

Empirical Methods in Real Estate Economics (VVZNr: 22132)

(4 std) and Übung (2 std): 12 cp.

by **Prof. Gabriel S. Lee**

**University of Regensburg
Institute for Real Estate**

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Tuesday, 14:00-15:30 at R008

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- **Objective:** The overall objective for this course is to apply a set of the econometric techniques that is relevant in analyzing some of the issues in real estate markets. Some of the issues we will be addressing in this course are, housing markets, real estate cycles, regional economics, problems of the inner city, discrimination in housing and credit markets, and alternative public policy responses to urban problems. The course is designed to expose students to data on real estate (urban) markets, and hence, students are required to use econometric software tools such as E-Views, Matlab, RATS, etc.
- **Some Remarks:** This course is **NOT** an econometrics course per se. That is, the course is NOT meant to go deep into the theory of time series, cross-sectional, panel data, Bayesian, spatial, etc estimations, but rather the course focuses and utilizes on econometric tools that are relevant to real estate market issues. For example, economic models in real estate often explicitly consider locational effects: Such models may differ from their "spaceless" counterparts. But most of empirical works in real estate economics has employed relatively "spaceless" statistical tools, despite frequent mentions in the literature of observed violations of the assumptions underlying the optimality of such tools. For example, observing clusters of residuals of a one sign or another by neighborhood, along roads, or waterways violates the independent observation assumption underlying OLS, the most common tool in the field. And in order to address the location issues, the course looks at some of the techniques that are used in the Spatial econometrics. Having said this, the course also introduces some of the traditional econometrics, such as the VAR and Panel methods.
- **Prerequisite:** Sound knowledge in introduction to econometrics and micro/macroeconomics.
- **Textbooks:** *Spatial Econometrics* by James P. LeSage, December, 1998. To download this book <http://www.spatial-econometrics.com/html/wbook.pdf> And for "traditional" econometrics book *Introductory Econometrics: A Modern Approach*, by J. Wooldridge, 2nd edition, South-Western Pub, 2003.

- **Grading:**

	Grading Points
5 Homeworks	20%
Final Exam	75%

- I reserve the right to be discretionary on the remaining 5%: this depends on, say, the class participation and other unforeseen positive shocks.
- In order to obtain the Final Course Grade, each student **MUST pass the Final Exam first!** That is, passing (e.g. the grade of 4 or better) the final exam is a Necessary, but NOT sufficient to get the passing Final Course Grade.
- You are guaranteed an

1 if your score > 95 points	1.3 if 94 > your score > 90
1.7 if 89 > your score > 85	2.0 if 84 > your score > 80
2.3 if 79 > your score > 75	2.7 if 74 > your score > 70
3.0 if 69 > your score > 65	3.3 if 64 > your score > 60
3.7 if 59 > your score > 55	4.0 if 54 > your score > 50
5 if your score < 49	

- If there is a grading question on any of the assignments and/or final, then please submit your exact disagreement **in writing**, and **I will** regrade the **whole** assignments/final: there is no guarantee that your grade would improve.
- **NO EXCEPTIONS** on the agreed final exam date unless there is a medical reason (This is the University's Policy).
- **NO LATE** assignments will be accepted: any assignment that is not being turned in during class will **not** be accepted. A group of max. 2 can hand in a common assignment. Please find someone to hand in your assignments when you cannot attend. Plus, the "usual" University policy on make-up exams applies here.
- **All honor code rules** are in effect – even if not explicitly mentioned on each Exam/Assignment.

List of Topics

Some of the econometrics topics that will be covered in this class are listed below. Purposely, this list is not complete and not very detailed: I will post real estate issues that are relevant to these econometric methods as the course progresses.

1. Spatial Statistics and Econometrics
 - Introduction
 - Spatial econometrics
 - Estimation functions
 - Spatial autoregressive models
2. Time Series

- Least Squares
- Vector Autocorrelation Regression (VAR)
- VEC

3. Panel Data and Cross Section