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made) and looking for qualitatively different behavior modes. In Econometrics policy-simulation is used to find out the effects of modified decisions (the actions taken at any particular point in time), i. e. to identify incremental changes in numerical values of generated time-series.

Whereas Econometrics is the traditional method of modelling national economies since the pioneering work of Jan Tinberger, System Dynamics is just beginning to enter this field; here Forrester's project of modelling the U.S. economy has to be regarded as the major effort so far. As a creation of Jay W. Forrester System Dynamics was used first to study timevariant behavior aspects of business firms as it is indicated by the method's former name Industrial Dynamics. Soon it became a more universally applied philosophy in modelling as respected work on urban, regional, or world wide problems may demonstrate.

The fact that System Dynamics is now applied to problems which fall in the domain of Econometrics has led to controversial, but unfortunately not very fruitful discussions, because too many ideologically based arguments had been used on both sides.

Instead, it could add much more to scientific progress if questions about the theoretical and practical potential of the competing modelling methodologies would be raised and answered on a more profound ground. Thereby opposing parties could learn from each other and bridges may gradually be built up.

In this respect the time has come for scientific work such as that of Manfred Sommer. In his book he illustrates the "differentiae specificae" of both modelling paradigms, comparatively evaluates their use for macro-economic modelling, and puts the question concerning convergencies. The book has five chapters; its first gives an introduction and its fifth concluding summaries and perspectives. The essential parts of the book are focused on the basic structures and characteristics of both modelling approaches which are later on compared with the aid of four criteria. This sequence of discussions helps the reader to become more familiar with each of the two approaches and to follow their comparison more easily.

Chapter two headed by the "structure of macro-econometric models" gives detailed information about different kinds of models, parameters, and equations. The author stresses the necessity to make notobserved data numerical and testable by means of statistical methods. Under the heading "model equations" he describes behavioral and definitorial equations as well as their functional form. Above all he discusses the transformation from economy to econometric models, the prerequisites that have to be fullfilled by econometric models, as well as their structural, reduced, and final form.

In chapter three the author draws a complete picture of the System Dynamics approach. His description includes the level-rate concept and its use in macro-economic models, the meaning of feedbackloops within a closed system boundary, the selection of the solution interval DT, the importance and different kinds of delays, the rate and auxiliary equations, and finally the phenomenon of non-linearities and their representation in table functions. The statements and critique about these subjects are profound and constructive. They are especially valuable where the author discusses the transformation of the System Dynamics philosophy nto macro-economic modelling. Besides others Sommer raises the question whether macro-economic variables that represent flows should be modelled either as rate variables in material networks or as auxiliary variables in information networks. His respective evaluation of consequences concerning the transformation of macro-economic behavioral equations into a level-rate concept is quite informative.

Chapter four is the author's main work. Here he systematically compares the two modelling approaches according to four major aspects:

- 1. the informational prerequisites in model specification,
- 2. the options to be generated for the various model forms,
- 3. the methods for parameter specification, and
- 4. the evaluation strategies.

In doing this the author also regards modifications of the System Dynamics approach that have been realised in the meantime. The comparative analyzations and evaluations are too many to be mentioned here. They are all done very carefully and thereby help to give a clearer picture of the two modelling approaches concerning their supporting capacity for policymaking. At the end of his book the author comes to the conclusion that many perspectives for fruitful cooperations do exist and that it will be worthwhile for the theorists as well as for the policy-makers if bridges are built up between the two modelling approaches.

Besides some minor shortcomings the book has to be regarded as a major step towards a better mutual understanding of paradigms in the scientific modelling community. It should be read by anyone who has a genuine interest in the modelling of complex, social systems whether he is a student in the social sciences or a model builder who tries to support decision makers in various kinds of organizations.

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System Dynamics und Makroökonometrie – Dynamische makroökonomische Modellierung in multimethodologischer Sicht. Von Manfred Sommer. Reihe "Sozioökonomische Forschung", Band 17, Verlag Paul Haupt, Bern – Stuttgart, 1981, 418 Seiten, Fr. 55,-/DM 61,--(kartoniert/softback).

Econometrics and System Dynamics are two basic but differing philosophies in the field of modelling policy-making. The former is shortterm oriented and based on statistically estimated data; the latter is more long-term oriented and considers hard as well as soft facts. Policy-simulation with System Dynamics means analyzing the impacts of changing policies (the rules that state how decisions are