

administrative, economic, and cultural problems of the interaction of the three activities.

The basic thesis of the book is that although Soviet science, technology, and design depend heavily on borrowing from the West, they are not without distinct national characteristics which, in their own way, illuminate some of the vital components of the Soviet political system, social arrangements, and cultural values. Although Hutchings devotes most attention to the economic features of science, technology, and design, he shows a particular sensitivity for the problems of historical and sociological significance. He offers an abundance of illuminating information on the historical uniqueness of the disharmonious development of Russian science and technology. On the sociological level, he throws important light on the interaction of the science-technology-design complex with the other basic institutional complexes and vital sectors of cultural activities. The insights on the relationship of science to ideology, of technology to economic considerations, and of design to aesthetics are particularly interesting and meaningful. All three are related to the abstract ideas of philosophical nature and all are profoundly affected by the national propensity for uniform solutions of basic problems.

Hutchings concludes that the gap between Soviet and Western technology is wider than the gap between Western and Soviet science and that, because of the Soviet policy of placing more emphasis on science than on technology, the comparative gap between science and technology has been growing at a continuous pace. He also shows that the scientific institutions have shown much more organizational flexibility than industrial plants as the institutional centers of technology.

The book is the product of an extensive study of relevant literature, interviews with strategically placed specialists, and careful observations during visits to the USSR. Its base could have been widened by a more general discussion of the organizational principles and institutional matrix of Soviet science and by a closer scrutiny of the major work of Soviet experts in such new disciplines as the economics of science, the sociology of science, the general systems approach to the study of the interaction of the structural components of modern scientific research, and the pioneering work in forecasting the basic trends of the future development of the science-technology complex. In places, the narrative is impaired by the inadequate integration of material and the absence of a sharp thematic focus.

Hutchings has produced a pioneering study in a field that is both fascinating and important. In addition to rich (and refreshingly new) material, his book offers many carefully documented generalizations and valuable hints for further research.

ALEXANDER VUCINICH
University of Texas, Austin

ECONOMIC ASPECTS OF LIFE IN THE USSR: MAIN FINDINGS OF COLLOQUIUM HELD 29TH-31ST JANUARY, 1975 IN BRUSSELS. By *NATO-Directorate of Economic Affairs*. Brussels: NATO Information Service, 1975. 284 pp. Paper.

QUANTITATIVE AND ANALYTICAL STUDIES IN EAST-WEST ECONOMIC RELATIONS. Edited by *Josef C. Brada*. Studies in East European and Soviet Planning, Development, and Trade, no. 24. Bloomington: International Development Research Center, Indiana University, 1976. xiv, 133 pp. Tables. Charts. \$6.00, paper.

In economics, "quantitative" studies include a diversity of methodologies, from basic statistics to econometrics. Although differing in subject matter, these two paperback publications illustrate opposite ends of that quantitative spectrum. The first (the

NATO study) examines the well-being of Soviet households with great attention to statistics, for example, rubles per pensioner, and women engineers as a percentage of total engineers. The second (Brada) examines East-West trade with econometric analysis of similar statistics, for example, regression models of gravity flow. Although both methods expand our knowledge of Slavic affairs, my professional preference lies with the latter method where assumptions underlying the use of statistics are more explicit. An overriding strength of that method is its usefulness for prediction, and the Brada volume has much to offer those who seek to forecast the course of East-West trade.

International trade models are difficult to apply to socialist economies because the peculiarities of those systems, particularly central planning, violate basic assumptions. Yet those assumptions are not unreasonable for socialists to hold: economic rationality and differential response to factor endowments. The models need not be abandoned, only modified. The authors of papers in the Brada volume appropriately adjust traditional models for socialist system differences and test them empirically. The adjustments are not substantial and traditional models apply very well to socialist systems.

The majority of the papers focus on international trade in integrated trade areas (customs unions), particularly the CMEA. Edward Hewett develops a gravity flow model of international trade using distance between trading partners, then compares trade in the customs union of the CMEA of Eastern Europe with that in the EEC and EFTA of Western Europe. He concludes that total trade is higher in the West than in the East, but that intra-group trade within the Western customs unions is less than in the East. This finding implies more autarky within the CMEA than within the EEC and EFTA. Hewett, in a stimulating conclusion, questions whether that autarky is a result of deliberate isolationist policy or of the intransigency of central planning. Extending the CMEA customs union analysis, a paper by J. M. Montias examines intra-CMEA trade in raw materials and manufactures commodity groups; it demonstrates that the Soviet Union supplies raw materials to Eastern Europe and buys their manufactured goods. This suggests that expanding Soviet trade with the West may divert raw materials from East Europe and necessitate new markets for their manufactures. The remaining papers evaluate some prospects for trade diversion.

John Holt's paper explores difficulties experienced in joint venture projects between East and West, where the Western partner collaborates with the Eastern in production. Thomas Wolf's paper assesses the effects on trade between West Germany and East Europe as a result of lifting quantitative restrictions which resulted from currency inconvertibility and bilateralism. His study emphasizes the importance of growing trade in rapidly expanding, that is, income elastic, markets. Eastern European economies seek such markets but the Soviet Union does not. Paul Marer examines the growth of tourism, a substitute for marketable goods. Finally, papers by Josef Brada and Larry Wipf and by Marvin Jackson examine Rumanian trade with Western markets and Rumanian foreign trade prices. All of the papers were presented at a conference in Bucharest in June 1974 and Rumania is a major concern of the authors; however, the methodology and the analysis of trading areas transcend the national subject. No index or table of authors is included in the volume, but otherwise the quality of its production is high despite the low price.

Authors of the NATO volume include both Western economists and émigré scholars who examine the level of Soviet consumer expenditures and its distribution.

Several papers focus on the possibility that growing consumer income has led to repressed inflation. Gertrude Schroeder demonstrates that sales of consumer goods have grown less fast than income and savings, and cautiously assesses these prospects for repressed inflation. Aron Katsenelinboigen pursues the macroeconomic consequences of repressed inflation where the motive for savings is not liquidity but sheer

absence of available goods. One spending outlet is a "parallel" market of illegal and senile transfers; Dmitri Simes analyzes its expected characteristics; one would expect that the goods would be income elastic and labor intensive, implying a disproportionate share of services in the total. Simes notes that Soviet authorities, while officially deploring this market, are perforce required to rely on it to solve system disequilibria. Everett Jacobs examines the market in private housing (especially cooperatives) and its competitor in the public sector.

The acquisition of income and consumer goods, however, is not necessarily egalitarian. Keith Bush continues his excellent international comparisons of living standards and working conditions. Peter Wiles finds that Soviet equality has increased greatly since 1967 and couples it with observations on the role of chance in wage relativities, our imperfect linking of wages and work effort, and the incidence of Soviet taxes. Mervyn Matthews defines the Soviet elite and estimates its income, a formidable task and well done.

Other papers include household interaction with labor supply (Norton Dodge, Maria E. Ruban, G. Wild) and the role of pension and medical programs (H. Vogel). The volume would be an excellent supplementary text for a course in Soviet contemporary economics or other social science.

ELIZABETH CLAYTON

University of Missouri, St. Louis

IMPLEMENTATION OF SOVIET ECONOMIC REFORMS: POLITICAL, ORGANIZATIONAL, AND SOCIAL PROCESSES. By *Karl W. Ryavec*. New York: Praeger Publishers, 1975. xvi, 360 pp. Figures. Tables. \$21.50.

This study joins a large Western literature on the nature, implementation, and consequences of the economic reforms launched by the Soviet leadership in late 1965—the so-called Kosygin reforms. The author views the reforms as an attempt to change the behavior of enterprise managers in ways that would bring about a more efficient use of scarce economic resources and both raise the rate of growth in output and improve its quality and design. The author seems to believe that the reforms, at least initially, had the potential to effect profound changes in the Soviet political, social, and economic systems. As a framework for ascertaining whether or not significant change has in fact occurred in the process of implementing the reforms, the author examines the evidence for behavioral change in key managerial relationships—enterprise managers and their hierarchical superiors, managers at all levels and the Communist Party, enterprise managers and their workers, and enterprise managers and other managers. The conclusion reached is that real, qualitative change has indeed occurred, particularly in the manager-worker relationship, but that the extent of behavioral change has been much less than the political leadership desired. Granting that the reform has had minimal effect in improving economic performance, the author, nonetheless, argues that it has had significant social and political consequences. "Its implementation has set in motion waves of economic and social change, and perhaps ultimately political change as well, whose magnitude cannot but grow . . . because the Communist Party has itself become part and parcel of the process of reform." And "the reform has set in motion a major current of Soviet political life," which is "the tension between the demands flowing from the attempt to modernize Soviet society and the resistance of ideologues and conservative functionaries."

From the point of view of an economist, this book leaves much to be desired. There are inaccuracies and a great deal of impreciseness in dealing with economic concepts, processes, relationships, and consequences of the reforms. Aside from that, the author seems to believe that the political leadership, in launching the reforms,