ECON 5700: Macroeconomic and Financial Risk Management (3 units)

HKUST Department of Economics
2025-26 Spring Term

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Description

Macroeconomic and financial risk is the likelihood that changes in macroeconomic or financial conditions like interest rates, exchange rates, sovereign credit rating, government policy or regulation, political stability, commodity prices, or equity prices will affect the economic profit or investment return of an entity. For instance, if the central bank tightens monetary policy by increasing interest rates, the cost of borrowing will rise and it will lower profit for a firm which relies on debt financing. The rising interest rates also lower the investment return for bondholders. If a country devalues its currency or defaults on its sovereign debt, creditors or investors from foreign countries will realize investment loss. This course introduces fundamental concepts of macroeconomic and financial risk management. It focuses on identification, quantification, and management of various risks. It evaluates and applies different tools and procedures, comprising quantitative measures and qualitative assessment, to measure and manage risk. Problems and challenges that arise in risk management process are also addressed.

Prerequisite

ECON 5280

Assessments

Case Study Analysis*	20%	Group project, due by April 12, 11:59pm
Exam 1**	35%	In-class exam on March 17
Exam 2**	45%	In-class exam on May 5

*Please form a group of 6 members. Email your group information (with student names and ID numbers) to me by Feb 13. Please refer to the file "Case Study on Financial Disaster" (on CANVAS course website: Files/Case Study Analysis) for project requirements.

**An absence from an exam without a valid reason (including sickness or unexpected family emergencies) and relevant documentary proof will result in zero marks. There will be no makeup exam for Exam 1. If you miss it, the weight of Exam 1 (35%) will be added to that of Exam 2. In other words, Exam 2 will then account for 80%.

Course Intended Learning Outcomes (CILOs) and Mapped PILOs

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

1. Analyze qualitatively and quantitatively economic and financial risk exposures for financial institutions. (PILO 4, 6, 10, 12)
2. Apply risk management tools to manage economic and financial risks. (PILO 4, 6, 10, 12)
3. Address problems and challenges in the risk management process. (PILO 4, 12)

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped CILOs	Explanation
Exam	CILOs 1, 2, 3	The exam assesses students' understanding of the risk management concepts discussed in the lectures.
Project	CILOs 1, 2, 3	The project assesses students' ability to apply the risk management concepts to conduct case study analysis.

Final Grade Rubrics

Grade	Short Description	Elaboration
A range	Excellent Performance	Demonstrate a deep understanding of the risk management concepts, methods, and models covered in the course. Exhibit exceptional skills in utilizing them to analyse risk management problems. Excel in the exam and project.
B range (B+, B)	Good Performance	Show a solid grasp of the risk management concepts, methods, and models covered in the course. Demonstrate good skills in utilizing them to analyse risk management problems. Perform well in the exam and project.
B-, C+, C	Marginal Performance	Demonstrate a basic understanding of the risk management concepts, methods, and models covered in the course. Show limited skills in utilizing them to analyse risk management problems. Perform fairly in the exam and project.
F	Fail	Students display a lack of understanding of the course materials, inadequate application of concepts, and unsuccessful completion of exam and project.

Learning Resources

There is no required textbook. We use lecture slides for teaching. All teaching materials, including lecture slides and supplementary reading materials, are downloadable from CANVAS.

The content of the course draws on various sources, including books, academic and professional journals. Please refer to the following list for your reference.

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.

Course AI Policy

The use of Generative AI is permitted for self-learning only, but not for the assessment tasks including the group project and individual exams.

Academic Integrity

Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to Academic Integrity | HKUST - Academic Registry for the University's definition of plagiarism and ways to avoid cheating and plagiarism.

Course Outline

1. Foundation of Risk Management (Weeks 1-3)

- Identification of Macroeconomic and Financial risks
- Introduction to Risk Measurement and Management tools
- Delineating Efficient Portfolios
- Capital Asset Pricing Model
- Risk-Adjusted Performance Measurement
- Multi-Factor Models of Risk and Return

2. Quantitative Methods for Risk Management (Weeks 3-4)

- Time Value of Money
- Probability
- Basic Statistics
- Estimating Volatilities and Correlations for Risk Management

3. Mechanics and Valuation of Financial Products (Weeks 6-9)

- Interest Rates and Valuation of Bonds
- Valuation of Swaps Contracts
- Determination of Forwards and Futures Prices
- Mechanics and Properties of Options
- Options Pricing: Binomial Model, Black-Scholes-Merton Model, Greek Letters

4. Risk Management Models for Macroeconomic and Financial Risk (Weeks 9-12)

- 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