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Preprints

TRANSITION TO ADVANCED MARKET ECONOMIES

Abstracts

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SESSION 2

MODELLING OF THE TRANSITION PERIOD AT THE MACRO-LEVEL

TOPICS IN ECONOMETRIC MACROMODELING FOR THE TRANSITION PERIOD

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Former Centrally Planned Economy,CPE's, entered a period of transition towards market economies. Hence, exististing anual macromodels must be adequately respecifed and the new ones built, using high frequency data. We argue that the old supply-determined models for countries which restored market equilibria are outdated. However, fully demand-oriented macromodels are not suitable tools of analysis either, as market mechanisms are not fully at work, the producers' (especially public) responses to market signals are weak, characterized by long lags.

Hence, integrated models generating potential supplies, effective and national demand, excess demand/supply (i.e.unemployment) seem appropriate for the period of transition. Full coverage of financial flows and prices is inevitable, with fiscal measures as major policy instruments. The paper shows how the large annual model W-5 of the Polish economy has been revised along the above strategy and transformed into the new W-10 model.

The paralell tendency towards short-run forecasting and analysis, especially of financial flows and associated disequilibria (budget deficit, balance of payments surplus, high rates of inflation) as well as government interventions - is another characteristic of the transition period. The paper outlines the structure of a new quarterly model WK of the Polish economy built to meet these requirements and first experiences of its use.

ON THE MACROECONOMIC MODELLING FOR TRANSITION PERIOD

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Long-term economic development of countries can be considered as a sequence of two alternating stages: periods of smooth changes in economy and periods of structural changes i.e. transition periods. In the first case the quantitative and the evolutionary changes dominate over the economic development. The law of large numbers gives the possibility to apply the classical econometrical aproach to these periods.

The transition periods are characterised by qualitative and revolutionary changes. The law of large numbers is not valid. It is shown that for these periods development can be mathematically described in terms of the catastrophe theory. The behaviour of economic system can be described by the cusp catastrophe. Bifurcation points, i.e. the moments of transition to transition periods, indicate the possibility of appearance of a transition period.

A numerical example illustrates the validity of such approach. The example concerns the Polish macroeconomic system.

SYSTEM DYNAMICS APPLIED TO THE TRANSITION PROCESS

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Advantages and shortcomings of system dynamic models applied to the transition process of centrally planned economies toward market economies are discussed. Two models (for the former German Democratic Republic and for Slovakia) are presented and their structures are compared.

ENTREPRENEURSHIP, MARKET PROCESS AND ECONOMIC DEVELOPMENT. SOME THEORETICAL AND EMPIRICAL INSIGHT USEFUL FOR MANAGING THE TRANSITION PERIOD

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The crucial role of entrepreneurship in the economy has now received universal acknowledgement. This makes more and more evident the discrepancy between theoretical knowledge and reality in this field which, among other things, increases the difficulty of managing the transition to advanced market economy. This study develops a model aimed at representing the functioning of market economy with a high degree of detail and avoiding in particular some unrealistic assumptions typical of general equilibrium models, both of the Walras and Arrow-Debreu or von Neuman kind.

The paper develops an explanation of profit which leads to a better representation of entrepreneurial role and cycles. It also gives an explanation of sectoral output which is not strictly based either on consumer demand or on the production function, together with a theory of price formation which is consistent with the notion of dynamic competition. Some econometric estimation will better show the reliability of the theory outlined and its usefulness for applied analysis.

MULTISECTORAL MODELS FOR THE PERIOD OF TRANSITION AND THE USE OF SNA ACCOUNTS AND SAM DATA BASE

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Multisectoral models are an acknowledged tool for the studies of structural change, impact of new technologies and more recently also for detailed analysis of change in industrial activities, and related phenomena (recession, unemployment, financial flows). The significance of this line of economic analysis is especially high for countries that entered the period of transition from centrally planned to market economies. The IMPEC model for the Polish economy, being a demand oriented multisectoral model was built in the last years to serve these tasks.

However, the development of the statistical data base for Poland, first of all the reconstruction of I-O tables in the SNA framework and even more so the construction of SAM (for the year 1987) offered many possibilities. First, the IMPEC model has to generate the SNA categories. Second, it can be extended to cover new areas of economic (i.e. private sector growth) and social activities (i.e. income distribution) usig new data based on SAM. The paper outlines the suggested changes in SAM construction for Poland and discusses the wages. This new information will be absorbed in IMPEC multisectoral model.

MODELS OF NATIONAL ECONOMIES IN THE PERIOD OF TRANSITION (FROM CENTRAL PLANNING TO FREE MARKET): WHAT SHOULD THEY BE LIKE?

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In the period of central planning (CP) several models of the Polish economy were elaborated. As "the rules of the game" change, the modelbuilders face the problem of adapting their models to new conditions, usually called "transition period" (from CP to free market (FM) economy. Therefore, the following questionsarise: which assumptions of the previous models are to be replaced by other to make the new model fitted to the economy in the trasition period, and to what extent models of the transition period may imitate the models of mature market economies in Western countries?

Generally, models of economic objects differ in respect to (1) the choice of variables, (2) the division of variables into endogenous, strictly exogenous and control variables, (3) assumed mathematical form of interdependences between variables, (4) accepted methods of estimation of parameters to be inserted into the equations, (5) accepted methods of forecasting the values of strictly exogenous variables. Adaptation of models of the former CP economies to the transition period consists in changing the features of the model mentioned in points 1-5. e.g., more variables are to be treated as endogenous, less - as control variables. The form of many interdependences must change because of the change in the "institutional structure" of the society (e.g., tax system), etc. The peculiar problem is that of the estimation of parameters, because the trend of development of many quantities characterizing the economy have been broken. Problems of this type will be discussed on the basis of a model elaborated in 80's by the group of researchers in the Academy of Economics in Poznań, being now adapted to the "transition period".

MATHEMATICAL DESCRIPTION OF AN ECONOMIC TRANSITION PROCESS

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AN ANALYSIS OF THE EFFICIENCY CHANGES IN POLSIH INDUSTRY

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The subject of this paper is an analysis of changes in the labour and capital productivities induced by the transition to the market economy. The analysis consists of: assessment of efficiency of the production factors utilization at the starting point of the stabilization programme; evaluation of the trade-ogg between former input shortages and the lowered demand for products after deregulation of prices; assessment of the changes in the general efficiency of production as well as the changes of the productivities of the production factors. Analysis is based on the use of the production function relevant for the economic systems with imperfect competitation where goods can be produced in the neighbourhood of the minimal marginal cost. An emphasis is put on the technical aspect of the production process. Such approach makes it possible to neglect prices being still the outcome of the imperfect price setting mechanism.

BASIC MARKETS EQUATIONS FOR INFLATION MODELLING.

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Inflation is a major macroeconomic problem. The inflation modelling requires an aggregated description of the whole economy.

The paper presents the first step of inflation modelling. General mathematical description of basic macroeconomics markets is given. Some applications of this description to particular inflation model are shown.

ECONOMIC POLICY MAKING WITH AN UNCERTAIN FUTURE AIMING FOR FEASIBILITY, OPTIMALITY OR BOTH ?

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Consider a dynamic multiperiod planning model described by a system of simultaneous discrete-time equations and inequalities involving endogenous, exogenous and control variables. If criterion function expressing the preferences of the planner is added to such a system, we obtain an optimization model. When using such a model for selecting future policies, the problem of prediction uncertainty in the exogenous variables arises. This problem can be dealt with in the following way. Assume that different forecasts for the values of the exogenous variables over the planning period are given, along with probabilities expressing the reliability of each forecast. If these probabilities are brought into the model we obtain a stochastic programming problem. To be realistic, the optimal policy must possess a certain characteristic feature. Since at the present time we do not know which of the forecasts will turn out to be the true one (assuming that one of them will), all policies under consideration must be identical from the next time period onward. This is not as serious a restriction as it might first appear, since the model would be reoptimized in every period anyway with the new information available. We describe the modelling approach and discuss various solution techniques.

THE "SCANNING THE FUTURE" NCPB PROJECT

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The central theme of Scanning the Future, a study by The Netherlans Central Planning Bureau, is the development of the world economy well into the twenty-first century. The book provides a panoramic tour d'horizon of the world economy, and covers the grand topics currently under in the world community.

The study starts with the presentation of a prosperity circle, which sets forth three partly competitive, partly complementary perspectives on economic development, originating from the economic schools of thought founded by Adam Smith, John Maynard Keynes and Joseph Schumpeter. This framework provides the organizing principles of this study. Based on this circle, the study then tries to assess the current strengths and weaknesses of the major regions of world economy. Next, trends are analysed which will profoundly influence the future development of the world economy. This encludes topics such as demography, technology, the environment, world food supply, internationalization and international cooperation.

The core of the study is the chapter where the prosperity circle and analyses of comparative stregths and trends are combined, culminating in four scenarios of how the world economy may develop in the next decades: Global Shift, European Renaissance, Global Crisis and Balanced Growth. This big think should, however, in no way be interpreted as forecasts of the future. The aim these thought experiments is to stimulate public debate about long-term issues and to induce re-evaluation of conventional wisdom and mental maps. The book is therefore of special interest to strategic policymakers in business and government, and more generally, to all public persons and organizations interested in the long-term development of the worl economy. In order to make the book accessible to as wide audience as possible, it has been written in an informal and non-technical style.