

Control and Cybernetics

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Preface and Acknowledgments

The editors of this special issue would like to see their product as a small step towards composition of a comprehensive image of what is going on in post-communist economic and political systems, what are the problems, opportunities and perspectives, both inside and for the international cooperation. Understanding of the transition processes is insofar important as the fate of a large portion of world economy and therefore also of world politics depends upon correctness of decisions taken within and for the transforming economies. It is likewise hoped that the international conference on "Transition to Advanced Market Economies", Warsaw, June 1992, also organized by the Polish Operational and Systems Research Society, and the materials therefrom, now in print, will constitute a subsequent step in building up of the necessary body of expertise.

The present volume consists of fourteen papers prepared in connection with the international seminar in Stupava-Bratislava, held in September 1990.

The problems of transition result, of course, first of all from the necessity of making up in a very short time (or at least in a period of time commonly *expected* to be short) for what has been neglected or outright undone over several decades. As always, though, the questions arising are more intricate than just the pace of changes and the effort and resources necessary for implementing these changes. First of all a soft revolution leaves in place the whole infrastructure, human and semi-institutional, of the old establishment. This all-pervading infrastructure does not simply slow down or hamper the changes, but tries to shift the course of the transition in the direction advantageous for the infrastructure participants, mainly medium level bureaucrats and newly made nomenclature-based business.

There is also another, very important instance of difficulties, namely the fact that the very same social groups which were the motive forces behind the collapse of the quasi-totalitarian rule, e.g. in Poland, namely the blue-collar workers of the large state-owned enterprises and the intellectuals, are hit the hardest by the economic crisis resulting from transformation (bankruptcy of the ineffective and inefficient large enterprises and shortage of money from the central budget for such domains as education, culture or health care). Thus, the present volume is meant to highlight the background and the perspectives, together with the sources of problems in transition and the possible ways to cope with them.

Papers are presented in four chapters, entitled, consecutively:

1. THE BACKGROUND FOR ANALYSIS;
2. ECONOMIES IN TRANSITION: THEIR SITUATIONS AND THEIR MODELS;
3. THE SECTORAL VIEW;
4. MODELLING AND ANALYSIS OF ELECTION SYSTEMS.

Three papers make up the first chapter: "The Background for Transition: the Case of Poland", by Andrzej Straszak, one of the organizers of the Stupava meeting, "A Metaphoric System of Economy", by Jan W. Owsinski, one of the editors of the volume, and "The Possibility of a Soft Revolution" by John-Paul Leonard.

First of these three papers presents a broad historical background of the development of the real-socialist system, with special emphasis on the case of Poland. The second describes a metaphoric system of economy working in accordance with the rules proper, in fact, for the communist or similar totalitarian system. The metaphoric system proposed by Owsinski has great affinity with the workings of the real one, this affinity being sufficient for analyzing it as a model of more intricate, and practical, aspects of systemic construction and behaviour, and also for analysis of difficulties arising in the efforts to deal away with the totalitarian rule.

Then, the third paper, by American scholar John-Paul Leonard, analyzes current problems of the transforming economies, especially of the Czech and Slovak ones, in view of Western experiences and theoretical thought. From there, the paper goes on to propose certain rules of the thumb regarding e.g. privatization, foreign trade, and unemployment. Leonard argues for smooth transition as opposed to shock therapy, and gives a number of more detailed hints. In some cases application of these hints is no longer possible, or has been made

impossible by a definite political situation (see the blue-collar paradox mentioned before), but for most, if not all of Central and Eastern European countries some of them remain valid, at least as a point of reference.

The second chapter, entitled *ECONOMIES IN TRANSITION: THEIR SITUATIONS AND THEIR MODELS*, contains again three papers, of which first is "The Estonian Economy and Its Development Problems", by Teet Rajasalu from the Institute of Economics, Estonian Academy of Sciences, which provides a well illustrated description of Estonian economy until 1991, together with a few points of departure for the future. It should be mentioned that a large number of observations forwarded in this paper are also valid for the two other "Baltic" states: Lithuania and Latvia. The observations gain in interest in the situation of the recently accelerated changes occurring to the East of Poland.

The second paper in this chapter was written by professor Peter Fleissner from the Viennese University of Technology together with Gudrun Krüger of the Institute of Economics, Germany (East), and it presents the approach to and the results of simulation of the course of economic events on the territory of previous German Democratic Republic. Recent developments in Germany, leading even to social unrest, fully justify a broad use of all the quantitative "intelligence" tools available for forecasting and policy analysis, especially when the tools used are flexible enough to accommodate changes appearing and new factors of the situation.

Then comes the paper by Bui Cong Cuong from the National Center for Scientific Research in Hanoi, Vietnam, entitled "Vietnam, a Hybrid Transitional Model", which is to a large extent devoted to description of the recent history of Vietnamese economy and the problems therein. The paper describes also policies taken for the future in particular domains. Let us note that Vietnam represents a very special case, in which reforms were started from the top under the influence of changes in other communist countries and the poor performance of own economy. As such a case Vietnam is certainly worth looking at, for it may constitute an important ideologically telling example.

The third chapter is entitled *THE SECTORAL VIEW*. The first paper in this chapter, "Production in a Non-Market Economy", was written by Jan Gadowski of the Systems Research Institute, Polish Academy of Sciences, who works also with the Economic Team of the "Solidarity" Trade Union. The paper describes a new approach to more adequate analysis of production course and conditions through production-function-like framework and gives the re-

sults of such analysis for sectors of Polish economy at the turn of the 1980s.

Peter Moore, of the Operational Research Executive of British Coal, has written the paper on restructuration of major state-owned industries, basing upon experience from, of course, coal industries, in UK, Pakistan and Hungary. This paper shows also the tasks arising for operational and systems research within this context and provides certain policy guidelines resulting from experience to date.

The third paper in this chapter was written by Janusz Babarowski, Zbigniew Nahorski and Andrzej Straszak, from the Systems Research Institute, Polish Academy of Sciences, and its subject is modelling of dependence of unemployment levels in a number of European and North American countries on world oil prices. Such exercises should be seen in the perspective of preparation of our economies for entering into the truly close relationships with the world market, on the one hand, and in the perspective of the proper substantial meaning of the analysis. The statistical tests showed significant dependence between historical records for all countries. A classification of countries on the basis of unemployment reaction to oil price shock of 1970s has been proposed.

The fourth paper of this chapter, by Jan Gadomski, Cezary Iwański and Piotr Wyczański, entitled "Forecasting the Polish Zloty/US Dollar Free Market Exchange Rate", presents an expert system shell developed by one of the authors and a system, realized with the help of the shell, for forecasting of the Polish Zloty/US Dollar exchange rate in the very peculiar economic and currency situation prior to the start of essential economic changes of 1989. The paper is a good illustration of the situation when cracks in the communist system start to be filled with elements of a grey market economy, and the considerations presented in the paper, while preserving general validity for circumstances of this kind, are still in force for several of the transforming economies (especially within the previous area of the Soviet Union).

The last paper in this chapter, written by Koloman Ivanička, one of the main organizers of the Bratislava-Stupava meeting, describes a very general model which can be used to simulate and analyse the innovation-and-investment against routine-and-imitation behaviour of enterprises in the turbulent environment of changing economies and societies.

The chapter on MODELLING AND ANALYSIS OF ELECTION SYSTEMS is, as signalled, devoted primarily to voting and elections – to power distribution in the parliaments of Czecho-Slovakia, to characteristics of voting pro-

cedures and to election result in fall 1991 in Poland. First two papers constituting this chapter were written, respectively, by: František Turnovec from Czecho-Slovakia, and by Jacek W. Mercik from the Technical University of Wrocław, Poland. These two papers are a good illustration of current interest in applications of voting theory for purposes of decision- and policy-making in the scientific community all over the world, but are simultaneously a proof of special interest in this subject emerging in countries recently returning to democracy. The third paper in this chapter, written by Jan W. Owskiński and Sławomir Zadrożny of the Systems Research Institute, Polish Academy of Sciences, describes the political environment and the results of the first post-war free parliamentary elections in Poland for an urban commune.

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It is proper at this point to mention those who were involved in organization and running of the Stupava seminar, from which the present issue of Control and Cybernetics originated, namely Professors Koloman Ivanička, Jozef Sokira, Andrzej Straszak and František Turnovec, as well as the staff from the Institute of Management in Bratislava – Vojtech David, Vladimír Tikl, Stefan Sperka, Ondrej Krankus, Renata Drienska, Jaromír Babka, Darina Vargova, Jana Hradská, Dana Dinkova and Peter Valla, and also from the Polish Operations and Systems Research Society – Andrzej Kałuszek, together with the editors of the present volume.

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The Editors