

ISOM4520

Statistics for Financial Risk Management

LECTURE

Instructor: Prof. Baoqian PAN, Kris

Room: 5041 (LSK Business building); Email: ismtpbq@ust.hk

Office Hours: Tue 3:50 pm-4:50 pm; or send an email to make an appointment.

Teaching assistant: Mr. Shun Hin CHAN, Lupe

Room: LSK5017

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Office Hours: Mon 3:50 pm to 4:50 pm; or send an email to make an appointment.

Tutorial section: Tutorial sections will be arranged to learn R and practice the exercise.

Class meets:

12 pm – 2:50pm, Tue

Room 6573 (lift 29-30)

Tutorial:

Room: LSK G021

Time Period: 13/2 – 8/5

5 pm – 5:50 pm (Mon)

REFERENCE BOOK

Peter F. Christoffersen., “*Elements of Financial Risk Management*”, 2ndEdition.

SYLLABUS

This syllabus is subject to change in the event of extenuating circumstances.

Topic 1 – Introduction

Topic 2 – Stylized Facts of Financial Returns

Topic 3 – Measures of Market Risk

Topic 4 – Volatility Estimation and Modeling

Topic 5 – Simulation and Tail Behavior

Topic 6 – Dynamic Covariance and Correlation Modeling

Topic 7 – Simulation and Risk Term Structure

Topic 8 – Risk model Evaluation

Topic 9 – Credit Risk Management

COURSE WEBSITE

<http://canvas.ust.hk>

OBJECTIVES AND INTENDED LEARNING OUTCOMES

This course provides an introduction to financial risk management. Topics include how to measure market risks, statistical properties of returns and volatility, volatility modeling, Value at Risk (VaR), RiskMetrics, historical simulation, assessing VaR methods, back testing and stress testing. Students will learn how to use R to perform risk management tasks.

On completion of the course, students will be able to

1. Analyze and assess financial risks based on appropriate analytical and quantitative techniques.
2. Critically compare and evaluate different risk models and risk measures.
3. Discuss and interpret clearly and effectively the technical details and results of statistics for risk management to both technical and managerial audiences.
4. Work effectively and efficiently in teams.

EVALUATION

Your grade in the course is based on:

• Midterm 30%. • Final 40% • Homework 30%

A. Midterm 30% (75 minutes).

Warning: No make-up midterm exams will be given. Absence from the midterm exam will not be excused except for medical reasons supported by proper documentation submitted no later than 24 hours after the exam is taken (in these cases, your final exam will be re-weighted accordingly, i.e., it will be worth 70% of your course grade).

B. Final Exam 40% (120 minutes).

Warning: If the final exam is missed, you won't pass the course. No make-up final exam will be provided except for medical reasons supported by proper documentation submitted no later than 24 hours after the exam is taken.

C. Homework assignment 30%. There will be 3 Group HW.

Note: 1) There should be 3 persons in each group. Please sign the name on cover page of a hard copy of assignment; otherwise, you will have no record for HWs. The excuses, i.e. "forget to sign", "Other members submit the HW without notice" etc. are not accepted.

2) Peer evaluation. Free riding is not allowed. If you don't join the discussion of HWs, other members of group have the right to submit HW without your permission. In addition, if you have little contribution in the discussion (e.g. Show up without prepara-

tion), your group-mates can rate you low in the peer evaluation, then 15% will be deducted from your HW grade.

GRIEVANCE PROCEDURE

If you disagree with grades that have been assigned to your work, you have the possibility to meet instructors within one week after the grades have been published on the course website. Be specific about what it is that you don't agree with.

ACADEMIC INTEGRITY

Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating of information facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of other groups, or tampering with the academic work of other groups. All exam answers must be your own, and you must not provide any assistance to other students during exams. Current university policy on academic dishonesty is “if a student is discovered cheating however minor the offence, the course grade will appear on the students' record with an X, to show that the grade resulted from cheating.” This X grades stays on the record until graduation. If the student cheats again and “earns” another X grade, the student will be dismissed from the university.