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JEAN MARCHAL

AND

BERNARD DUCROS

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The Conference was held in the beautiful setting of the Hotel Igiea on the outskirts of Palermo. We shall remember both the long views from its terrace and the helpfulness of its staff. But a Conference depends for its success on its programme, its papers, and its discussions. The Officers of the Association would wish to express their great gratitude for what was unquestionably a most interesting and stimulating conference to Professor Jean Marchal, who was the architect of the programme and the chief editor of this volume, to all the authors of the papers, to the participants in the vigorous discussions, and not least to Professor Bernard Ducros, who has managed to convey to a reader so much of the substance of all that was said.

LIST OF PARTICIPANTS

Professor Armen A. Alchian, University of California, Los Angeles, U.S.A.
Professor D. A. Allackverdyan, Association of Soviet Economic Scientific Institutions, Moscow, U.S.S.R.
Professor H. Brochier, University of Grenoble, France
Professor M. Bronfenbrenner, Carnegie Institute of Technology, Pittsburg, U.S.A.
Dr. A. Bruzek, Prague, Czechoslovakia.
Professor M. Negreponti Delivanis, University of Salonika, Greece.
Professor D. Delivanis, University of Salonika, Greece.
Professor B. Ducros, Faculté de Droit and de Sciences Économiques, Dijon, France.
Professor M. Falise, Centre de Recherches Économiques et de Gestion, Lille, France.
Professor L. Fauvel, Secretary-General of IEA, Faculté de Droit, University of Paris, France.
Mr. C. H. Feinstein, Department of Applied Economics, Cambridge, U.K.
Professor C. Föhl, Freie Universität, Berlin, Germany.
Professor E. Gannagé, Beirut, Lebanon.
Professor R. Gendarme, Faculté de Droit, University of Nancy, France.
Professor B. Haley, Stanford University, U.S.A.
Professor E. James, Faculté de Droit, University of Paris, France.
Dr. A. Jeck, University of Munich, Germany.
Dr. Karl Jungenfelt, Industrial Institute for Economic and Social Research, Stockholm, Sweden.
Professor W. Krelle, Institut für Gesellschafts- und Wirtschaftswissenschaften der Universität Bonn, Germany.
Professor J. Lecaillon, Faculté de Droit et des Sciences Économiques, University of Lille, France.
Professor E. Lipinski, University of Warsaw, Poland.
Professor André Marchal, Faculté de Droit, University of Paris, France.
Professor Jean Marchal, Faculté de Droit, University of Paris, France.
Professor G. Mirabella, University of Palermo, Sicily.
Professor K. Ohkawa, Hitotsubashi University, Tokyo, Japan.
Dr. P. N. C. Okigbo, Cabinet Office, Lagos, Nigeria.
Professor Ostrovitianob, Association of Soviet Economic Scientific Institutions, Moscow, U.S.S.R.
Professor G. U. Papi, University of Rome, Italy.
Dr. Luigi Pasinetti, King's College, Cambridge, U.K.

Professor D. Patinkin, The Eliezer Kaplan School of Economics and Social Sciences, The Hebrew University, Jerusalem, Israel.
Professor A. I. Petrov, Association of Soviet Economic Scientific Institutions, Moscow.
Professor E. H. Phelps Brown, London School of Economics, U.K.
Professor E. Preiser, University of Munich, Germany.
Professor P. Nørregaard Rasmussen, Institute of Economics, University of Copenhagen, Denmark.
Professor M. W. Reder, Stanford University, California, U.S.A.
Professor E. A. G. Robinson, University of Cambridge, U.K.
Professor E. Schneider, Kiel University, Germany.
Professor R. M. Solow, Massachusetts Institute of Technology, Cambridge, Mass., U.S.A.
Dr. N. V. Sovani, Gokhale Institute of Politics and Economics, Poona, India.
Professor R. C. Tress, University of Bristol, U.K.
Dr. L. Urban, Prague, Czechoslovakia.
Dr. Julia Zala, Hungarian Central Statistical Office, Budapest, Hungary.

INTRODUCTION

BY

JEAN MARCHAL
University of Paris
Chairman of Programme Committee

AND

BERNARD DUCROS
University of Paris
Rapporteur

UNDER the aegis of the International Economic Association some forty economists met at Palermo in September 1964 to study income distribution. The debates proved to be stimulating for those who were privileged to participate. The purposes of such a Conference, however, are not completely fulfilled until its proceedings have been made available to all in printed form. We take pleasure, therefore, in introducing the reader to the twenty-seven papers submitted to the Conference together with the summary record of the debates. Discussions were extensive and lively. If our own experience is to be trusted, those days of working in pleasant surroundings in a close-knit community were valuable as well as enjoyable.

The Conference began by looking at the factual evidence in capitalist, socialist, and newly developing countries. Theoretical models of income distribution were then dissected and, finally, policies came in for examination. It was clear that there were conflicting ideas on theoretical, methodological, and doctrinal grounds as soon as the facts were produced for interpretation. Soviet, Polish, Czech, and Hungarian economists present gave opportunity for an interesting investigation into the ways in which the social product was allocated in socialist countries. Russian colleagues put the stress on the basic differences in the process and results of distribution in socialist and capitalist economies. Dr. Bruzek, Dr. Urban, and Dr. Juliet Zala studied income distribution in Czechoslovakia and Hungary. Frank and highly informative, their papers and remarks brought out how centrally-planned economies were trying, for the sake of economic efficiency, to reintroduce market mechanisms in the allocation and rewarding of the factors of production. Although the participants were reminded of the fundamental differences,

these papers showed how socialist and capitalist economic systems were tending to converge.

The study of income distribution in developing countries gave the opportunity to compare the established theory of distribution with a theory in the making. Professor Sovani, in discussing Professor Gannagé's paper, emphasized that data on distribution in developing countries were still scarce, unreliable, and difficult to interpret in the usual theoretical terms. Professor Maria Negreponti Delivanis, Professor Gendarme, and Professor André Marchal were all strongly in favour of a revision of established theory to accommodate the special features relating to the social structures and development level in such economies. A number of English-speaking colleagues maintained, on the other hand, that the apparatus of pure theory was comprehensive enough to deal with all situations.

When it came to market economies, the determination of the distributive shares for labour and capital, considered as central to the theory by most American, British and German economists present, gave abundant opportunity for comparing neo-classical and post-Keynesian theory. If one assumes that income distribution is the intermediate stage between production and income generation, on the one hand, and spending or allocating distributed income to consumption and saving, on the other hand, income distribution can be approached either through production or through effective demand. This would seem to be the basic difference between the neo-marginalist, supply-orientated theory and the post-Keynesian, demand-orientated theory of distribution.

The former approach was brilliantly set forth in several papers. In a paper whose original purpose was to meet the objection against marginal productivity analysis in its usual version — the use of a cardinal measure of utility for inter-personal comparisons, by ordinally measuring utility instead — Professor Reder showed with much inventiveness how marginal productivity could explain the differentiation of labour income as a function of personal abilities, of the cost and social utility of training as valued by market mechanisms.

But how total income was distributed between labour and property remained the central theme of the marginal productivity analysts. In presenting a version based on the Cobb–Douglas functions, Professor Bronfenbrenner made it clear that the neo-classical theory explained income distribution by the process of

production — the combination of inputs reduced to the two factors, capital and labour — and not in terms of the way in which income was spent and re-formed as an aggregate. Income distribution was macro-economic since its object was to determine relative shares in total income, but the determining of the shares resulted from the combination of factors within the firm by a profit-maximizing entrepreneur and thus the analysis is entirely based on micro-economics.

Production functions were therefore a fundamental consideration: for a given technology, the reward of a factor would depend on the marginal productivity of its inputs and on the extent to which the quantity of this factor employed relative to the other factor varies in accordance with a change in its relative price. In the case of a relative increase in the use of one factor, one can expect this to be accompanied by a relative decrease in its reward per unit and conversely — always assuming the production function to be unchanged — that a relative increase in its reward will mean its use diminishing in proportion. With a given technology, an increase in the wage rate above the marginal productivity of labour would result in a decrease in entrepreneurs' demand for labour, assuming that they could substitute capital for labour in the combinations of factors.

Do they, however, behave in this way and can they substitute one factor for the other, at any rate in the long run? At this crucial moment of the reasoning the Cobb–Douglas type of production function comes in. In making a drastic simplification and assuming the elasticity of substitution between labour and capital to be unity, Cobb and Douglas have given a new life to the marginal productivity theory which had been held up for so long by conceptual difficulties of how to impute increase in product between several factors. Econometrical verifications have shown the elasticity of substitution to be near unity in the long run. The stability of distributive shares of labour and capital in the data used for these verifications implies that, if the employment of one factor changes proportionately to the other, its reward per unit shall change in the reverse proportion relatively to the other, so that its relative share in distribution (the quantity employed multiplied by its relative unit price) shall remain unchanged. For given production functions, capital and labour may be combined in different proportions according to changes in their relative prices; conversely the ratio of their rewards per unit may change as a result of variations in the

amount of accumulated capital in proportion to the labour force but relative shares of labour and capital will not change.

Technology itself is allowed to change. If technical progress remains neutral, say in Hicks' sense — if it results in an increase at the same rate of both capital and labour productivity — the level of product and factors' productivities will rise. Distributive shares will become larger in absolute amounts, but relative shares will remain unchanged. Thus marginal productivity theory far from being a short-run explanation can be considered as explaining the growth of factors of incomes as the outcome of long-run changes in supply and demand of factors and technology.

The theory can make allowance for technological change. It can be dynamic. But does it escape equally from the objection of being generalized micro-economics rather than being macro-economics proper? There has been, over the last twenty years, a great deal of discussion over the conceptual meaning of an aggregative production function and the difficulties of deriving it from the micro-functions for individual firms. Nevertheless the most decisive debate seems to us to be not in aggregating micro-functions, but in the underlying assumption that one can do without a direct determination of the various classes of incomes as aggregates. Let us admit that in a market economy factors' incomes are distributed within the firm as a result of the combination of factors by the entrepreneur. But does it follow that macro-distribution is nothing but the summing-up of intra-firm income distribution? We are not so sure.

A first ground for doubt — on which our English-speaking colleagues at the Conference seemed to agree in principle but were not ready to put much weight — was that the generalization of micro-economic production functions is based on the assumption that the conditions of production for the representative firm in a given branch or sector extend to the whole economy. In reasoning, for instance, on the share of hired labour it is difficult to admit that the conditions of reward in agriculture or in public administration do not fundamentally differ from those in manufacturing.

There are more general grounds for objection. To state that functional income distribution is entirely a matter of production functions — of the profit-maximizing activity of the entrepreneur and the way he adjusts capital intensity according to the market price ratio of capital and labour inputs — is to assume a definite pattern of relationship between causes and effects in economic

theory. It is to assume that distribution is the direct outcome of production and also that, the profit share being determined by the entrepreneurs' profit-maximizing, the share of investment in the national product, as well as other aggregates, will be consequently determined.

Here was the main bone of contention between the neo-classicists and the post-Keynesians whose views were no less brilliantly set forth at the Conference. For the Kaldorians the causality runs the other way round. They start from effective demand and consider the income generating effect of investment expenditure and the part played by investment in promoting growth through increased capacity of production. The post-Keynesian authors do not consider profit as the entrepreneur's maximized individual income, but as the aggregate outcome of investment activity. Therefore, in order to explain distributive shares, instead of looking at the relationship between inputs of capital and labour in the firm's outlays, they rather turn to the overall capital-product relationship.

Investment thus jointly explains growth and distribution. For a given capital-product ratio, a constant ratio of the increase in production capacity (measured as a rate of investment in the product) to the rate of increase of the product, the rate of investment which will allow for balanced growth with permanent full employment of available factors — the Harrodian 'natural' growth — cannot be determined without bringing into the reasoning the investment-saving relationship. Clearly one needs to know what current savings will be at different alternative levels of investment. One is thus led to consider propensity to save, or rather the propensities to save of two different groups, since in our capitalist system capital accumulation by entrepreneurs (and the income inequality which goes with it) implies a systematic differentiation between capitalists and workers. Because of this process of income differentiation — which is related to the way effective demand is generated and not to the distinction between two sorts of inputs in production — the conditions of stability in the process of growth remain a problem which cannot be solved until one has determined how aggregate income, created by the multiplier effect of spending for increasing production capacity, has been distributed between the two groups. As Dr. Pasinetti pointed out, a theory of balanced growth needs the profit and the wage shares as weights of the propensities to save of the capitalists and the workers. Otherwise the overall propensity to save would remain indeterminate.

If the propensities to save are assumed to be stable and the capital-output ratio constant, according to the Kaldorian model the profit share must vary in the same way as the share of investment in the national product. 'Bowley's law' stating the constancy of the relative shares is turned into a long-run condition of equilibrium for balanced growth since the constancy of the profit share is implied in the constancy of the investment rate. The implications of Bowley's law are not the same as in the Cobb-Douglas version of the neo-classical theory. The constancy of the distributive shares is a condition of stable growth and, for given propensities to save, the same state of equilibrium will persist as long as the capital-output ratio keeps constant, whereas, for given production functions, the neo-classical theory would make this state of equilibrium depend on the flexibility of the relationship between capital and labour — that is, on a high elasticity of substitution between factors.

Which of the two competing theories, neo-marginalist or post-Keynesian, is to be preferred ? It seems to us that our debates have thrown much light on this issue, firstly by demonstrating how necessary it was to combine both theories and secondly by showing that they nevertheless remain contradictory.

Attempts at reconciling them were made at the Conference. At the beginning of Professor Solow's paper the reader will find an interesting comparison of the two models, the one characterized as an analysis of the distribution of an homogeneous product between two factors, the other as an analysis of distribution in a two-sector economy where factors remain undifferentiated. The outcome of the comparison is that a satisfactory model ought to be both a two-factor and a two-sector model. The two-sector analysis, however, is brought into the neo-classical, two-factor model only as a step towards a generalized equilibrium '*à la* Walras' where the fixing of the rewards for a number n of factors calls for the simultaneous determination of the prices for n goods.

In the special case of two factors, capital and labour, being combined to produce, in two sectors, consumer's goods and capital goods, it ought to be possible to determine simultaneously, in a non-contradictory way, the conditions of the capitalists' and the workers' rewards, approaching the problem both from the side of demand and relative prices of the two-factor inputs, and also from that of demand and relative prices of the two products. For instance, in factor proportions one could use more capital ; in sector proportions one could produce more capital goods. But does not the one

imply the other? Conversely, an improved remuneration for capital relative to labour could come from capital as a factor being relatively more demanded. But this would mean as well an increased demand for capital goods, resulting in an increase in their relative price. There is surely a pattern of interdependence between the factoral and the sectoral sides and each of the two models remains incomplete in neglecting this sort of interdependence.

If, however, the model proposed by Professor Solow could be called a generalized model in the sense of retaining both the factoral and the sectoral sides in the relationship of interdependence, this had been made possible only by extending the scope of the micro-economic approach. The two-sector analysis had been devised in the same micro-economic terms as the two-factor analysis, and Professor Solow, in the discussion of his paper, was led to state that the limit case of his model was the two-factor *cum* one-product situation — and not one-factor *cum* two-product — a situation where marginal productivity was the only relevant analysis. Thus his model was a generalization of the micro-economic approach, not a reconciliation of the two approaches.

In the course of the debates Professor Reder significantly raised the question of what would come from extending the reasoning to a third factor and a third product. The third distributive share would be univocally determined only in so far as income recipients could be univocally broken up into three homogeneous groups. The breaking up might, however, lead to different conflicting results depending on whether one classified groups according to factor specificity or homogeneity of sectoral products and propensities to buy products. Professor Reder raised this objection on logical and mathematical grounds. We would like to explore its implications *in concreto*. Assuming, plausibly enough, the third factor to be land, the third sector would be agriculture. The distributive share of the third group, farmers, would depend on whether land was more or less intensely used relative to the two other factors and also on what the demand for farm products was relative to the two other sectors' products.

Under these assumptions it is most likely that the third distributive share would be equivocally determined. As a factor's reward it would be the landowners' share in income, land rents. From the sectoral point of view it would be the reward of farmers *lato sensu*, i.e. people engaged in producing farm products. Even in functional distribution these are two different classes of income. Assuming

for simplicity's sake that there is no self-employment in agriculture so that people are rewarded either as landowners, or farm labourers, or farmers *stricto sensu*, i.e. entrepreneurs combining rented land and hired labour with their own capital for profit, there is still a major theoretical difficulty.

Having retained three factors and correspondingly three classes of income recipients: workers, capitalists, and landowners, for determining income distribution between the three groups according to the sector from which their income is generated, we have to consider three specific propensities to spend: a propensity to buy consumer's goods produced by the corresponding industrial sector; a propensity to save or to buy investment goods produced by the other sector of manufacturing activities (since for an equilibrium value of the distributive shares savings are equal to the amount of investment made by capitalists); finally, a propensity to buy (or, rather, to consume) products from the third sector, farm products. It might happen that workers, capitalists, and landowners have different propensities to buy manufactured consumer's goods and different propensities to save (and therefore, residually different propensities to buy food products) so that a three-group model is neither under- nor over-determined. The three-group model, however, is most likely to be over-determined, short of assuming personal distribution to be just the same as functional distribution. For instance, wage-earners in the agricultural sector might have a higher propensity to save than wage-earners in manufacturing industries, but one that was very near to that of farmers; conversely, landowners might have roughly the same propensity to consume farm products as farmers and other capitalists, whereas wage-earners might have roughly the same, irrespective of whether they are employed in manufacturing or farming activities.

In passing thus to principles of income differentiation — one relating to factors on the supply side and one relating to products on the demand side — homogeneous classes of incomes would tend to be defined in two contradictory ways in a three-group analysis.

One obvious way to escape the contradiction between the two approaches is to give up one of them. If one's interest lies in studying functional distribution of primary income; if one sees no objection to breaking up all observed personal incomes before redistribution to factor incomes by imputing either a labour or a capital income to self-employed and small entrepreneurs; if one is convinced that the laws of distribution are nothing but another way of stating the laws

of production, i.e. allocating highly substitutable factor resources between alternative aims; if changes in the structure of the labour force such as an increasing number of wage-earners relative to self-employed and small entrepreneurs really do nothing but conceal the basic fact that the ratio of the real wage rate to the product per head changes as does marginal productivity of labour as a consequence of technological progress, so that once the bias due to structural changes on the observed distributive share of hired labour has been removed the wage-earners' share is proved to be determined by technological factors alone; if this, and only this, is the purpose of the theory of distribution then the way out of the contradiction must be by giving up sectoral analysis.

For the purely factoral approach there would then be only gains and no losses in retaining its original bi-partite analysis: on one side labour incomes grouped around the big, hard core of industrial wages; on the other, all non-labour incomes, no matter whether they can be called profit or not, since they have the common character of deriving from the ownership of material means of production. There are many grounds for objecting to income imputation as was pointed out by the senior author of this introduction in the debates, but its logic could not be questioned within the limits of a purely factoral analysis. Very often imputing an income alternately to labour and to capital will lead to conflicting results because in activities where self-employment is found labour and capital are combined in such a way as to make their joint productivity abnormally low; but in such cases, if income imputation is considered valid, our opinion is that an income at market rate should be imputed to labour, leaving the reward of capital as the abnormally low residual income rather than the reverse. We would agree with Professor Tress's comment that, from a social point of view, in the case of self-employed people such as shopkeepers and small farmers, the reward of the individual's labour is sacrificed to the aim of maintaining the family's inherited assets. If, however, there is to be income imputation, it is better to impute a market wage rate to labour corresponding to a rate that exists in activities where it can be regarded as determined by marginal productivity; by showing the return on capital to be not enough for maximizing profit, it is implied that resources are not efficiently allocated in such activities. Self-employed people ought to behave as profit-maximizing entrepreneurs or give up self-employment and become wage-earners, all social implications of this being left aside.

Perhaps we have given an extreme account of our neo-classical colleagues' views. If so, this is implicitly a tribute to the sharpness of their analysis and to the uncompromising sincerity with which they argued in favour of their vision of income distribution. If, however, factoral analysis is contradictory to sectoral analysis, there is good ground for opting for the latter.

The same is true, in a way, of the Kaldorian model of distribution, since the consideration of effective demand and different group propensities to save relate to personal, not functional distribution. Starting from investment as an aggregate, the reasoning on the input side is limited to capital as production capacity and labour as level of employment. By assuming — and not demonstrating, the neo-classicists would object — a long-run full employment, and by assuming a constant capital-output ratio — an assumption which seems to tally with statistical observations — the taking into account of conditions of production is elegantly if drastically simplified. Analysis is centred on the determination of the profit share rather than the wage share ; for given equilibrium rate of investment and capital-output ratio, the latter being the reciprocal of the average rate of capital overall productivity (or, rather, the reciprocal of the average rate of the overall joint productivity of factors related to capital alone) the volume of investment as a share of total output is determined ; the determination of the share of profits in total income follows in its wake, leaving the determination of the wage share as a residual.

A bi-partite, if sectoral, analysis could be sufficient for determining the equilibrium rate of investment with full employment growth, since to know the overall amount of saving induced by alternative distributions of income between labour and capital one needs to know the propensities to save of both the wage-earners and the capitalists. The post-Keynesian school would not reject *a priori* the suggestion that a three-sector analysis would be preferable, but only in so far as saving behaviours are proved to be such as to justify the consideration of three different savings functions. Aggregate investment, however, remains the only factor of causality. The risk of loss of rigour and of clarity incurred in shifting from a two- to a three-sector analysis might well outweigh the advantage of such contingent improvement for the post-Keynesian theory.

The post-Keynesian theory has the great advantage of giving an account of the relationship between growth and income distribution, but in doing so it tends to neglect other implications of personal

distribution. Income distribution is included in effective demand analysis on the ground that investment is not only inducing growth of real product through capital accumulation but also aggregate monetary income through a multiplier effect. Nevertheless we wonder whether it is possible to make distribution depend on capital accumulation alone, short of a Marxist interpretation of it — and to make anything depend on exogenous investment contrary to the corresponding Marxist analysis. Surely there were some grounds for the objection made by Kaldor's neo-marginalist colleagues that Kaldor's model dealt with the effects of income distribution rather than its causes. One cannot limit the impact of group behaviours on distribution to the results of alternative choices between consumption and saving. The conditions of equilibrium for distribution are not just a qualification of the saving-investment relationship.

Where are the causes? The alternative neo-marginalist model gives only a hypothetical account of causes. The explanation which it offers is plausible only in so far as one believes in the validity of applying the generalization of the representative firm analysis to the entire economy. Our opinion is that this process of generalizing is objectionable, not only on empirical grounds but also for its implicit contradictions. One has to assume production by large capitalist corporations, but without this implying that market conditions are not close to perfect competition; to assume manufacturing as the representative sector but without this resulting in trade-union organization of labour; to assume no lagging sectors nor any advance of service activities, whereas both phenomena are conducive to either perpetuating old forms or the rise of new forms of self-employment activity; last but not least, to assume the existence of a social pattern in which the state would have no part to play in redistributing income or in modifying the basic conditions of primary income distribution through its varied policies.

Should then the conclusions after confronting these two great alternative theories of distribution so brilliantly presented at the Conference by our English-speaking colleagues be entirely negative? They ought to be complementary but they finally prove to be impossible to reconcile. An eclectic approach is still possible, as Professor Krelle's paper showed; in his income distribution model a highly complex pattern of econometric relationship made it possible to consider coherently capital as both production capacity in the macro-economic fashion and as one of the factors of production in the micro-economic fashion. But no matter how interesting this sort