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Murray Brown, Kazuo Sato and Paul Zarembka (eds.), *Essays in Modern Capital Theory*, North-Holland Publishing Company, Amsterdam/New York, Oxford, 1976. Pp. 275. Dfl. 90,-

International literature is not characterised by many 'Great Debates' nowadays. In the sixties things were different. A prosperous economic development probably supported the reliability of economic theory. In this climate it was possible for many economists to occupy themselves with pure theory rather than with applied economics. One of the 'blessings' of this time is the well-known 'reswitching debate.' Cambridge England, represented by such celebrities as Joan Robinson and Luigi Pasinetti, and Cambridge Massachusetts, commanded by Paul Samuelson and Robert Solow, put up a vigorous fight against each others views. After an interim period, used by people such as Geoff Harcourt to do some historiography, a second generation of economists, supported by the celebrities mentioned above, have risen to study so-called post-reswitching problems.

*Essays in Modern Capital Theory* contains the proceedings of a conference from the post-reswitching era. The character of this period can be traced briefly as follows.

In the sixties the consensus has emerged, that capital cannot be treated as a single aggregate that plays the dual role of a financial and physical entity at the same time. That is the reason why many capital theorists have proceeded to examine models that deal with multisector and multicommodity worlds. In the beginning of the seventies these worlds were - following the preparatory work of Von Neumann and Sraffa - formalized in the form of (linear) reproduction models. In this respect: one should mention Hicks *Capital and Time* (1973), Morishima *Marx's Economics* (1973), Van Schaik *Reproduction and Fixed Capital* (1973, 1976), Pasinetti *Lezioni di teoria della produzione* (1975), Abraham-Frois and Berrebi *Theorie de la Valeur, des Prix et de l'Accumulation* (1976) and Lowe *The Path of Economic Growth* (1976). The formal framework of the reproduction model can be used for various purposes. We mention the reconstructing of verbal reasonings in order to clarify their contents and to test their consistency, the generalising of issues raised during the reswitching debate and the building out of the theory of intertemporal general equilibrium. Usually such

exercises are carried out in the field of defining, and comparing steady states. Many of these studies make clear that capital theory tries to convince us of the logical necessity to think in the methodological framework of a multicommodity world, where reproducible capital is the link between the past and the future via the present.

*Essays in Modern Capital Theory* contains ten articles in this field. In the first, Paul Samuelson summarizes the main issues in the reswitching debate, and the role he played in it. Pierangelo Garegnani, in his essay, defends comparative static analysis to study the permanent effects of an economic change. Next, Mario Nuti, examines the Fisherian intertemporal general equilibrium model. The essay by John Eatwell and Edward Nell is a critique of Nuti. They assert that the Fisherian general equilibrium model is not exempt from Cambridgean criticism, contrary to what Nuti states.

Underlying all three following papers (part two of the book) is the notion that capital has to assume concrete forms as capital goods when it is put into production processes. Paul Zarembka starts this part of the book by discussing the aggregation conditions required to obtain multifactor, multisector and neoclassical production functions. He concludes that, in order for capital goods to be aggregated, they must share a common input-output structure in producing them, as well as a common depreciation ratio in use. In his article Edwin Burmeister derives the necessary and sufficient condition for the economy to be regular under fairly general conditions, including joint production and non-differentiability of the technology set.

The importance of duality between quantity relations and cost relations nowadays is well recognized in economic theory. In his essay, David Cass goes further by establishing conjugate duality in the intertemporal framework of Malinvaud.

The third part of the book contains three papers that present new approaches in the field of capital theory. C. J. Bliss demonstrates the existence of a temporary equilibrium in a general equilibrium model. C. C. von Weizsacker proposes an intertemporal coefficient of substitution derived from the efficiency condition of the equality of the interest rate and the social rate of return on investment. In the final paper of the volume, Michio Morishima re-examines the Marxian model within the Von Neumann framework.

*Essays in Modern Capital Theory* demonstrates that - despite its (mathematical) beauty, it is a pity that the operational content of modern capital theory is rather meagre. It is not enough to repeat continuously, by means of the neoclassical theory of the choice of techniques, that capital aggregation is theoretically unsound. Neither is it enough to repeat endlessly that both Ricardo and

Marx are to be praised for their concern with the distribution of income between social classes.

In modern capitalist economies problems of long-term disequilibrium announce themselves. In providing the building-stones of general multisector dynamic models for studying these problems, capital theory has an important task. In this respect a great part of (post-)reswitching problems may be viewed as determined on the historical time axis of the course of events rather than by the future time axis of the economy.

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