MFE 522, Advanced Financial Econometrics

Fall 2020 (first half)

Prof. Soohun Kim

As of July/23/2020

1. Class Information

Title	MFE 522
Time	TBA
Location	TBA
Class Webpage	TBA
Office	SUPEX #332
Office Hours	TBA or by appointment
Email	soohun@kaist.ac.kr
TA	TBA
TA Email	TBA

2. Course Description

The objective of this course is to prepare students with sufficient statistical backgrounds to understand academic articles in the field of finance.

This course is not intended for general audience who are interested in finance. Students must be knowledgeable in statistics and finance theories. In addition, it is required for them to use MATLAB and Python for coding.

3. Textbook

There is no official textbook required for the course, but the following book is recommended for reference. In fact, I recommend students to find related materials from Wikipedia or youtube not textbooks. Reading list will be given each week.

- The Econometrics of Financial Market, 2nd Edition, by Campbell, Lo and MacKinlay

4. Assignments

There will be a small assignment for the most of weeks.

5. Quizzes/Exams

There will be a quiz for every two weeks and a final exam at the end of the course.

6. Regrading

You can request a regrading of your exam within one week after you receive the initial grade of your assignment/quiz/exam. Your grade *may* go down as a result.

7. Grades

40points: Assignments
40points: Quizzes
50points: Final Exam

8. Course Outline (Permanently Tentative)

Lecture 1: Statistics Crash

- Law of Large Numbers, Central Limit Theorem
- Hypothesis Test
- ANOVA, OLS
- Endogeneity

Lecture 2: Factor Pricing

2-1: Beta is priced?

- Measurement Errors, Portfolio Sorting, Regression Calibration, Instrumental Variables

2-2: Beta prices all?: Beta VS Alpha

- GRS test, BCS test, Short-alpha test
- Characteristic-rewards, Multifactor Model, Double Sorting

2-3: The Quest for Alpha: The Holy Grail of Investing

- Factor Zoo, How to Interpret Alpha
- Data Reduction: PCA, Alpha Portfolios

Lecture 3: Skills or Luck

3-1: Mutual Fund Managers

- Treatment Effect, Fixed Effect, Time Effect, Propensity Score Matching, Regression Discontinuity, Clustering

3-3: Analysts

- Market Efficiency, Structural Model, Counterfactual Analysis

Lecture 4: Animal Spirits

4-1: Investment to Tobin's Q

- Project Evaluation, Production-based CAPM, Measurement Errors

4-2: Policy Effect

- Regression Discontinuity, High Frequency Shock