Financial Time Series

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Department of International Business

National Taiwan University

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Class hours: Monday 9:10 am – 12:10 pm
Office hours: By appointment

OBJECTIVE: After taking this course, the students would have a solid knowledge of the basics of the mathematics for financial time series analysis.

Note: The lectures will be given in Mandarin rather than English.

Textbooks

1. Billingsley, Patrick, 1995, *Probability and Measure*, 3rd ed., John Wiley &Sons.
2. Aliprantis, Charalambos D. and Owen Burkinshaw, 1998, Principles of Real Analysis, 3rd ed., Academic Press.
3. Royden, H. L., 1988, Real Analysis, 3rd ed., Prentice-Hall.
4. Tsay, Ruey S., 2005, *Analysis of Financial Time Series*, 2nd ed., Wiley.
5. Karlin, Samuel and Howard M. Taylor, 1975, *A First Course in Stochastic Processes*, 2nd ed., Academic Press.

TOPICS (tentative): General Measures, Lebesgue Measure, Measurable Sets, Measurable Functions, Distribution Functions, Random Variables and Distributions, Integrable Functions, Lebesgue Integral, Expected Values, Fubini's Theorem, Normed Vector Spaces and L^p Spaces, Radon-Nikodym Theorem, Riesz Representation Theorem, Markov Chains, Poisson Processes (if time allows).

GRADING: Homework and Presentations: 30%. Mid-Term Exam: 35%. Final Exam: 35%.