

Hong Kong University of Science and Technology
Department of Economics

ECON 4999P: Macroeconomic and Financial Risk Management (2 units)
2020/21 Fall

Instructor: C.Y. (Eric) NG Email: ecyng@ust.hk Zoom Personal Meeting ID: 630 678 8279 Office hours: Thu 2:30pm – 3:30pm Office: LSK 6016D Teaching Assistant: Dominic PEGLER Email: ecdjpepler@ust.hk Office hours: Tue 4pm – 6pm Office: LSK 6066	Lecture: Wed 9:30am – 12:50pm Zoom Meeting ID: 979 6465 9761 Room: Tutorial: Mon 9:30am – 10:30am Zoom Meeting ID: 974 4343 2119 Room: Course website: https://canvas.ust.hk
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Description and Objectives

Macroeconomic and financial risks refer to unexpected changes in macroeconomic conditions or movements in financial variables that would have an adverse effect on the economic profit or investment return of an entity. If the central bank increases interest rates, it reduces profits for firms which rely on debt financing. If a country devalues its currency or defaults on its sovereign debt, foreign creditors or investors realize investment losses. This course introduces fundamental concepts of macroeconomic and financial risk management. It comprises both quantitative and qualitative tools to identify, measure, and manage risks. Challenges in risk management processes are also addressed.

Prerequisite

(ECON 2103 or ECON 2113) And ECON 2123 And ECON 3334

Assessments

Online Class Attendance	10%	
Case Study Analysis	45%	A short report (maximum 5 pages) on a case study analysis (Submitted by email to me on 19 October)
Online Quiz	45%	Multiple-Choice questions (Online quiz at 10am on 28 October)

Course Outline

1. Foundation of Risk Management (Week 1)

- Identification of Macroeconomic and Financial risks
- Introduction to Risk Measurement and Management tools
- Capital Asset Pricing Model
- Risk-Adjusted Performance Measurement

2. Valuation of Derivative Securities (Weeks 2-4)

- Determination of Forward and Future Prices
- Mechanics and Properties of Options
- Options Pricing: Binomial Model, Black-Scholes-Merton Model, Greek Letters

3. Risk Management Models for Macroeconomic and Financial Risk (Weeks 5-7)

- Value-at-Risk and Stress Testing
- Hedging Strategies Using Futures Contracts
- Risk Metrics and Hedges for Fixed Income Securities
- Managing Foreign Exchange Risk
- Managing Credit Risk
- Managing Operational Risk
- Country and Sovereign Risk Measurement

Course Intended Learning Outcomes (CILOs)

Upon successful completion of this course, students will be able to:

1. Analyze qualitatively and quantitatively economic and financial risk exposures for financial institutions. (CILG 1, 3, 7)
2. Apply risk management tools and procedures to manage economic and financial risks. (CILG 1, 3, 7)
3. Address problems and challenges in the risk management process. (CILG 1, 3, 7)

Teaching Approach

This course is primarily delivered through online lectures and discussion, and case study analysis.

Teaching & Learning Activities	Roles in the Course	Course Learning Outcomes Addressed
Lectures	Explain key concepts and models to students.	1, 2, 3
Online class discussion	Learn to develop critical thinking in analyzing risk-management questions.	1, 2, 3
Case Study Analysis	Learn to apply theories to analyze real case studies.	1, 2, 3

Teaching Materials

- Lecture notes and supplementary readings (downloadable from the course's CANVAS)

Other References (available from HKUST library, either online access or hardcopy)

- Allen, L., Boudoukh, J., Saunders, A., (2004). *Understanding Market, Credit and Operational Risk: The Value at Risk Approach*, New York: Wiley-Blackwell.
- Allen, S., (2013). *Financial Risk Management: A Practitioner's Guide to Managing Market and Credit Risk*, 2nd Edition, New York: John Wiley & Sons.
- Amenc, N., Le Sourd, V., (2003). *Portfolio Theory and Performance Analysis*, West Sussex, England: John Wiley & Sons.
- Damodaran, A. (2015). *Country Risk: Determinants, Measures and Implications - The 2015 Edition*.
- Hull, J., (2014). *Options, Futures, and Other Derivatives*, 9th Edition, New York: Pearson.
- Hull, J., (2015). *Risk Management and Financial Institutions*, 4th Edition, Hoboken, NJ: John Wiley & Sons.
- Lam, J., (2014). *Enterprise Risk Management: From Incentives to Controls*, 2nd Edition, Hoboken, NJ: John Wiley & Sons.
- Miller, M., (2013). *Mathematics and Statistics for Financial Risk Management*, 2nd Edition, Hoboken, NJ: John Wiley & Sons.
- Schroeck, G., (2002). *Risk Management and Value Creation in Financial Institutions*, New York: John Wiley & Sons.
- Tuckman, B. (2011). *Fixed Income Securities*, 3rd Edition, Hoboken, NJ: John Wiley & Sons.

Academic Policy

Dishonesty or plagiarism will not be tolerated. Any student violating HKUST Academic Integrity and Honor Code (<http://www.ust.hk/vpao/integrity>) will be subjected to disciplinary procedure.