

sulted in the direction of national differences in management structure within large companies predicted by the Chandler hypothesis? (2) Where the economic environment is such as to generate cost-reduction possibilities which are economies external to the individual units of a company, have the social and cultural forces at work within individual countries been sufficiently strong to transform the profit-maximizing company structure from the one indicated by American experience to another—either more or less centralized? Regrettably, no systematic effort was made at the conference to explore such questions.

In the opinion of this reviewer, the more interesting papers are those of Chandler, of Yamamura and Patrick (on Japan), and of Wilkins (on nineteenth-century American multinationals). The bibliography on German entrepreneurship in Schmitt's paper is also noteworthy. Unfortunately, the treatment of Soviet enterprises is of little interest.

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THE MATHEMATICAL REVOLUTION IN SOVIET ECONOMICS. By
Alfred Zauberman. London: Oxford University Press, 1975. xiv, 62 pp. \$9.00.

A decade ago, the American Economic Association and the Royal Economic Society sponsored a three-volume survey of economic theory; this fine monograph is in that tradition for Soviet mathematical economics. It reviews developments beginning with Kantorovich, compares them to British and Hungarian work, and synthesizes major findings and their impact on Soviet planning.

Mathematical methods suitable for planning include a variety of techniques. Kantorovich's optimization technique was a beginning: this maximizes a goal (such as output) subject to constraints (such as resources), and one variant is linear programming. A second technique extends maximization into time: this maximizes a goal over a period of years or continuously, one variant being Pontriagin's control theory. These techniques and others clearly extend traditional Soviet planning methods ("the method of material balances"), both in theory and in practice.

Zauberman argues that mathematical economics has influenced the theory of Soviet planning more than its practice. Using mathematical methods, planners could introduce time as a factor of production, maximize multiple goals, and consider trade-offs; they could simulate expected outcomes for several policies and choose among variants. Some of these have been introduced in heuristic fashion, but most have not. The necessary complement to the introduction of mathematical techniques is the computer; Zauberman characterizes the change as a "jump from '5 fingers plus abacus' into the electronic era." Only the computer can cope with the mountains of data and the millions of computations. This critical requirement severely limits the applicability of mathematical economics to the realities of planning.

But the author believes that mathematical economics creates an ongoing revolution, a cognitive revolution, opening communication between Soviet and other scholars. It brings fresh viewpoints to outdated planners, because it introduces rational choice and scarcity prices (shadow or corporeal) into a system which had neither. All these are documented carefully by the author, especially from the journal *Ekonomika i matematicheskie metody*.

A caveat must be extended to the potential reader. The book is introduced as intended for the "non-specialist reader," but one suspects the author underestimates his own considerable erudition in this field, for he assumes much knowledge on the reader's part, for example, a comfortable familiarity with the work of Laplace and Leontief. The book is truly a review and synthesis and by no means an introduction.

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LA PLANIFICATION DES PRIX EN ÉCONOMIE SOCIALISTE: ESSAI MÉTHODOLOGIQUE. By *Mahmoud Abdel-Fadil*. Preface by *Henri Bartoli*. Series "Sciences Économiques," 3. Publications de l'Université de Paris I, Panthéon Sorbonne. Paris: Presses Universitaires de France, 1975. 296 pp. Paper.

Mahmoud Abdel-Fadil considers his inquiry into the problems of planning prices for a socialist economy to be essentially concerned with the methodology of such problems. Yet it is the more fundamental issue—that of the significance of the labor theory of value, specifically Marx's theory for this economy—that reveals itself as his central concern.

In the author's conception, for the type of economy under investigation, two versions of the labor-value theory must be distinguished, with a different kind of price corresponding to each. One notion of price is that yielded by the dual in an optimization procedure; the other is an "exchange price" associated with the sphere of exchange and commodity circulation that survives under socialism. The author contends, however, that ultimately the conditions of production—current and in the growth process—have to be "translated" into the socially necessary expenditure of labor: a proposition which is defensible when the overall costs under optimum are to be appraised from the specific angle.

How then does this system of ideas fit into the Marxian framework? On the one hand (as the author emphasizes), Marx's theory nowhere asserts the equality of exchange price and the labor-value content; his theory insists only that prices are derived from value. The "tendency for the metamorphosis of the value under the conditions of socialism is not a distortion of the labor-value theory but its extension where the level of production forces is greatly developed" (p. 254).

On the other hand, Dr. Abdel-Fadil rightly notes that the original concept of value is construed in Marx without considering either the limitation of resources or goals pursued (optimality criteria). This raises the question: could a price based on a theory that abstracts from both the aspect of scarcities and the objectives, be of relevance for a society which steers its economy with the use of the price instruments? It is logical that, as far as planning is concerned, contemporary economic thought in socialist countries adopts, as its theoretical foundation, the modern mathematical-optimization constructs rather than the labor-theory of value. (At this stage, the concerns are the gradually discovered limitations of the "state of art" rather than the former's philosophy—a crucial point, which cannot be dealt with here.)

In his preface, Professor Henri Bartoli remarks that, although based on Marxist theory, the book is, in fact, neo-Cambridge in spirit. He considers "une incitation au dialogue" to be its major merit, and I fully agree with this state-