Inhoudstafel Econometrie: Tijdreeksanalyse

Part 1: Univariate Time Series Analysis

Chapter 1: ARIMA models

Chapter 2: Testing for Unit Roots

- Dickey-Fuller Test

    - How do we test for a unit root?

    - The basic Dickey-Fuller (DF) test

    - Extending the DF test: adding an intercept

    - Extending the DF test: adding an intercept and a trend

    - The Augmented Dickey-Fuller test

    - Back to the normal distribution

    - Caution!!!

- Model selection (Selecting the appropriate model)

    - Selecting the appropriate order of the AR process

    - Selecting the appropriate deterministic terms

- Pitfalls in unit root testing

    - Power

    - Structural breaks

    - Multiple unit roots

Part 2: Multivariate Time Series Analysis

Chapter 3: ADL Models

- Introduction

    - Dynamic Models with Stationary Variables

    - Some motivation for including dynamics

- Defining ADL

    - Generalisations

- Estimating ADL models

- Limitations

- Example: Consumption, income and wealth

Chapter 4: VAR Models

- Introducing VAR models

    - Structural VAR

    - Reduced-form VAR

    - Extensions

- Estimating VAR models

    - Model selection

    - Diagnostics

    - Implementation in EViews

- Analysing VAR models

    - Forecasting

    - Granger causality analysis

    - Impulse response function

    - Variance decomposition

- Identifying the structural VAR

    - Identification problem

    - Solving the identification problem

    - Recursive identification scheme

    - Non-recursive identification scheme

    - Restrictions on long-run responses

    - Sign restrictions

Chapter 5: Cointegration analysis

- Basic concepts

    - Spurious regression

        - The spurious regression problem

        - Examples of spurious regression

        - Simulating the spurious regression problem

        - Implication

    - Cointegration

        - Definition cointegration

        - Example

        - Economic interpretation

        - Econometric implication

        - Simulating cointegrating regressions

    - Error correction

        - Cointegration and Error-Correction Mechanisms

        - Example of an error-correction model

        - Important remark

        - A more general error-correction model

- Properties of OLS

    - Super consistency

    - Ignoring dynamics

    - Ignoring endogeneity

 - Testing for cointegration

    - The Engle-Granger two –step approach

        - Step 1: estimate static model and test for cointegration

            - 1. Cointegration Regression Durbin-Watson (CRDW) test

            - 2. ADF cointegration test

        - Step 2: Estimate an ECM to analyse the short-run dynamics

    - Example: consumption, income and wealth in the US

    - Pitfalls in the Engle-Granger two-step approach

    - Alternative approaches

        - Alternative 1: Testing for cointegration in the ECM

        - Alternative 2: Multivariate approach (Johanson)

- ADL and VAR models with non-stationary data

    - Unrestricted ADL versus restricted ECM model

    - Implications of including non-stationary data in unrestricted ADL or VAR model

Part 3: Extra Topics

Chapter 6: Panel Data

- Introduction

    - Structure panel data

    - Advantages

    - Disadvantages

    - Illustration: Explaining individual wages (Verbeek, 2012)

- Standard linear panel data model

    - Static linear model: general specifications

    - Static linear model: estimation

    - The simplest case: the pooled OLS estimator

        - Illustration: Explaining individual wages (Verbeek, 2012)

        - Results pooled OLS

- Second generation panel unit root tests

- Bai and Ng's (2004) Panic unit root test

- Panel cointegration analysis

- MW cointegration test

- Illustration: The Fisher hypothesis

- No spurious regression