ages the next step would be to postpone consumption of the fruits of labour for a prosperous future. The living standards for the masses need not go down, and even with some positive relief, 15 to 20 per cent of the National Income could easily be the economic surplus to be invested. Hard work and constant consumption possibilities can seem meaningful only in an equalitarian society. We are already committed to democratic socialism. There is need for taking determined steps in this direction. The efforts of trying to build capital through the savings of property owners and their entrepreneurial ability have an inbuilt tendency to the growth of monopolies and economic empires. Mopping up the potential economic surplus has to be done by the state organs. A culture of buying and selling cannot create a socialist cooperative society. The right to use private property and incomes will have to be severely limited.

When the state organs are to accomplish basic social changes, the existing bureaucratic system of administration will definitely be found to be inadequate. A simple document concerned with small practical changes notes: " One of the most serious obstacles that the IADP (Intensive Agricultural District Programme) had to face is the archaic administrative system which obtains in the country. This system based

22. J. A. Schumpeter : *Capitalism, Socialism and Democracy*, Quoted by Paul Baran, *op. cit.*, p. 29.

23. United Nations : *Measures for Economic Development of Underdeveloped Countries*, Para 38, p. 16.

essentially on checks and balances evolved in a different time and for a different purpose has proved woefully inadequate for any operation the aim of which is not to maintain the status quo, but to change it.”²⁴ There is need therefore of subordinating administrative organisation to the democratically created institutions down to the lowest level.

Now accomplishing all this is a mighty adventure and even making a plea of this kind may be beyond the comprehension of those who are used to thinking in grooves, but on doing this depends the fateful result of the great historical chance, “the peaceful transformation of a great country from a state of squalor and oppression to that of rapidly advancing socialist democracy.”

24. Second Evaluation Report on Assessment and Evaluation of the IADP. Quoted by M. L. Dantwala in a review of the report, *Economic and Political Weekly*, June 17, 1967, p. 1081.

SOME REFLECTIONS ON GROWTH MODELS IN UNDER-DEVELOPED ECONOMY

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SUMMARY

The contemporary demand-dominated growth models, especially Harrod-Domar models, are primarily meant for advanced economy where the spectre of demand deficiency haunts the system and capital rather than labour is made to play the decisive role. There is little attempt in identifying alternative growth paths and postulating labour-output ratio as necessary operational apparatus for underdeveloped economy.

The paper attempts to evaluate the Harrodian contention of inelastic labour supply and capital utilisation equilibrium as the basic postulates of economic growth irrespective of the state of economy. It has been found necessary to present labour-oriented growth models in underdeveloped economy for effective utilisation of unused manpower where the elastic labour supply and low capital formation are the major inhibiting factors of growth. In that context the concept of balanced growth has also been dealt with in relation to inflationary transition economy.

THEORIES OF ECONOMIC GROWTH

S. BANERJI

(*Labour Bureau, Calcutta*)

SUMMARY

Economic growth is a multi-dimensional process involving a complex of inter-related and inter-dependent factors. It may, however, be defined as the process whereby the real national income increases over a long period of time. Different economists in different periods emphasised certain factors as responsible for economic growth depending upon the experience of that particular period. The classical economists emphasised the role of capital accumulation and market expansion in the growth process, while the neo-classical economists stressed the importance of the rate of interest and technological advancement. Schumpeter visualised entrepreneurial innovation as the starting point of development. The post-Keynesian economists laid emphasis on the rates of investment and saving as the starting point of development, the rate of which depends on the sizes of the multiplier and the accelerator. It was Karl Marx who developed a general theory of growth recognising effect of socio-cultural changes on the growth process.

SCHUMPETER'S THEORY OF ECONOMIC DEVELOPMENT

J. B. GANGULY

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SUMMARY

Joseph Alois Schumpeter's contributions to the theory of economic development are essentially an analysis of the process of capitalist growth. Like Marx he observed the inherent instability of the capitalist system and also foresaw the ultimate end of capitalism but for entirely opposite reasons. His thinking on the subject was first crystalized in his small book, *The Theory of Economic Development*. It is a brilliant formal analysis of the process of economic growth. His theoretical formulations were, of course, given a much fuller treatment in his later work, *Business Cycles* written in two volumes. Schumpeter has undoubtedly brought new dimensions to the thinking on economic development and cyclical nature of capitalist growth by his famous theory of innovations and their appearance in clusters. The role of the entrepreneur in achieving rapid economic growth cannot be doubted. A country may be endowed with rich natural resources and a large population yet may be economically very poor for want of leaders of business, who can bring about new combinations, and who can flourish only in a favourable socio-cultural *milieu*.

Schumpeter's description of unstable economic growth under capitalism is not original—Marx had already said about this—but his analysis of the causes of economic growth in wave-like fashion is really superb. Going through his works one cannot but feel : here is a man who had some realization of the life force, the *elan vital* for, call it the motive power, of the capitalist evolution. His prediction about the breakdown of capitalism has been even accused of accepting the Marxian theory of economic determinism. But it will be more correct to say that like Marx he also did have the 'Vision' of the secular trend of capitalism and tried to show by analysing the changes in the relevant socio-politico-economic factors why capitalism in accordance with his vision is destined to break down. Schumpeter attaches great importance to the role of 'Vision' in the analysis of secular economic trends.

CONSUMPTION CONTROL & ECONOMIC GROWTH

R. L. GOEL

(*Muzaffarnagar*)

SUMMARY

Practically in every field we have been pondering upon the ways and means by which the rate of growth of underdeveloped countries can be significantly accelerated. It has been a great challenge for the economists and other social scientists of the present generation. Theories and models of economic growth are being constructed and recommended for adoption by the underdeveloped countries. The purpose of this paper is modest. It is neither to lay down a new theory nor to construct a fresh model. It is just to examine the hypothesis that the consumption function of Keynesian origin does not apply to the conditions of underdeveloped countries and that these countries are faced with a rapidly rising consumption as they are proceeding on the path of economic development. It is further to find out whether consumption control can help these countries in curbing the rising consumption and generating more savings in the economy.

ECONOMIC GROWTH — THEORETICAL APPROACHES AND THOUGHTS

I. K. JAIN

(*Calcutta*)

SUMMARY

Economic growth has been the concern of the economists from the very beginning but then the phenomenon of growing dimensions and magnitudes of this subject is of recent origin. Late 18th and early 19th century economists who lived through the 'Industrial Revolution' in Europe were greatly influenced in their thinking by the environment around them and had a lot to say about the process of economic development, but with the completion of this process their interest in the field receded, to be revived only in the 20th century and that too as a consequence of world wars, and the problems of reconstruction arising out of them. International consciousness for the need to improve the lots of underdeveloped economies too has been responsible for the renewed interest in the subject.

The process of economic growth is so complex and factors affecting it so numerous that the countries having passed through it have widely varying experiences of it. Another important fact which need not be overlooked in the study of economic growth is that economic growth has taken place in various countries under such diverse economic, political and social conditions that it is rather difficult to find common threads. The complexities of the process of growth and widely differing growth experiences have resulted in a number of theories but none completely satisfactory and to the point of perfection and of universal applicability capable of explaining the factors responsible for economic growth and behaviour thereof over a period of time.

THEORIES OF BALANCED AND UNBALANCED GROWTH

B. S. KALYANKAR

(*Marathawada University, Aurangabad*)

SUMMARY

This paper attempts a choice of a strategy of development for an underdeveloped country like India. Balanced and unbalanced growth have been discussed as different patterns of development. Balanced growth has been presented in its two aspects, i. e. 'balance in demand' and 'balance in supply'. It has been pointed out that balance in supply approach, instead of 'balance in demand' or 'unbalanced growth' should be adopted by an underdeveloped country. Unless a wide base of social and economic overheads, which balance in supply approach stresses, is made available to an economy, investment in consumer goods industries (balance in demand) is impossible. Stresses and strains, which are likely to arise during the process of development, could be met relatively easily in the case of balance in supply approach rather than in balance in demand and unbalanced growth approaches.

WARRANTED OR FORCED RATE OF GROWTH

D. MAHAPATRA

(*Utkal University, Bhubaneshwar*)

SUMMARY

Post-Keynesian growth models, particularly the ones developed by Harrod and Domar, are based upon assumptions which render them somewhat inappropriate to the underdeveloped economics. These models aim at analysing the forces for a steady, stable rate of growth; whereas the need of the underdeveloped countries is how to initiate the process of growth and push it forward to achieve the potential growth. In such a perspective, therefore, so far as the underdeveloped countries are concerned, there is a rationale for a forced rate of growth rather than a 'neutral', 'stable' or 'warranted' rate of growth. The warranted rate may come to its own after the stage of full-development of the economy has been attained. The growth engineering in the underdeveloped countries may, however, have to face two major constraints hindering the growth process : (i) the general shortage of essential consumer goods, more so of foodgrains and (ii) the scarcity of foreign-exchange resources to buy the essential import requirements for capital investment programmes. In the context of long-run steady rate of growth, the most important single factor is the development of the appropriate motivational environment conducive to generating a continuous stream of technological inventions and innovations.

SOME REFLECTIONS ON THE THEORIES OF ECONOMIC GROWTH

S. B. MEHTA

(*Gujarat College, Ahmedabad*)

SUMMARY

The aim of this paper is to show some limitations of the concepts used in the theories of economic growth, and to refine some of them.

A critique of the capital-output ratio and the savings ratio is given.

In the complex process of economic growth, savings, capital formation, investment and production of consumer, producer and "mixed" goods can be regarded as consecutive stages. Savings mean diversion of money flow from consumption to production, capital formation is the process of increasing the efficiency of factors, investment is the bringing these factors together for production.

To understand the effect of investment on national income, the theories of multiplier, accelerator, and innovation may be synthesized. Their smooth working in underdeveloped countries is hindered by the leakage factors, as shown in an equation.

The working of the three pronged effects of investment is complex. Planning is mainly meant to smoothen this process so as to increase the rate of economic growth.

THEORIES OF ECONOMIC GROWTH

M. H. PATEL

(*Bilimora*)

SUMMARY

Many classicists like Smith, Ricardo, Malthus, Mill, Marx and others, were profoundly concerned with the growth of the economy. In the twentieth century Schumpeter, Harrod, Domar, Hansen, and many others have presented this problem in the form of economic development models. All these economists have placed emphasis on the capital accumulation as the mainspring of economic growth of any nation. They believed that Savings are clearly a prerequisite of investment in Capital Stock, so they gave prominent place to savings in their theories. Economists like Harrod, Domar, Hansen and others gave the theories of development mainly concerned with developed economies. No doubt that these models are applicable to underdeveloped economies too, but such theories may appear less startling. According to Smith and other classicists the economic development is possible only when the technological progress takes place. Malthus believed that the population growth is beneficial to economic development. In many countries, to-day, the population growth is the main hindrance of the economic development. To-day, many economists give much more importance to the capital accumulation and technological growth as the prime mover of the economic development of any nation. It is believed that the Capital Accumulation is the very core of economic development but technological improvement is virtually impossible without prior capital accumulation. Thus, the theories of economic development put emphasis mainly on capital accumulation and then on other factors.

TRADE AND GROWTH — A SURVEY

R. L. PITALE

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SUMMARY

The literature on growth theories is continuously increasing and attempts are being made to study impulses to the accelerated economic growth. The problem has an added significance in the sense that now countries cannot be isolated as new and old. Even when a particular country is backward, it is "growth-conscious" and that makes a vast difference. Innumerable theories of growth have been drawn on specific and heroic assumptions and mathematical precision is achieved. But this mostly results in theorising the whole process without paying much significant attention to the factors existing in reality. This is "like a performance of Hamlet without the Prince of Denmark." In this context an attempt has been made to survey for showing significantly the factors which work in accelerating the process of economic growth. Given economic and social conditions, all attempts should be made to reach the core of the factors which are going to help in stimulating economic growth. This is essential, nay vital, as the significant part of the literature on growth theories is resulting in endless theorizing.

IMPLICATIONS OF SOME LEADING THEORIES OF ECONOMIC GROWTH FOR UNDERDEVELOPED ECONOMIES

BASUDEB SAHOO

(*Kalahandi Science College, Bhawanipatna*)

SUMMARY

Economic progress involves (a) a better allocation of resources on the basis of given supplies of factors and production functions, (b) an increase in factor supplies, and (c) a change in production functions.

The above processes are influenced by forces relating to (i) innovations, (ii) institutions, (iii) international distribution and accessibility to resources and the terms of trade, and (iv) population and its rate of growth.

The operation of these forces takes place under the law of diminishing returns, on the one hand, due to scarce factors with imperfect substitutability among them, and the law of increasing returns, on the other hand, representing growth as a cumulative process.

This may seem to give much too broad an account of the process of economic development. But economists who tries to tie up some of its open ends in one way or another are generally proved wrong. The classical economists were wrong in supposing that the law of diminishing returns would prevail in the long run. Innovations or technological change call for institutional readjustment; but it is wrong to designate any particular set of institutions as essential or unavoidable.

What has been presented then is a convenient file in which to arrange observed facts, while keeping oneself free to recognise differences from one case to another.

THEORIES OF ECONOMIC GROWTH IN THE LIGHT OF THE GROWTH EXPERIENCE OF DEVELOPING COUNTRIES

C. B. PADMANABHAN

(*New Delhi*)

SUMMARY

In explaining economic growth all theories emphasize one or the other of the following factors :

- (1) Savings and accumulation of capital;
- (2) Technological changes;
- (3) Improvement in the skills and efficiency of the population resulting from health improvement or educational development or investment in human resource development in some other form.

When we examine the concept of investment in human resources we at once note that such investment can take a variety of forms. A planner will naturally like to know the interrelationships among these forms and the order of priority to be assigned to them.

Moreover, we are led through the above concept to study the wider social aspects of development. There is, for instance, some relationship between consumption, industrialization and urbanization. The sociological point of view is particularly important in any inquiry into how a break-through is possible in agriculture in underdeveloped countries.

Since theories of economic growth involve corresponding strategies for planning economic development, a changed approach to theories of economic growth is bound to have effect on theories of planning also.

ADAM SMITH'S THEORIES OF ECONOMIC GROWTH

SHARDA PRASAD

(*Bhagalpur University, Bhagalpur*)

SUMMARY

Adam Smith was first among the economists who tried to discuss the causes of the problem of long-run growth or economic development. The writers of the classical schools and later economists were greatly influenced by his writings. His greatest contribution was the concept of *laissez-faire*. A policy of *laissez-faire* was thought to be the best means of promoting economic development. Among the factors promoting economic development, important place was assigned to division of labour, size of the market, accumulation of capital and use of technology. He also emphasised the cumulative nature of the development process. Though he admitted that the development process is cumulative in nature, yet he realised that the development process has certain limits beyond which expansion is not possible. The economy is bound to reach the stationary state ultimately. But he did not prescribe any way out of the situation. He viewed the development of the Capitalist economy of his time as a race between technological progress and population growth. In the beginning technology leads and so long as technological lead is maintained economic development takes place at a faster rate.

THEORY OF ECONOMIC GROWTH

L. N. SINHA

(*University of Bihar, Muzzafarpur*)

SUMMARY

General problems of the theory of economic growth are briefly discussed and a model of economic growth is developed out of the Sraffa system. It is shown how the Standard system moves on a path of steady growth. Choice of technique is discussed in terms of wage-profit equation. A change in technology is also introduced. Neutral technological change is defined in terms of constant factor shares. Mechanism of replacement of capital goods is discussed to show how different heterogenous stocks of capital goods can be treated as homogeneous capital in conditions of equilibrium over a long period.

THEORIES OF ECONOMIC GROWTH

K. SITARAMASWAMI

(*Osmania University, Hyderabad*)

SUMMARY

A broad line between 'developed' and 'underdeveloped' nations can be drawn by measuring the level and rate of productivity. Definitions to date available do not convey any dynamic element. The important economic problem of an underdeveloped country is low levels of productivity. It would never be an over-simplification to regard economic growth as a matter of productivity. There is a positive correlation of high order between the rates of productivity and income. The correlation coefficient between productivity and national income comes out to be 0.955, which is a high amount of perfect positive correlation. The co-relation coefficient between productivity and per capita income works out to be 0.9854 which is even higher. The annual rate of productivity shows the real growth of economy when compared with the volume of output, which is a statistical phenomena.

REPORT ON THE DISCUSSION ON THEORIES OF GROWTH

The discussion on theories of economic growth took place in two parts. At the first session, the discussion centred on the ideas of Smith, J. S. Mill and Marx, and more particularly on the last named writer.

Dr. Subrathesh Ghosh, introducing his paper on the Marxian theory of growth, spoke about the process of capital accumulation. He drew attention to what Marx called primitive capital accumulation as a specific feature of the early stage of capitalist development. This is the phase of the dissociation of the producer from the means of production, particularly the small producer from his means of production, or of the establishment of the specifically capitalist mode of production, over an expanding area of the economy. Dr. Ghosh remarked that this approach assumed that shortage of capital was the critical shortage to overcome in the early phase of capitalist development. In the developing economies, today, Dr. Ghosh contended, this was not always the case. In many of these countries cheap labour was in abundant supply and the main obstacles to economic development lay elsewhere.

Once the capitalist mode of production had firmly established itself, capital accumulation was helped by rising labour productivity resulting from technological improvement. Dr. Ghosh maintained that one of the salient characteristics of Marxian theory was that it took into account technological improvement as a basic feature of capitalist development.

Dr. Ghosh's thesis was criticised by several speakers. Mr. A. Das from Calcutta argued that the dispossession of small producers could only begin after a certain amount of capital had already been accumulated. Thus, the problem of explaining the existence and the source of this pre-existing stock of capital still remained. Mr. Das made another interesting point. Dr. Ghosh had said that Marx paid attention to the central fact of technological progress and the consequent rise in labour productivity. But this conflicts with another part of Marx's theory viz. his law of the falling tendency of the rate of profit, which is integral to the Marxist theory of capitalist crisis. The supposed tendency of profit to fall is derived from the assumption that the ratio between surplus value and variable capital (S/V) remains constant while the organic composition of capital, or the ratio between constant and variable capital, rises. But the rise in the organic composition of capital, wages remaining at the subsistence level, would imply that labour productivity rises less rapidly in the production of the means of production than it would in the produc-

tion of wage-goods. If labour productivity rises so rapidly in the production of wage-goods, it is not reasonable to assume S/V to remain constant.

Dr. Gautam Mathur pointed out that Marx's law of the tendency of the rate of profit to fall might be interpreted to mean broadly that if the share of wages in the national income rather than the absolute level of wages remained constant and if the stock of capital relatively to wages rose at the same time the rate of profit would decline. When the question was raised as to whether long-term movements in the capital-output ratio and the share of wages in output warranted the assumption that the value of the stock of capital relatively to wages had a tendency to rise in the real world, Dr. Mathur replied that he was only speaking in terms of hypothetical models.

Dr. Brahmanand said that Marx developed a theoretical apparatus which was of value irrespective of whether his predictions were true. Basically what Marx was trying to do was to present an analysis of production of commodities by commodities in such manner that a commodity residue emerged out of this process. Capital was nothing other than this commodity residue. Sraffa has illuminated this aspect of Marx's analysis.

Mr. B. P. Singh from Sindhri stressed that profit arose not only from the exploitation of labour by the capitalist, but also from the exploitation of consumers by producers. Mrs. R. Chaudhuri from Benares University pointed out that Marx did not pay attention to the possibility and methods of mobilising surplus agricultural labour for capital formation. Mr. R. K. Amin thought that Marx's theory was guilty of over-generalisation from the limited experience of capitalist development in England in the early nineteenth century. Mr. Padmanabhan pointed out that transfer of resources or wealth from the labourers to the capitalists might not suffice to bring about growth. It was further stressed by other speakers that to think of growth in terms of capital as the key variable or capital accumulation as the main process was likely to be misleading, that it was equally important to enquire into the causes of technological change or changes in production functions if growth was to be fully understood. The key question is not : how does capital accumulation take place ? but how does man's power over nature increase ?

At the session, Mr. L. N. Sinha from the University of Bihar, Mr. B. S. Kalyankar from Marathwada University, Mr. A. Das from Calcutta and Mr. D. N. Gurtoo from Pilani presented their papers. Mr. Gurtoo's was an unscheduled paper.

Mr. Sinha used Sraffa's terms to show that under certain assumptions it is possible for technical changes to be accompanied by a rise in the standard ratio while wages and profits remained constant. Dr. Brahma-

nand objected on the ground that the composition of wages would also change under the circumstances and Mr. Sinha's statement about the constancy of wages might be misleading. Mr. Sinha replied that even if the composition of wages changed, one could still speak of an unchanged relative share of wages in the net product. Dr. Gautam Mathur pointed out that the word "wages" was used in a specific sense in the Sraffa system and a possible confusion should be carefully avoided. Mr. Kalyan-
kar spoke of unbalanced growth, stressing particularly the importance of investment in economic and social overheads leading the way. Some speakers spoke of the need to deliberately create tensions, for example by allowing industrialization to run ahead of agricultural development, in order to hasten growth. Dr. Gautam Mathur argued that the purpose of a rationally conceived plan should be to eliminate unbalances rather than to create them. Mr. Subrahmanyam pointed out that when we spoke of balanced growth we should specify the period over which balance was intended to be achieved. Mrs. S. Chaterji stressed the importance of achieving regional balance. Mr. Pendharkar said that if we started with a balanced plan we often ended up with unbalance, so we should be careful of deliberately producing a plan for unbalanced growth.

Dr. Bhatt stressed that the main question was one of creating a sufficient motivation for growth in countries where this motivation was often weak. One could speak of unbalanced growth with a view to motivating the government or the private sector to grow sufficiently rapidly. In this connection, Dr. Bhatt also spoke of the need to develop an apparatus of economic analysis to tackle dynamic problems as distinct from static analysis.

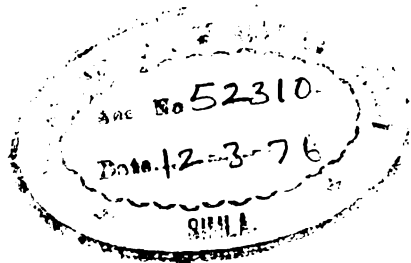
Mr. Das argued that capital invested in the effort to control population was capital taken away from alternative uses and that it might be better to try directly to increase the stock of capital rather than to reduce the size of population.

Mr. Dandekar pointed out that Mr. Das assumed that with control of population the rate of capital accumulation would be reduced in comparison with what it would be otherwise, and he thought that Mr. Das's thesis was as weak as this particular assumption. Dr. Brahmanand pointed out that even families living at the so-called subsistence level might start saving with a decrease in the size of the family. Other speakers pointed out that a lower rate of growth of population might mean a reduction in the rate of growth of the demand for cereals, housing, etc., and a correspondingly higher demand for education for children, for example. This might be desirable from the point of view of economic growth.

Mr. Das said in reply that a relatively large amount of investment of funds might be needed to reduce the rate of population growth, even by half of one per cent and it might take a long time before even this could be achieved.

Mr. Gurtoo presented certain ideas of Wicksell on Growth. To Wicksell the basic problem was how to maintain and improve living standards in the face of growing pressure of population on limited natural resources which tended to result in diminishing returns. The problems could only be overcome through accumulation of capital and technological improvement. The individual tended to discount future incomes at an unduly high rate. From the point of view of social welfare a higher rate of savings and accumulation would be called for than would be achieved under a system of individual preferences.

A number of speakers stressed the importance of fostering technological progress and overcoming the social obstacles to such progress. It was felt by many that models of growth so much in vogue now-a-days often yielded very few useful results and were poor instruments for helping along accelerated economic growth. They afforded scope for intellectual gymnastics and scholastic disputations out of all proportion to their practical usefulness.





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