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Growth, Distribution and Motivation in LDCs

by Wolfgang Arnold, Cologne*

Economic growth leads, according to Kuznets, at first to glaring income disparities and only when a certain state of development has been reached to a levelling of incomes. Translating this thesis to the developing countries, one would have to assume that there exists a constant conflict of objectives between an equitable income distribution and increased economic growth. The author examines various alternative explanations of the personal distribution of income to answer the question how the distribution objective can be attained and what effect certain measures of distribution policy have on growth.

In 1955 Kuznets¹ propounded the thesis that the income distribution in countries with a very low average per-capita income was at first relatively egalitarian, that in the course of economic growth a differentiation process was then initiated which resulted in inordinately gross income disparities, and that it was only from a certain state of development onwards that a levelling process took place. At that time Kuznets was not yet able to provide adequate empirical evidence in support of his thesis. In the meantime however a number of empirical studies have been presented, especially by Kravis² (1960), Oshima³ (1962), Kuznets⁴ (1963), Adelman-Morris⁵ (1973) and Paukert⁶ (1973), which seem to confirm the existence of a connection as stated by Kuznets.

If Kuznets' thesis is interpreted as an immutable historic law of development, this would imply that one has to presume the existence in the case of the developing countries of an actual insoluble conflict between the objectives of accelerating economic growth and a relatively egalitarian distribution of incomes⁷. The consequence of this for development

policy would be that the developing countries would have to forgo economic growth for the sake of a relatively egalitarian distribution or to abandon the distribution objective in the interest of the growth objective.

Two Objections

If Kuznets' thesis and its historical interpretation is subjected to a critical analysis, there are two objections above all which can be formulated: Most of the mentioned empirical studies which seem to bear out Kuznets' thesis rest on cross-section analyses; they thus assume implicitly that the development in every country follows the same course in regard to the level of growth and the distribution structure. There are however a number of developing countries, such as Taiwan, Sri Lanka, Costa Rica, Tanzania and Colombia for instance, in which the income distribution has – at least temporarily – improved with progressing growth⁸. Moreover, there is no reason why a certain uniformity of the development of economic

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¹ S. Kuznets: Economic Growth and Income Inequality, in: *The American Economic Review*, Vol. XLV, 1955, p.1-28.

² I. B. Kravis: International Differences in the Distribution of Income, in: *The Review of Economics and Statistics*, Vol. XLII, Supplement: August 1960, p.408-416.

³ H. T. Oshima: The International Comparison of Size Distribution of Family Incomes with Special Reference to Asia, in: *The Review of Economics and Statistics*, Vol. XLIV, 1962, p.439-445.

⁴ S. Kuznets: Quantitative Aspects of the Economic Growth of Nations: Distribution of Income by Size, in: *Economic Development and Cultural Change*, Vol. XI, 1963, p.1-80.

⁵ I. Adelman, C. T. Morris: *Economic Growth and Social Equity in Developing Countries*, Stanford 1973.

⁶ F. Paukert: Income Distribution at Different Levels of Development: A Survey of Evidence, in: *International Labour Review*, Vol. 108, 1973, p.97-125.

⁷ This position is taken by I. Adelman for instance. She says with reference to her own empirical studies: "These results imply that, for a lengthy portion of the process of economic development, there is a conflict between the growth of overall national income and an increase in the welfare of the poor. Equally important, there is an analogous conflict with respect to policy instruments for systematic intervention". I. Adelman: *Development Economics – A Reassessment of Goals*, in: *The American Economic Review*, Vol. 65, 1975, p.303.

⁸ Cf. H. Chenery: Introduction, in: *Redistribution with Growth*, Oxford 1974, p. XV. Cf., e. g., also A. Berry: *Changing Income Distribution under Development: Columbia*, in: *The Review of Income and Wealth*, Series 20, 1974, p.289-316.

and social indicators observed in the past should necessarily be assumed to apply likewise to the future.

Kuznets' assertion that the disparity of incomes increases in the first phase of the growth process for instance can be explained in the case of the present developing countries by pointing out that in the practice of development policy attention focused hitherto almost entirely on the achievement of the growth objective which was largely in line with the development concepts of the industrialized Western nations, and that the social discrepancies were caused or aggravated by this specific policy. Conceivably special measures of distribution policy could create in the developing countries conditions which impinge on events in the sphere of economic growth and income distribution in such a way that the differences between incomes are flattened or at least further differentiation is countered and these same measures do not impair growth but possibly even advance it.

Opportunities for Redistribution of Incomes

Starting from this position, one has to ask what can be done to realize the distribution objective. Besides, the effects of certain measures of distribution policy on economic growth have to be assessed.

There are fundamentally two ways of changing the income distribution:

- The political authorities can tackle the determinants of income distribution in the production process: they can thus try to influence the decisive factors for primary distribution so as to achieve the desired equalization;
- The state has the possibility of effecting a redistribution through taxes and transfer payments in the framework of its revenue and expenditure policy and of thus correcting the income distribution retrospectively.

The discussion on distribution policy concentrated for a long time almost entirely on the second of these alternatives. Its redistributive effectiveness must however be doubted, especially since Föhl's criticism

of progressive taxation. Föhl's criticism is essentially that the intended redistribution is in great measure thwarted by tax shifting processes and the efficiency of such fiscal devices is therefore low⁹.

A sceptical view of revenue and expenditure measures is especially justified in view of the specific situation in the developing countries. The scope for taxation and transfer income payments is narrowly limited in these countries, and their market structure would presumably make it even more difficult to prevent tax shifting processes than in the industrialized countries.

In view of these arguments against retrospective action on distribution it seems advisable to examine the determinants of primary distribution for a solution of the problem. It is best to focus on theories which offer an immediate explanation for the personal income distribution because they alone are socially relevant¹⁰.

The Ability Thesis

What was probably the first attempt at an explanation of the personal income distribution was undertaken by Galton¹¹. Taking Quetelet's observation that the distribution of certain physical characteristics among human beings is in line with a Gaussian normal distribution as his starting point, Galton claimed that the human abilities are also normally scattered around a mean and that there exists a linear dependence between the distribution of abilities and that of incomes. Hence the income distribution was also normal. Later empirical investigations, starting with Pareto's well-known studies on personal distribution, indicated however that the distribution curve postulated by Galton did not match the facts. In reality incomes are not positioned symmetrically around a mean but they are scattered asymmetrically, showing a marked positive skewness. Galton's thesis that the income distribution is determined by the distribution of abilities was nevertheless the point of departure for many of the explanations attempted later.

The dominant hypothesis aside from the ability thesis is the explanation by stochastic processes offered in particular by Champernowne¹², Gibrat¹³,

⁹ C. Föhl: Kritik der progressiven Einkommensbesteuerung (Critique of progressive income taxation), in: Finanzarchiv, N. F., Vol. 14, 1953/54, p.88-109; cf. also by the same author: Das Steuerparadoxon (The tax paradox), in: Finanzarchiv, N. F., Vol. 17, 1956/57, p.1-37.

¹⁰ There seems little point in dealing with the theories of functional distribution, more especially because of the blatant income differences within the group of wage and profit recipients in the developing countries and the high degree of cross-sectional distribution. Other kinds of distribution, such as the regional or sectoral distribution, are also only an inadequate approximation to the personal distribution.

¹¹ F. Galton: Hereditary Genius, London 1869.

¹² D. G. Champernowne: A Model of Income Distribution, in: Economic Journal, Vol. 63, 1952, p.318-351; cf. also by the same author: The Distribution of Income between Persons, London 1973.

¹³ R. Gibrat: Les inégalités économiques (The economic inequalities), Paris 1931.

Friedman¹⁴, Rutherford¹⁵ and Mandelbrot¹⁶ in their studies which are based on the Paretian or the normal logarithmic distribution. A fault common to all these stochastic attempts at an explanation is their lack of empirical content. Empirically established deviations from the supposed distribution can always be explained *ad hoc* by the claim that the – incomputable – chance is a co-determinant of distribution. Besides, these theories offer no criteria for distributive measures because chance is by definition not susceptible to the exertion of influence.

The ability thesis was developed further mainly by Rhodes¹⁷, Roy¹⁸, Lydall¹⁹, Chiswick and Becker²⁰, and Tinbergen²¹. Rhodes and Roy do not however define the concept of ability in such a way that their statement could be refuted in principle. Lydall's theory suffers from the crucial shortcoming that his explanation relates only to part of the distribution curve and his approach can therefore only solve part of the problem. Tinbergen's demand-supply theory and the human capital theory to be ascribed mainly to Becker and Chiswick seem to be more suitable for explanatory purposes. Both these theories employ concepts of ability which are operationable.

The Human Capital Theory

The human capital theory rests on the perspective of a connection between the distribution of investments in education and the distribution of earned incomes. The instrumental paradigm is the conventional theory of capital including Joel Dean's capital model in particular. The profit maximization assumption in Dean's model is replaced by an income maximization assumption. Individuals will accordingly invest in education up to the level at which the economic benefit or income reaches its maximum. It is assumed furthermore that every individual similar to the entrepreneur, is faced with a specific conjuncture of supply and demand in the capital market for educational investments, with the result that the individual supply and demand conditions for education

capital determine the size of a person's investment in education.

As in accordance with the specific definition of the demand curve the rates of return from investment in education are known and the income from work depends by virtue of the so-called earnings equation upon the size of the investment and the rates of return, it is possible to determine the size of the investment and income simultaneously with the help of the model. The distribution of earned incomes as well as the distribution of the investments in education are on these premises determined by the supply and demand conditions facing the individuals in the market for education capital.

The crucial shortcoming of this theory for the solution of the problem is the fact that the premises in regard to the course of the individuals' supply and demand curves are not precise enough to allow the deduction from the theory of a specific connection between the distribution of investments in education and the distribution of earned incomes. Given the assumed premises a falling (or rising) inequality of investments can go hand in hand with an increasing, declining or constant inequality of earned incomes²².

If the political authorities wish to influence the income distribution through a change of the distribution of the investments in education, the theory therefore provides them with no indication of the consequences of their action. This is a surprising result, mainly because it is often asserted with reference to the human capital theory that levelling of education can lessen the inequality of incomes.

In support of this position one will in fact have to rely more on econometric investigations carried out in connection with the human capital theory²³. It was

¹⁴ M. Friedman: Choice, Chance and the Distribution of Income, in: The Journal of Political Economy, Vol. 61, 1953, p.277-290.

¹⁵ R. S. G. Rutherford: Income Distribution, A New Model, in: *Econometrica*, Vol. 23, 1955, p.277-294.

¹⁶ B. Mandelbrot: The Pareto-Lévy Law and the Distribution of Income, in: *International Economic Review*, Vol. 1, 1960, p.79-106.

¹⁷ E. C. Rhodes: The Pareto Distribution of Income, in: *Economica*, Vol. XI, 1944, p.1-11.

¹⁸ A. D. Roy: The Distribution of Earnings and Individual Output, in: *Economic Journal*, Vol. LX, 1950, p.489-505.

¹⁹ H. F. Lydall: The Distribution of Employment Incomes, in: *Econometrica*, Vol. 27, 1959, p.110-115; and by the same author: The Structure of Earnings, *ibid.*, p.127ff.

²⁰ G. S. Becker, B. R. Chiswick: The Economics of Education, Education and the Distribution of Earnings, in: *The American Economic Review, Papers and Proceedings*, Vol. LVI, 1966, p.358-369; G. S. Becker: *Human Capital and the Personal Distribution of Income: An Analytical Approach*, Ann Arbor 1967.

²¹ J. Tinbergen: On the Theory of Income Distribution, in: *Weltwirtschaftliches Archiv*, Vol. 77, 1956, p.155-175; by the same author: A Positive and a Normative Theory of Income Distribution, in: *The Review of Income and Wealth*, Series 16, 1970, p.221-234; by the same author: *Income Distribution, Analysis and Policies*, Amsterdam-Oxford 1975.

²² On this and other shortcomings of the human capital theory cf. W. Arnold: *Personelle Einkommensverteilung in Entwicklungsländern. Eine entwicklungspolitisch orientierte Analyse personeller Verteilungstheorien* (Personal income distribution in developing countries. A development policy-oriented analysis of personal distribution theories), Tübingen-Basle 1979.

²³ Cf., amongst others, G. S. Becker, B. R. Chiswick: *op. cit.*, p.365ff; J. Mincer: The Distribution of Labor Income, in: *The Journal of Economic Literature*, Vol. VIII, 1970, p.1ff; by the same author: *Schooling, Experience, and Earnings*, New York 1974, p.43ff.

thought that the existence of a close positive connection between a person's educational level and the size of his earned income could be proved with the aid of these studies. A narrowing of the differences in education was therefore thought to lead of necessity to a reduction of the income differences. Other studies show however that the lengthening of the average time spent on education which normally attends the lessening of differences in education involves increased income differences²⁴.

Reder²⁵ offers for this phenomenon the explanation that the lessening of differences in education aimed at equalizing incomes led to a simultaneous relative scarcity of innate abilities and for this reason gave considerable income advantages to the more gifted. Another criticism which may be made is that almost all empirical and econometric studies relate to developed countries and therefore fail to take into account the fact that in the developing countries persons with an academic education often fail to find employment while there is frequently a high surplus demand for personnel whose training period was much shorter; the latter therefore earn high incomes.

The Demand-Supply Theory

Tinbergen's demand-supply approach, in contrast to the human capital theory, follows up the perspective that the distribution of earned incomes does not depend solely on factors of labour supply, i. e. the distribution of investments on education, but is at the same time also determined by the structure of the demand for labour. Tinbergen predicates that the labour market is not a uniform market in which services can be treated as homogeneous or in their entirety mutually exchangeable but consists of a large number of separate compartments. The criterion for distinctions between the individual compartments is the intensity or degree of the supply or demand for certain attributes or qualities.

The employers as a body specify a frequency distribution of the required abilities: they present a demand for certain amounts of labour in the various compartments of the labour market. On the supply side of the labour market on the other hand there are a large

number of individuals with certain abilities; all these together show a certain frequency distribution of available qualities. If the frequency distributions of the required and available qualities coincide, production can, according to Tinbergen, be organized in such a way that every individual occupies an occupational position commensurate with his abilities.

It must be assumed however that the two distributions differ in reality so that a permanent element of tension with the well-known phenomena of excess supply or demand is a characteristic feature of the labour market and its sub-markets. In order to bring about a migration of labour and thus a harmonization of the two frequency distributions the employers must offer income incentives, i. e. they must pay higher wages in the labour market compartments in which the demand for labour exceeds the supply. Differences between earned incomes thus result in the model from *ex ante* imbalances in the various sub-markets. The wider the frequency distributions of available and required qualities diverge, the greater will be the degree of inequality between earned incomes. If they coincide, the result will be an egalitarian distribution of earned incomes.

"Amount of Schooling"

For a long time Tinbergen's theory was largely ignored. The main reason for this was that the concept of quality was at first left undefined. In later econometric studies Tinbergen, following up suppositions of the human capital theory, made use of education as measured by the "amount of schooling" as a quality indicator²⁶. The degree of inequality of the earned incomes depends in this case upon the degree of divergence of the educational distribution on offer from that in demand. The political authorities interested in flattening the income distribution must accordingly use production and education measures to bring the two distributions into harmony.

The econometric tests of this theory by Tinbergen²⁷ may be regarded as perfectly satisfactory under statistical aspects. Tinbergen has arrived at relatively high determination coefficients. The question is however to what extent econometric investigations can

²⁴ Cf., e. g., B. R. Chiswick: Earnings Inequality and Economic Development, in: Quarterly Journal of Economics, Vol. 85, 1971, p.21-39; B. R. Chiswick, J. Mincer: Time-Series Changes in Personal Income Inequality in the United States from 1939, with Projections to 1985, in: Journal of Political Economy, Vol. 80, 1972, p.34-66.

²⁵ M. W. Reder: A Partial Survey of the Theory of Income Size Distribution, in: L. Solow (ed.): Six Papers on the Size Distribution of Wealth and Income, New York-London 1969, p.226.

²⁶ Cf. J. Tinbergen: Can Income Inequality be Reduced Further?, in: H. J. Niedereichholz (ed.): Festschrift für Walter Georg Waffenschmidt, Meisenheim am Glan 1972, p. 165 ff; by the same author: The Impact of Education on Income Distribution, in: The Review of Income and Wealth, Series 18, 1972, p.255-265. In more recent studies Tinbergen has extended the range of quality indicators. Cf. by the same author: Income Distribution: Second Thoughts, in: The Economist 125, No. 3, 1977, p.315-339.

²⁷ Cf. J. Tinbergen: Can Income Inequality be Reduced Further?, op. cit.; by the same author: The Impact of Education on Income Distribution, op. cit.

be used at all in support of hypotheses and theories, i. e. whether a successful statistical or econometric test can be regarded as providing empirical confirmation for the theory.

The main objection to taking this position is that confutative instances are obscured, or interpreted as "normal abnormalities" and consequently accepted, because of the inference theory at the basis of econometrics. Besides, econometric tests, including those mentioned here, are usually arranged in such a manner as to provide confirmation, "verification" of preconceived opinions and not their refutation. In concrete terms, the tests are not carried out against a background of alternative and competing theories but the econometric structural equation presupposes certain theoretical dependences including for instance the dependence of the income distribution on the demand and supply distribution in the present case. Insofar as this is true one can hardly describe Tinbergen's hypothesis as an empirically confirmed theory.

Moreover, as in the case of the tests applied to the human capital theory, the empirical studies are open to the objection that they all relate to developed countries and do not take the specific conditions of developing countries into account. It is somewhat difficult to imagine that the labour market in the developing countries is as "perfect" as Tinbergen's theory presupposes. One need only think of the lack of labour mobility and the greatly reduced market transparency compared with the industrialized countries. Besides, the confinement of the investigations to school education neglects the component of vocational training which is certainly of great importance for incomes, a serious shortcoming in the developing countries where typically the school system is inadequate and instruction outside the schools, and especially on-the-job training, is of crucial importance for the development of the ability potential of the individual.

The Achievement Motivation Thesis

Both the human capital theory and the demand-supply theory have a close connection with thoughts which have their origin in the theory of growth. This is especially striking in the case of the human capital theory which derived directly from the at first one-sidedly growth-oriented education economics. This aspect suggests a reference to considerations developed by McClelland²⁸ in the framework of the achievement motivation thesis.

McClelland presented the hypothesis, going back to Weber²⁹ and Tawney³⁰, that periods of economic ascent and descent in history are always preceded by epoch-making psychological changes in achievement motivation: the high achievement motivation of a society is the decisive cause of economic growth. Crucial is according to this view that persons with a high achievement motive possess the typical attributes of successful entrepreneurs and managers and that successful entrepreneurial activities bring about economic growth. McClelland was able to support his growth hypothesis by empirical tests. An increase of achievement motivation was seen to be followed by an increase of economic growth.

The translation of the achievement motivation thesis – similar to that applied to the human capital theory by its adherents – to the area of income distribution leads to the hypothesis that a decline (increase) of the inequality of achievement motivation intensity results in a decline (increase) of the inequality of income distribution. This hypothesis is based on the supposition that persons of high achievement motivation act in an entrepreneurial spirit (in the widest sense), that they are, for instance, interested in doing something better, take an activist forward-looking view of future prospects or tend to assess their occupational and economic opportunities with cautious optimism and will therefore achieve high incomes whereas persons of a lower achievement motivation, who do not possess these qualities or possess them only to a smaller degree, will receive lower incomes.

The distribution hypothesis evolved on the basis of the achievement motivation theory seems to be superior to the human capital theory and also to Tinbergen's theory, chiefly because the concept of achievement motivation allows the component of on-the-job training which is probably highly relevant to incomes, to be taken into account³¹. This is so because it may be assumed in view of the specific behaviour syndrome of highly motivated persons that people with a strong urge for achievement will make greater use of opportunities for advanced vocational training and for

²⁸ D. C. McClelland: *The Achieving Society*, Princeton (N.J.) 1961.

²⁹ M. Weber: *Die protestantische Ethik und der Geist des Kapitalismus* (The protestant ethics and the spirit of capitalism), reprint from Max Weber: *Gesammelte Aufsätze zur Religionssoziologie I*, Tübingen 1934.

³⁰ R. H. Tawney: *Religion and the Rise of Capitalism*, London 1926.

³¹ Cf. also the attempts by the adherents of the human capital theory to deal with this income component by using age group statistics. Cf. espec. J. Mincer: *Schooling, Experience, and Earnings*, op. cit.

this reason have better promotion and income opportunities. Success at school and duration of school education have also been shown by empirical studies to depend decisively on the degree of achievement motivation³².

That this is a fruitful hypothesis is illustrated by the fact that training courses for adults to increase their achievement motivation in the Indian region of Andhra Pradesh led to noticeable economic gains, i. e. improved incomes, for those who attended them³³. The hypothesis can, moreover, be extended with the aid of the Atkinson model³⁴ which assigns to the opportunity structure a crucial role in motivation effectuation and thus conforms to Tinbergen's thesis of the additional influence of labour demand factors on distribution. To do so may be advisable in view of the specific situation in the developing countries. Other motives such as the desire for power and affiliation which have also been found to act as income determinants can be included in the analysis.

Growth Aspects

No matter whether the human capital theory, the demand-supply theory or the thesis of achievement motivation offer a better explanation of the income distribution and are thus more suitable for application to distribution policy, our reflections show that measures based on these theories will not – at least not immediately – result in an impairment of growth. The close connection of these theories with the theory of growth and other considerations of relevance to a growth policy suggest on the contrary that such measures, insofar as their *direct* effects are concerned, have a positive influence on economic growth.

Possible *indirect* effects ensuing from the changed distribution must however also be taken into consideration. Economists under the influence of the classical and Keynesian schools maintain that an egalitarian or relatively egalitarian income distribution is detrimental to growth in the developing countries. The majority of the people in the developing countries subsist, so they say, on a level close to the physical minimum, so that their incomes enter fully into consumption. The number of people capable of saving

part of their income was relatively small. If their incomes were in the course of a levelling process reduced to a point near the general average, most of them would cease to be savers while the average income would rise by so small a margin that this savings shortfall could not be compensated for. A more egalitarian income distribution resulted therefore in a smaller savings rate, and the investment ratio would decline at the same time. A sufficient capital accumulation was however of crucial importance for the achievement of an adequate growth rate of the national product. Besides, a more egalitarian income distribution inevitably leading to increased consumer demand would result in larger consumer goods imports as the level of production in the developing countries is so low. This would be at the expense of the urgently needed imports of capital goods.

As against this line of argument it has however to be pointed out that the upper class in the developing countries often use the bulk of their income for purposes of consumption and not for investment. Schumpeter already remarked that the assumption that an unequalitarian income distribution automatically increases the investment propensity was an uncritical idealization and generalization of what had been observed in a particular historical situation. The consumer demand of the wealthy people is, it must also be noted, largely concentrated on goods of a higher standard which have to be imported. Consequently a levelling of incomes will probably merely change the composition of the consumer goods imports but not necessarily impose an extra burden on the balance of payments. A more egalitarian income distribution makes for uniformity of consumption structures, with the possible result of increased demand for mass consumption goods imparting impulses to production and bringing economies of scale into play.

Although it seems hardly possible and is not intended here to give a final answer, our reflections lead to the view that there is no convincing case for a development policy with a one-sided growth orientation. Cross-section analyses of the kind mentioned at the beginning do not warrant the abandonment of distribution objectives and measures in the developing countries. There seems to exist the possibility of achieving advances in growth and distribution at the same time and thus to approach more closely to the fundamental aim of development policy: to raise the standard of living of the whole population.

³² Cf., e. g., D. C. McClelland: *Erziehung zur Tüchtigkeit* (Education for efficiency), in: W. Edelstein, D. Hopf (eds.): *Bedingungen des Bildungsprozesses*, Stuttgart 1973, p.40-59.

³³ Cf. D. C. McClelland, D. G. Winter: *Motivating Economic Achievement*, New York-London 1969.

³⁴ Cf. J. W. Atkinson: *Motivational determinants of risk-taking behavior*, in: *Psychological Review*, Vol. 64, 1957, p.359-372.