

## **TIME SERIES ECONOMETRICS**

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### **DESCRIPTION**

There will be four-six problems worth 30 points in total. The problems will reflect the nature of homework assignments.. The midterm is a **close book exam**. During the exam you can use the following:

- a sheet of A4 paper with your notes from both sides
- a calculator
- a copy of statistical tables with for the following tests (no handwritten notes): ADF, IPS, KPSS, HEGY, Perron structural tests, normal distribution, F distribution, t distribution

### **TEXT**

Walter Enders (2004), *Applied Econometric Time Series*, 2nd ed., John Wiley & Sons, Inc., New Jersey.

James D. Hamilton (1994), *Time Series Analysis*, Princeton University Press, New Jersey.

Evzen Kocenda and Alexandr Cerny (2007). *Elements of Time Series Econometrics: An Applied Approach*. Charles University in Prague, Karolinum.

Thomas J. Sargent (1986) , *Macroeconomic Theory*, 2nd edition, New York: Academic Press.

Jeffrey M. Wooldridge. *Introductory Econometrics: A Modern Approach*. 2<sup>nd</sup> ed, Thomson/South-Western, 2003.

### **COURSE OUTLINE**

#### **Regression Analysis with Time Series Data**

Wooldridge, Ch. 10-11

- Problems 10. 1, 11.3

#### **Difference Equations**

Sargent, Ch. 9-11

- HW 1 – Problem 3

Enders, Ch. 1.

- Problem 6a+page 30 (non-stability conditions)... This is HW 1, problems 4,5

- Problems 5, 7

Kocenda and Cerny, Ch. 2

## **Stationary Time-Series Models**

Enders, Ch.2.1-2.12.

- Problem 2, 5

Kocenda and Cerny, Ch. 1, 3.1.

HW 1 – Problem 1

## **Volatility**

Enders, Ch. 3.1-3.11

- Problem 3

Hamilton 21.1, 21.2.

Kocenda and Cerny 3.7.7.

HW 1 – Problem 2

## **Unit Roots**

### *Univariate processes*

Enders, Ch. 4.1.-4.6, 4.8.-4.9,4.12.

- Problems 1 (HW 2 Problem 3), Enders Ch1.-problem 5

HW 2 – Problems 1a-c,2

### *Panel data unit roots*

Zemčík, P., and V. Mikhed, 2009, “Testing for Bubbles in Housing Markets: A Panel Data Approach,” *The Journal of Real Estate Finance and Economics* 38:366-386.

Enders 4.11

HW 2 – Problem 4

### *Seasonal unit roots*

Enders 4.7

HW2 – 1d