Instructor: Ji Hyung Lee, Savery 336, 206-543-4592, email: jihyung2 at uw.edu.

Time and Location: MW 8:30 - 10:20 a.m, Savery 264.

Office Hours: MW 10:30 - 11:30 (after class) or by appointment.

Textbooks

- *Statistics and Data Analysis for Financial Engineering* by David Ruppert, Springer-Verlag. The UW library has access to the UseR series of books from Springer-Verlag. If you have a UW net ID then you can get access to these ebooks through the UW library page.

- *An Introduction to Computational Finance and Financial Econometrics* by Eric Zivot, manuscript in preparation. Pdf files will be provided through canvas.

Exams: Exam I is on Monday, February 10 from 8:30 - 10:20 a.m (in class). Exam II (cumulative) is on Wednesday, March 12 from 8:30 - 10:20 a.m (in class).

Grading: There will be weekly assignments and two exams. They will count toward the grade as follows.

- Assignments 30%
- Exam I 30%
- Exam II (cumulative) 40%

Assignments

Problem sets will be assigned on Mondays (after class), and will be due by next Monday 8:30 am (before class); you will have to submit through Canvas webpage (electronic filing only). Any late submission will not be accepted. If you have handwritings for analytical problems, please scan your handwriting and submit through Canvas, together with other computation results (statistical output from R).

Please use our canvas discussion page for your questions. In this way we can openly discuss what are difficult and how to overcome. You can discuss problem sets with classmates, but have to submit your own answers. Problems sets are mainly to encourage you to "practice", and doing them by yourself will be the most important task in this class.

Please read "Department Policy on Academic Conduct" from canvas webpage.
Academic integrity is the cornerstone of the Department’s rules for student conduct and evaluation of student learning. Students accused of academic misconduct will be referred directly to the Office of Community Standards and Student Conduct for disciplinary action pursuant to the Student Conduct Code and, if found guilty, will be subject to sanctions. Sanctions range from a disciplinary warning, to academic probation, to immediate dismissal for the Department and the University, depending on the seriousness of the misconduct. Dismissal can be, and has been, applied even for first offenses. Moreover, a grade of zero can be assigned by the instructor for the course.

Description of the Course

This course is an introduction to econometric modelling in empirical/computational finance. The course seeks to understand empirical properties of financial data. We also study statistical/probabilistic models behind these stylized facts. First, we review probability/statistics and time series concepts that will be useful to understand financial market dynamics. Then some popular econometric models and estimation methods will be investigated. Both analytical problem sets and data exercises will be assigned as homework, in order to enhance our theoretical and practical skills.

Tentative Schedule

- Week 1 (Jan 6 & 8): Course Introduction, Understanding Financial Returns.
- Exam I in class (Feb 10).
- Week 6 (Feb 12 & 19): Constant Expected Return (CER) Model.
- Week 7 (Feb 24 & 26): Single Index (SI) Model.
- Week 8 (March 3 & 5) Stochastic Volatility (SV) Model.
- Week 9 (March 10): Some Additional Topics and Review.
- Exam II in class (March 12).