

# ECON 4999P: Macroeconomic and Financial Risk Management (2 units)

HKUST Department of Economics

2021/22 Fall

<p><u>Instructor:</u> C-Y (Eric) NG Email: <a href="mailto:ecyng@ust.hk">ecyng@ust.hk</a> Office hours: by appointment Office: LSK 6016D <u>Teaching Assistant:</u> TBA Email: Office hours: by appointment Office: TBA</p>	<p><u>Date:</u> 01-SEP-2021 - 29-OCT-2021 <u>Lecture:</u> Wed &amp; Fri 01:30PM - 02:50PM Room: Rm 6602, Lift 31-32  <u>Tutorial:</u> Fr 10:30AM - 11:20AM Room: Rm 2503, Lift 25-26  Course website: <a href="https://canvas.ust.hk">https://canvas.ust.hk</a></p>
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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

## **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 lectures, class 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
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

## Assessments

Class Attendance	10%	
Case Study Analysis	45%	A short report (maximum 5 pages) on a case study analysis (Email to me by 22 Oct)
Quiz	45%	Multiple-choice questions (to be held on either 27 or 29 Oct)

## Course Outline

### 1. Foundation of Risk Management (Week 1-2)

- 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 2-5)

- 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 5-8)

- 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

## **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.