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an environment of market prices many of these companies may show a negative net worth. In this situation it may be rational for borrowers not to respect financial obligations, or in the case of banks, to continue lending to insolvent firms. A quick restructuring by the authorities of old debts is therefore necessary. Somewhat controversial may be their argument that continued government involvement is needed in the allocation of credit and restructuring of enterprises through a transitional planning agency.

Sweder van Wijnbergen ('Economic aspects of enterprise reform in Eastern Europe') discusses the problems of restructuring and privatizing the state enterprise sector. The author warns against the use of bankruptcy procedures as these would inevitably result in long delays. Also, it is recommended that special attention should be given to reconciling different creditors' interests. A proposed route towards privatization is sketched. It involves debt/equity conversion applied to the senior creditor, which is usually the State. Junior creditors, management and workers on the other hand would be compensated through call options on the enterprise's shares.

Holger Wolf, in his contribution 'Economic disintegration: are there cures?' compares the present disruption of trade between the former Soviet republics and also between the republics of former Yugoslavia to similar processes in the successor states after the dissolution of the Habsburg Empire. In order to overcome the disintegration process the establishment of a payments union is advocated. It should be enhanced with the obedience of rules of sound macroeconomics and trade policy. The author expects that the acceptance of such rules could be enforced by the IMF, by including them in its terms of conditionality.

Of the other contributions, which deal with a variety of subjects, mention should be made of Lorenzo Bini Smaghi and Silvia Vori's essay which discusses the question whether the EC is an optimal currency area compared to the US. The authors express their doubt about the negative answer found in recent studies. They state that the EC economies are more homogeneous – in terms of their regional production structure – than the US economy. Accordingly, the occurrence of asymmetric shocks seems less likely. Also, the efficiency of the exchange rate instrument in the EC appears to be low due to a relatively high real wage rigidity.

Charles Horner's essay 'Value-added does not pollute' dismisses the view that economic growth in itself will inevitably lead to environmental damage. Although the consumption of the raw material and energy component of goods may have negative effects on the environment, such is not valid for the value-added component. Policy should therefore aim at an increase in the value-added component of consumption. Several possible measures are suggested, like the introduction of an energy tax (combined with a reduction of income tax and VAT) and stimulating the use of recycling.

A.A. van der Werff

Paul Fisher, *Rational Expectations in Macroeconomic Models*, Advanced Studies in Theoretical and Applied Econometrics, Volume 26, Kluwer, Dordrecht, 1992. Pp. viii + 211. Dfl. 190,-

Large-scale macroeconomic models were at their height in the sixties and seventies. Well-known economists like Lawrence Klein and Jan Tinbergen were awarded the Nobel

prize amongst other awards for their efforts in the model-building industry. With the advent of New Classical economics and the devastating Lucas critique in 1976 large-scale model building was no longer an art with which one could show off at learned seminars. Today one can only show off one's capabilities in this field at very specialized conferences and in abstruse economic journals. In the seventies macroeconomic model builders thought one could counter the critique of the academic community by building larger models. Of course, this was an illusion since size has never been a character trait that convinces economists. One drawback of the continuously growing size of such models is that the transparency of economic mechanisms and principles is lost. Of course, the instant retort of macroeconomic model builders is that one gains a large amount of realism. One can easily forget however, that this gain in realism is merely *ex post* realism. The forecasting performance of models has not been significantly improved.

Despite this type of critique, economists of a practical persuasion are still attracted by the model-building industry. For instance, in the U.K., the U.S., Germany, France, The Netherlands and at OECD headquarters (the project LINK) large-scale models of the economy are still used in practice to evaluate economic policies and to generate forecasts for the short-run; the very bold use them for long-run forecasts. The professional requirements of a model builder have, however, changed over time. One cannot simply construct a model consisting of a set of simultaneous equations and add a time path for some exogenous variables to generate forecasts. On the contrary, the lingo has changed with the Lucas critique and one has to incorporate forward-looking behaviour (somehow) and examine the uniqueness, stability and time-consistency properties of the model under review. In that respect the model builders are in no way different from their high-brow general equilibrium colleagues. But the task they set themselves is riddled by many difficulties; difficulties that are perhaps easily resolved in three-equation models of a small open economy. However, in a large-scale non-linear model of, say, 1000 equations problems of this nature become increasingly complex and one has to resort to other practical methods of evaluating the model properties. Analytical proof has become impossible. Paul Fisher, while working at the ESCR Macroeconomic Modelling Bureau and the University of Warwick, wrote a book on how to evaluate large-scale, non-linear macroeconomic models that contain rational expectations of future-dated variables. In order of appearance he examines topics like solution algorithms for the two-point boundary value problem; terminal conditions; uniqueness and stability; experimental design and stochastic simulation; the role of the exchange rate; and control methods including optimal control. In evaluating the model properties of large-scale models he resorts to three publicly available models of the U.K. economy, *viz.* the Liverpool model, the London Business School (LBS) model, and the National Institute of Economic and Social Research (NIESR) model. The main thread that can be distilled from his book is that *solution methods matter*. For example, the often favoured shooting techniques in solving rational expectations models are an inappropriate formulation for solving the basic consistent expectations problem and are unlikely to be feasible on many nonlinear models. Or to give another example: each finite-horizon, consistent expectation solution requires a set of terminal values. As long as the model possesses the required stability properties, Fisher proposes the use of endogenously generated values which assume constant or zero growth rates. The book is full of this kind of answers to practical solution-method problems.

Summing up all his findings encountered in the practice of large-scale model building

is a tedious task. I will leave it to the interested reader to distill the most interesting parts from his evaluation. The main merit of Fisher's book is that one is warned against the dangers of using large-scale models with rational expectations in a naive way. Fisher does not offer the reader a pleasant journey (and to a certain extent this is inherent in the objective of his book) but he does make model building with the use of rational expectations accessible and I believe that his 'cookery book' will surely be consulted by the applied economist who wants to put together a state-of-the-art non-linear macroeconomic model with rational expectations.

Hendrik P. van Dalen

J.J. Laffont (ed.), *Advances in Economic Theory*, Sixth World Congress, Vol. II, Cambridge University Press, Cambridge, etc., 1992. Pp. 450. £35.-

This book comprises 7 invited papers presented at the Sixth World Congress of the Econometric Society in Barcelona in August 1990. Each of the papers presents a survey of the most recent advances in some area of economic theory.

The first chapter by L. Epstein surveys developments in the theory of decision-making under uncertainty. The common goal of these theories is to generalize the classical expected utility model of choice in the view of some laboratory evidence. The paper explains these approaches both in static and intertemporal choice settings and discusses the implications for asset pricing models and the theory of games.

M. Harris and A. Raviv synthesize the recent literature on the theory of financial contracts in chapter 2. This literature addresses the problem of explaining the capital structure of firms and the design of financial securities using insights from the economics of information, industrial organization, and the theory of incomplete contracts. The paper not only summarizes these contributions but also relates them to the empirical evidence and points out problems for future research.

In chapter 3 J. Tirole presents the basic elements of a theory of collusion in organizations. The general framework involves an extended principal-agent problem, where the principal hires a supervisor to monitor the agent. In this situation the principal has to take into account that the agent and the supervisor may collude against him. The chapter concludes with a list of some open problems.

The following two chapters by D. Duffie and D. Cass, respectively, focus on the general equilibrium analysis of incomplete markets. Duffie's paper concentrates on existence of equilibrium, innovation in security markets, applications to asset pricing, and production decisions in an incomplete markets setting. Cass discusses the indeterminacy of the equilibrium allocation in such markets. This 'real' indeterminacy arises because the price level of future goods is not uniquely determined. The paper investigates the seriousness of this problem and the consequences of integrating outside money into the model.

R. Guesnerie and M. Woodford review the theory of endogenous fluctuations in models where market dynamics generate cyclical variations even in the absence of exogenous shocks. These models apply new results in the mathematical theory of dynamical systems