MA-W-110/120 – Univariate/Multivariate Time Series Econometrics

Course overview

Description   This course deals with time series econometric methods that are mainly applied in the fields of Macroeconomics and Finance. The lecture and the tutorials will be held in English. Formally, this course consists of two separate courses (univariate and multivariate time series econometrics) which will have separate exams at the end of the semester. Foundations in Mathematics and Statistics are essential. For the course in multivariate time series econometrics, taking univariate time series econometrics is highly recommended. Models of univariate and multivariate time series with stationary and non-stationary processes will be presented. Students learn methods and tools for analyzing univariate and multivariate time series and apply them in the computer tutorials to recent, real world data. Topics include:

- **Univariate time series models**:

    - ARMA processes
    - Augmented distributed lag models
    - Integrated and co-integrated processes

- **Multivariate time series models**:

    - VAR und VECM
    - Identification and analysis of structural shocks: SVAR

Lecturers   The lectures will be held by PD Dr. Till Strohsal and the tutorials will be led by Thore Schlaak.

Recommended literature

- Kirchgässner, G., J. Wolters und U. Hassler (2013): *Introduction to Modern Time Series Analysis*, Springer-Verlag.

- Enders, W. (2004): *Applied Econometric Time Series*, Wiley & Sons.

- Lütkepohl, H. (2007): *New Introduction to Multiple Time Series Analysis*, Springer-Verlag.

- Hamilton, J.D. (1994): *Time Series Analysis*, Princeton University Press.

Formal issues   For each course, the lecture and tutorial count for 6 ECTS credits. The courses can be taken via modules Economic Studies 1+2 (MA-W-110/120). Taking the course via different modules is not possible unfortunately. The course is primarily intended for masters students in Economics.

Exam   The 90-minute exams for the courses will take place at the beginning of the lecture-free time period in 2020. In the tutorials, students collect extra points for the exam based on their graded presentations. Anticipated exam dates:

- Univariate Time Series Econometrics: 13.02.2020

- Multivariate Time Series Econometrics: 20.02.2020

Time schedule and rooms The first lecture in univariate time series econometrics will be on 14.11.2019. The last lecture of the univariate part ends on 29.11.2019 at 15:00. The course on multivariate time series econometrics starts directly afterwards.

	Wednesday	Thursday	Friday
11.11.19 - 15.11.19	-	Lecture*	Tutorial**
18.11.19 - 22.11.19	Tutorial**	Lecture*	Tutorial**
25.11.19 - 29.11.19	Tutorial**	Lecture*	Lecture*
02.12.19 - 06.12.19	Tutorial**	-	Tutorial**
09.12.19 - 13.12.19	Tutorial**	Lecture*	Tutorial**
16.12.19 - 20.12.19	Tutorial**	-	Tutorial**

* 12:00-18:00   ** 09:00-12:00

Rooms:
Wednesday: 3.07.2.10
Thursday: 3.07.2.10
Friday: 3.01.1.65a (PC-Pool)