

Econometric methods for the modelling of nonstationary data, policy analysis, and forecasting (EMM)

an ESF Scientific Network

The purpose of the Network is to facilitate increased cooperation and interaction between leading European econometricians researching on the modelling of nonstationary macroeconomic time series, and to make the results available to a wider audience. The emphasis of the Network's research activity will be on the development of new tools for economic modelling of nonstationary data, on theoretical and empirical studies of the use of econometric models for forecasting, economic policy analysis, and on deepening understanding of the underlying driving forces in the changing European macroeconomic environment. A brief motivation for the need for these econometric tools is reported in the following.

There has been a progressive economic convergence among most countries of the European Union (EU) since the breakdown in the early 1970s of the Bretton Woods system of fixed exchange rates dictated largely by national central banks or governments. But the macroeconomic effects of the fundamental changes within the EU have yet to be fully understood either empirically or theoretically. Yet with European enlargement pending, there is an urgent need for better understanding of the benefits and costs of convergence. The ultimate aim of this Network is to develop such an understanding through improved analysis of dynamic macroeconomic behaviour. To perform the necessary econometric research, this Network is coordinating existing programmes involving leading econometricians at various institutions throughout Europe. The focus is on the modelling of nonstationary data (i.e. involving data that itself changes in pattern over time with uneven structure and occasional breaks or shifts), because this has been shown to match the real economic world better than stationary data.

One way of learning more about the consequences of enlargement is to analyse available empirical data on past integration processes. Examples of such past integration include the unification between the former west and east Germany during the 1990s, and in particular between the wealthier countries of northern Europe and the less well off countries of the south over 20 years ago in the last wave of EU enlargement. This last integration certainly eroded differences in the standard of living between north and south, but in both the above cases the transition period has been long and the costs high. Ongoing research suggests that with less rigid controls over prices and wages, the transition could have been less painful.

But to argue convincingly for measures to reduce the pain of enlargement, much more research is needed based on the historical data to improve understanding of the underlying mechanisms.

This Network is conducting its research by focusing on nonstationary data models. Economic data tends to be nonstationary because it is governed by stepwise changes such as technological progress and new legislation that produce breaks in time series data. But the econometric analysis of such data has proved difficult and has tended to create new problems that need to be solved in order to obtain reliable answers to the questions asked. The methods needed to solve these problems can be classified into three broad groups:

- **Inference on economic structures based on historical data.**

How can we understand as much as possible of the historical variation in the data?

- **Inference on policy decisions based on the structural analysis of historical data.**

What are the econometric conditions that must be satisfied by a structural model in order that it can produce reliable policy simulations?

- **Inference on forecasting based on historical data.**

What are the implications for forecast reliability of data being subject to structural change?

Much econometric research has already been done within these three groups, but most of it for stationary data. As the last decade of research has demonstrated, the results change fundamentally when the data is nonstationary. This Network includes many of the most prominent scientists in the world who are actively engaged in solving the econometric problems related to the above topics for nonstationary data.

This Network was approved by the ESF Network Group in May 2001 for a three-year period



Coordination Committee

Professor David Hendry (Chair)

Nuffield College
University of Oxford
New Road
Oxford OX1 1NF
United Kingdom
Tel: +44 1865 278 500
Fax: +44 1865 278 621
Email: david.hendry@nuffield.ox.ac.uk

Dr. Paolo Paruolo (Convenor)

Department of Economics
Università dell'Insubria
sede di Varese
Via Ravasi 2
21100 Varese
Italy
Tel: +39 0332 21 52 12
Fax: +39 0332 23 52 86
Email: paruolo@stat.unibo.it

Professor Gunnar Bårdsen

Department of Economics
Institutt for Samfunnsøkonomi
Norwegian University of Sciences and
Technology (NTNU)
Dragvoll
7491 Trondheim
Norway
Tel: +47 73 59 19 38
Fax: +47 73 59 69 54
Email: gunnar.bardsen@svt.ntnu.no

Professor Juan José Dolado

Department of Economics
Universidad Carlos III de Madrid
C./Madrid, 126
28903 Getafe (Madrid)
Spain
Tel: +34 91 6249 300
Fax: +34 91 6249 313
Email: dolado@eco.uc3m.es

Mr. Stéphane Grégoir

INSEE-DESE
Division "Croissance et Politiques
Macroéconomiques"
Timbre G220
15 boulevard Gabriel Péri
BP 100
92245 Malakoff cedex
France
Tel: +33 1 41 17 59 73
Fax: +33 1 41 17 60 45
Email: stephane.gregoir@insee.fr

Professor Søren Johansen

Department of Statistics
and Operations Research
Institute of Mathematical Sciences
University of Copenhagen
2100 Copenhagen Ø
Denmark
Tel: +45 35 32 0681
Fax: +45 35 32 07 72
Email: sjo@stat.ku.dk

Professor Helmut Lütkepohl

Institut für Statistik und Ökonometrie
Humboldt-Universität zu Berlin
Spandauer Straße 1
10178 Berlin
Germany
Tel: +49 30 2093 5713
Fax: +49 30 2093 5712
Email: luetke@wiwi.hu-berlin.de

Professor Grayham Mizon

Department of Economics
University of Southampton
Highfield
Southampton SO17 1BJ
United Kingdom
Tel: +44 23 8059 2519
Fax: +44 23 8059 3858
Email: grayham.mizon@soton.ac.uk

Dr. Rocco Mosconi

Dipartimento di Ingegneria Gestionale
Politecnico di Milano
Piazza Leonardo da Vinci 32
20133 Milano
Italy
Tel: +39 02 2399 2747
Fax: +39 02 7004 23151
Email: rocco.mosconi@polimi.it

Dr. Marius Ooms

Department of Econometrics
Free University Amsterdam
De Boelelaan 1105
1081 HV Amsterdam
Netherlands
Tel: +31 20 444 6023
Fax: +31 20 444 6020
Email: ooms@econometriclinks.com

Professor Timo Teräsvirta

Stockholm School of Economics
Department of Economic Statistics
P.O. Box 6501
113 83 Stockholm
Sweden
Tel: +46 8 736 9243
Fax: +46 8 348 161
Email: stimo@hhs.se

Dr. Katarina Juselius (Liaison Officer)

Institute of Economics
University of Copenhagen
Studiestræde 6
1455 Copenhagen K
Denmark
Tel: +45 3532 3068
Fax: +45 3532 3064
Email: katarina.juselius@econ.ku.dk

ESF Liaison

Dr. Włodzimierz Okrasa

Senior Scientific Secretary

Ms. Rhona Heywood

Administrative Assistant

Tel: +33 (0)3 88 76 71 31
Fax: +33 (0)3 88 37 05 32
Email: rheywood@esf.org

The European Science Foundation acts as a catalyst for the development of science by bringing together leading scientists and funding agencies to debate, plan and implement pan-European initiatives.

The ESF Network scheme is coordinated from the Foundation's Strasbourg headquarters. For further information and application procedures contact:

Tony Mayer

Tel: +33 (0)3 88 76 71 46 - Fax: +33 (0)3 88 37 05 32 - Email: networks@esf.org