MACROECONOMETRIC MODELS

Markus Sailer

German Pension Insurance
Department for Research and Development
Berlin; FRG; Baku, RA
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Q & A

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INTRODUCTION:
HISTORY, PURPOSE AND TYPES OF MACRO-ECONOMETRIC MODELS

A SIMPLE EXAMPLE: NATIONAL ECONOMY

Definition Y: Gross Domestic Product	$Y(t) = C(t) + I(t) + G(t) + X(t) - M(t)$
Consumption function of private households C	$C(t) = \alpha0 + \alpha1 * Y(t-1)$
Private Investment function I	$I(t) = \lambda * (Y(t) - Y(t-1))$
Government spending G	G (t): exogenous
Exports X	X(t): exogenous
Imports M	$M(t) = \gamma0 + y1 * Y(t)$

INTRODUCTION

Macro-econometric modelling is a combination of

- Problem description and analysis

- Adequate economic theory

- Data analysis and construction

- Appropriate statistical methods

- …

Macro-econometric modelling is an art.

HISTORY

1. The role of John Maynard Keynes
   - Economic theory: Control over the business cycle in a market economy
   - Development of national accounts
   - Forecasting

2. The development of econometric techniques
   - Econometric society founded in 1930

3. The development of more powerful computers

HISTORY

4. First model by Jan Tinbergen
   - Keynes' model
   - 1930, for the Netherlands
   - Later for USA and UK

5. First model of the global economy
   - Project LINK,
   - Starting in the 1970s
   - Larry Klein, Wharton Econometric Forecasting Association

6. HERMES: Harmonized European Research for Macro-sectoral and Energy Systems

PURPOSE

1. Type of analysis
   - Business cycle and economic growth
   - Sectoral development: Energy
   - Demographic change and pension funding

2. Forecasting

3. Simulation
   - Impact of exogenous developments
   - Policy analysis

CORE ELEMENTS OF A MACRO ECONOMETRIC MODEL (1)

1. Demographic block
   - Population; size, age structure, gender composition
   - Usually exogenous

2. Central economic blocks

   Expenditure block: GDP, consumption, investment,

3. Production block
   - Production function
   - Factor demand
   - Inter-industry flows (input-output model)

CORE ELEMENTS OF A MACRO ECONOMETRIC MODEL (2)

4. Income block
   - Distribution of income
   - Wages and prices
   - Labour market

5. Government-fiscal policy block
   - Expenditure on consumption, investment and transfer payments
   - Taxation
   - Social security

CORE ELEMENTS OF A MACRO ECONOMETRIC MODEL (2)

6. Central bank monetary policy block
   - Money supply,
   - Interest rates
   - Transmission mechanism

7. Asset structure
   - Flow of funds and wealth accumulation

8. External block
   - Balance of payment
   - Exchange rate
   - Capital account
   - External exogenous link, World trade

SINGLE-EQUATION ECONOMETRICS—A REMINDER

Switch to

Simple regression C01F01_2012_10_28

Q & A

Thank you very much!
Vielen Dank!