INTERNATIONAL STUDIES IN ECONOMIC MODELLING

Economic Modelling in the OECD Countries

EDITED BY

Homa Motamen

CHAPMAN AND HALL

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Edited by

Homa Motamen
Executive Director, Canadian
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Securities Europe Ltd, London

London
CHAPMAN AND HALL
New York

First published in 1988 by
Chapman and Hall Ltd
11 New Fetter Lane, London EC4P 4EE
Published in the USA by
Chapman and Hall
29 West 35th Street, New York, NY 10001

Printed in Great Britain by
J. W. Arrowsmith Ltd, Bristol

ISBN 0 412 29770 1

British Library Cataloguing in Publication Data

Economic modelling in the OECD countries.—
(International studies in economic modelling)
1. Macroeconomics—Mathematical models
2. Organisation for Economic Co-operation and Development countries—Economic policy—Mathematical models
I. Motamen, Homa II. Series
339'.0724 HD87

ISBN 0-412-29770-1

Library of Congress Cataloging-in-Publication Data

Economic modelling in the OECD countries/edited by Homa Motamen.
p. cm.—(International studies in economic modelling)
Bibliography: p.
Includes index.

ISBN 0-412-29770-1

1. Economic policy—Econometric models. 2. Economic forecasting—Econometric models. I. Motamen, Homa. II. Series.
HD75.5.E27 1987
338.9'00724—dc19 87–27006

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London

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Introduction to the Series

There has been a growing dependence in the past two decades on modelling as a tool for better understanding of the behaviour of economic systems, and as an aid in policy and decision making. Given the current state of the art globally, the introduction of a series such as this can be seen as a timely development. This series will provide a forum for volumes on both the theoretical and applied aspects of the subject.

International Studies in Economic Modelling is designed to present comprehensive volumes on modelling work in various areas of the economic discipline. In this respect one of the fundamental objectives is to provide a medium for ongoing review of the progression of the field.

There is no doubt that economic modelling will figure prominently in the affairs of government and in the running of the private sector, in efforts to achieve a more rational and efficient handling of economic affairs. By formally structuring an economic system, it is possible to simulate and investigate the effect of changes on the system. This in turn leads to a growing appreciation of the relevance of modelling techniques. Our aim is to provide sufficient space for authors to write authoritative handbooks, giving basic facts with an overview of the current economic models in specific areas and publish a useful series which will be consulted and used as an accessible source of reference.

The question may arise in some readers' minds as to the role of this series *vis-à-vis* other existing publications. At present, no other book series possesses the characteristics of *International Studies in Economic Modelling* and as such cannot fill the gap that will be bridged by it. Those journals which focus in this area do not present an exhaustive and comprehensive overview of a particular subject and all the developments in the field. Other journals which may contain economic modelling papers are not sufficiently broad to publish volumes on all aspects of modelling in a specific area which this series is designed to cover.

A variety of topics will be included encompassing areas of both micro and macroeconomics, as well as the methodological aspects of model construction. Naturally, we are open to suggestions from all readers of, and contributors to, the series regarding its approach and content.

Finally, I would like to thank all those who have helped the launch of this series. The encouraging response received from authors who have contributed the forthcoming volumes and from the subscribers to the series has indicated the need for such a publication.

Homa Motamen
London, Dec 1987

Preface and Acknowledgements

This volume aims to bring together the work of those involved in the development and use of macroeconomic models in the OECD economies. The main areas covered in the book are: international policy co-ordination, risk, supply-side, exchange rates, equilibrium models, use of resources, the United States economy, wages and employment, international modelling, country models, modelling techniques and domestic economic management.

I am grateful to John Edmonston, Lyndon Driscoll, Sean Holly and Brian Scobie for their help and support in preparing this volume.

Homa Motamen
London, Dec 1987

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1

The LINK model and its use in international scenario analysis

LAWRENCE R. KLEIN

The main ideas and structure of the world econometric model developed by project LINK are known, but the system is always undergoing change, and this fact, together with the need for substantive analysis in the light of most recent developments prompts me to give a few general indications about the total system. Originally, the project was conceived as an attempt to model the international transmission mechanism. The initial focus was on models of major industrial market economies where short run, cyclical-like fluctuations were transmitting disturbance from one country to another. Also, a guiding principle of the project has been that every resident model builder knows his or her own country best; so the principal emphasis has been on linking together prevailing national models, to operate in an international mode, rather than on constructing look-alike systems at some research centre.

What was first an attempt to study the international transmission mechanism evolved into a world model. At first, regional area models for developing and centrally planned economies were added in order to close the system, but gradually individual models for major developing and centrally planned economies have been introduced. Wherever possible, these have been prepared by resident model builders and entered into the system, but completeness has been an overriding aim, and the LINK centre has prepared or commissioned several models for cases in which a resident model builder could not be readily found. At present there are several resident model builders who are readying their models for formal entry into the system, but they help to monitor and guide inputs for the interim models that have been constructed at the LINK centre. A Chinese and an Indian team are presently designing 'own' systems for the world's two largest countries, and these will replace interim models in due course. Development of world telecommunications networks is making it ever more possible to maintain a single world model at the centre, consisting of components that are supplied from the corners of the globe.

The LINK system now consists of 71 individual country models and 8 regional models of residual groupings of countries. This is a large heterogeneous system of nearly 20 000 equations. It poses a considerable management problem, but it can be done, especially with many new facilities and procedures that have only recently become available.

There is much to be said for uniform systems. Notation, documentation and computer handling are vastly simplified. It is easier to understand the workings of a homogeneous system and to trace the causal structure of economic events. Also, many homogeneous systems tend to be more compact and smaller than LINK, and the single-handed researcher definitely prefers a small over a large system. More sophisticated statistical treatment of the former is possible. While I fully appreciate these arguments in favour of 'small is beautiful', I am fully committed to the continued development of a large heterogeneous system. Actually, the Wharton world model is a homogeneous system, while LINK is heterogeneous, and I have worked with both systems. The former is more viable from a commercial point of view, but my true love for both research and substance remains the LINK system. It is not a matter of 'bigger is better', but it must, of necessity, be a large system if it is to be used for the kinds of applications that

Table 1.1 LINK models

North America:	
	Canada, USA
Developed East:	
	Australia, Japan, New Zealand
EEC:	
	Belgium/Luxemburg, Denmark, France, Germany (FR), Greece, Ireland, Italy, Netherlands, Portugal, Spain, UK
Rest of Industrialized Countries:	
	Austria, Finland, Iceland, Norway, Sweden, South Africa, Switzerland
South and East Asia:	
	Hong Kong, India, Indonesia, Korea, Malaysia, Pakistan, Philippines, Singapore, Taiwan, Thailand, Other South-East Asia, South-East Asia Least Developed
West Asia:	
	Iran, Iraq, Kuwait, Saudi Arabia, Israel, West Asia Oil Importers, Other West Asia Oil Exporters
Mediterranean:	
	Cyprus and Malta, Turkey, Yugoslavia
Centrally Planned Economies (CPE):	
	Bulgaria, China, Czechoslovakia, Germany (GDR), Hungary, Poland, Romania, USSR
Latin America:	
	Argentina, Bolivia, Brazil, Chile, Colombia, Eucador, Mexico, Paraguay, Peru, Uruguay, Venezuela, Caribbean
Africa:	
	Algeria, Egypt, Ethiopia, Gabon, Ghana, Kenya, Libya, Morocco, Nigeria, Sudan, Tunisia, Africa Least Developed, Other African Countries
Rest of the World	