

Duke University Department of Economics
Economics 378
FINANCIAL RISK MANAGEMENT

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Office Hours: Tues n Thurs 1-2:30 pm and by appointment.

Course Description: This course is an introduction to both the techniques and the issues of financial risk management. Every firm faces financial risks, but they are most pronounced for firms in the financial services industry. Therefore, we will focus our analysis on banks and other financial intermediaries. As we shall see during the course, risk management of individual firms has significant consequences for other firms in the same industry as well as for the broader economy. Therefore, regulation is a key driving factor in risk management and the design of risk management policy will be one of the main topics we consider. Of course, the tools of risk management will figure prominently as well. This course will rely heavily on the ideas and techniques you learned in statistics and econometrics courses.

Texts and Software:

Risk Management and Financial Institutions 2nd edition, by John Hull

You must also read the *Wall Street Journal*.

You will also be asked to read *Plight of the Fortune Tellers* by Ricardo Rebonato and *Banking on Basel* by Daniel Tarullo

Course info site: <https://sakai.duke.edu>

Requirements:

This course is intended to function a lot like a seminar—readings will be assigned and I'll expect you to come prepared to discuss what you've read.

Participation will count for one third of your final mark in the course. We'll also cover some technical material, and we will have a few exercises and a quiz or two over this material to keep everyone honest. There will be a lot of writing in the course. These various assignments will count for another third of your final grade.

A final project, due at the end of the semester, will account for the final third of your grade.

I also reserve the right to require other graded, in-class or take-home exercises.

Absences, Late Papers, Statute of Limitations

If you miss class without an excused absence, I will count it against you—a little at first, then rising exponentially. In addition to anything the University says is an excused absence, I also excuse off-campus job interviews **if you give me advanced notice**. If you are called at the last minute and are rushing out the door, simply send me a quick email and you're covered.

I will also try to cut you slack for on-campus interviewing, but if my course time becomes your default interview time, I will penalize you as if the absences are not excused.

All written assignments—problem sets as well as papers—will be considered due at the beginning of class on the day they are to be handed in. **Please hand in hard copies of problem sets and use the digital dropbox in Sakai to send me electronic versions of your papers.** I will not accept late papers. Extensions will be granted only in cases of illness or certifiable family emergency. Be sure to submit the electronic forms or bring your documentation with you.

If you miss a quiz because of an excused absence, you have one week from the date of the quiz to make it up. Makeups can be conducted via email.

Duke University's Academic Honor Code

The Duke Community Standard and Definitions

I. The Duke Community Standard

Duke University is a community of scholars and learners, committed to the principles of honesty, trustworthiness, fairness, and respect for others. Students share with faculty and staff the responsibility for promoting a climate of integrity. As citizens of this community, students are expected to adhere to these fundamental values at all times, in both their academic and non-academic endeavors.

The Pledge

Students affirm their commitment to uphold the values of the Duke University community by signing a pledge that states:

1. I will not lie, cheat, or steal in my academic endeavors, nor will I accept the actions of those who do.
2. I will conduct myself responsibly and honorably in all my activities as a Duke student.

The Reaffirmation

Upon completion of each academic assignment, students will be expected to reaffirm the above commitment by signing this statement: "I have adhered to the Duke Community Standard in completing this assignment." [Student Signature]

II. Definitions

Lying is the expression of a material untruth made with the intent to mislead another or with reckless disregard for the truth of the matter asserted. The material untruth may be uttered or presented, verbally, electronically, or in writing, to another member of the University community (student, faculty or staff). An untruth is material when it relates to or affects in a significant way activities of legitimate concern to the University community.

Cheating is the act of wrongfully using or attempting to use unauthorized materials, information, study aids, or the ideas or work of another in order to gain an unfair advantage. It includes, but is not limited to:

- plagiarism;
- giving unauthorized aid to another student or receiving unauthorized aid from another person on tests, quizzes, assignments or examinations;
- using or consulting unauthorized materials or using unauthorized equipment or devices on tests, quizzes, assignments or examinations;
- using any material portion of a paper or project to fulfill the requirements of more than one course unless the student has received prior permission to do so;
- intentionally commencing work or failing to terminate work on any examination, test, quiz or assignment according to the time constraints imposed; or
- failing to adhere to an instructor's specific directions with respect to the terms of academic integrity or academic honesty.

"Plagiarism" occurs when a student, with intent to deceive or with reckless disregard for proper scholarly procedures, presents any information, ideas or phrasing of another as if they were his or her own and does not give appropriate credit to the original source. Proper scholarly procedures require that all quoted material be identified by quotation marks or indentation on the page, and the source of information and ideas, if from another, must be identified and be attributed to that source. Students are responsible for learning proper scholarly procedure.

The term "assignment" includes any work, required or volunteered, and submitted to a faculty member for review and/or academic credit.

All academic work undertaken by a student must be completed independently unless the faculty member or other responsible authority expressly authorizes collaboration with another.

Stealing is the intentional taking or appropriating of the academic work product of another without consent or permission and with the intent to keep or use the academic work product without the owner's or the rightful possessor's permission.

Responsible and Honorable Conduct means adhering to state and federal laws, residential and academic regulations, and the policies of Duke University as explicated in the *Bulletin of Information and Regulations of Duke University*.

III. Students' Obligation to Report Potential Cases of Academic Dishonesty. Under the Duke Community Standard, students affirm their commitment not to lie, cheat, or steal in academic endeavors, *nor accept the actions of those who do*.

Therefore, upon learning of or witnessing a potential case of academic dishonesty, students are required to provide immediately:

- a signed written statement of the observed behavior to the appropriate faculty member and/or to the Associate Dean for Judicial Affairs (Dean K.C. Wallace, Box 90946, 668-3853); and
- the name or description of the person(s) alleged to have committed the violation.

Students who knowingly do not fulfill this obligation are themselves subject to sanctions.

To this standard, I add the following comments.

Any kind of academic dishonesty is a Code violation, including witnessing a Code violation and not reporting it. The most serious type of academic dishonesty is handing in someone else's work and claiming that it is your own. This includes, in the context of essay writing, plagiarism. It also includes collaborating, *even with a student who is not in this course or section*, on any graded work that is supposed to be done independently. All quizzes and exams are to be done independently, as well as all paper writing. I may allow collaboration on other exercises, and if so, I will explicitly state the type and extent that I will allow. If I do not specify, you are to assume that you must work independently.

Yet another type of academic dishonesty is using work that is not original--that is, recycling your own or other students' work from other courses or sections of this course to be handed in to meet the requirements of this course, or using one piece of work to satisfy the requirements in two different courses simultaneously. In the latter case, I may allow this **if** you clear this with me ahead of time.

I believe that you are honest. Nevertheless, if I see evidence of any academic dishonesty, I will confront it according to the procedures described in the Bulletin of Duke University.

Schedule of Topics and Text Readings

We will be supplementing the textbook for the course with a lot of outside readings that will be posted on Sakai. The textbook readings that correspond to the schedule of topics are listed here, but always check Sakai to see what other readings are required for the next session.

PART ONE: What is Financial Risk Management and Why Didn't We Take It Seriously a Lot Sooner?

Risk and Uncertainty

- Jack Herschleifer and John G. Riley, *The Analytics of Uncertainty and Information*, 1992, pp. 7 – 11
- Neil Doherty, *Integrated Risk Management*, 2000, pp. 3-13
- Rebonato, Preface and Chapters 1-4

Defining Risk Management and Outlining the Process of Risk Management

- J. David Cummins, Richard D. Phillips and Stephen D. Smith, “The Rise of Risk Management,” Federal Reserve Bank of Atlanta *Economic Review*, First Quarter 1998, pp. 30-41.
- Anthony Santomero, “Commercial Bank Risk Management: An Analysis of the Process,” *Journal of Financial Services Research* 1997, v.12, no. 2-3, pp. 83-115. (Sections 1-2)
- Christine M. Cumming and Beverly J. Hirtle, “The Challenges of Risk Management in Diversified Financial Companies,” Federal Reserve Bank of New York *Economic Policy Review*, March 2001, pp. 1-17.

What's the Point of Risk Management?

- Neil Doherty, *Integrated Risk Management*, 2000, pp. 193-233.
- “The Rise of Risk Management,” referenced above
- “The Challenges of Risk Management in Diversified Financial Companies,” referenced above
- Rebonato, Chapter 5
- Robert Merton, “You Have More Capital Than You Think,” *Harvard Business Review*, Nov. 2005, pp. 84-94.

Overview of the Major Financial Risks

- “Commercial Bank Risk Management: An Analysis of the Process,” referenced above, Section 3.
- Jose Lopez, “How Financial Firms Manage Risk,” Federal Reserve Bank of San Francisco Economic Letter, No. 2003-03, February 14, 2003.
- George G. Kaufman, “Banking and Currency Crises and Systemic Risk: Lessons from Recent Events,” Federal Reserve Bank of Chicago Economic Perspectives, pp. 9 – 28.
- Tobias Adrian and Hyun Song Shin, “Liquidity and Financial Contagion,” Banque de France *Financial Stability Review*, Special Issue on Liquidity, No. 11, February 2008, pp. 1 – 7.

The Role of Capital

- “You Have More Capital Than You Think,” referenced above.
- Hull, Chapter 1.
- Tarullo, Chapter 2

Recent Economic History and Risk Management

- John Walter, “The 3-6-3 Rule: An Urban Myth?” Federal Reserve Bank of Richmond Economic Quarterly, Winter 2006, pp. 51-78.
- Robert DeYoung and Tara Rice, “How Do Banks Make Money? The Fallacies of Fee Income,” Federal Reserve Bank of Chicago *Economic Perspectives*, Fourth Quarter 2004, pp. 34-51.
- Marc Saidenberg and Philip Strahan, “Are Banks Still Important for Financing Large Businesses?” Federal Reserve Bank of New York *Current Issues in Economics and Finance*, Vol. 5 No. 13, 1999.
- Robert DeYoung, “Safety, Soundness, and the Evolution of the U.S. Banking Industry,” Federal Reserve Bank of Atlanta *Economic Review*, First and Second Quarters 2007, pp. 41-66.
- Ketil Hviding, “Financial Deregulation,” *The OECD Observer*, June 1995, pp. 30-33.
- Stephen Rousseas, “Can the US Financial System Survive the Revolution?” *Challenge*, March/April 1989, pp. 32-43.
- Bryant Urstadt, “The Blow Up,” *Technology Review*, Nov/Dec 2007, pp. 36-42.

The Role of Regulation in Risk Management

- Edward Kane, “The Interaction of Financial and Regulatory Innovation,” *American Economic Review* vol. 78 no. 2 (May 1988), pp. 328-334.
- Basel Committee on Banking Supervision, “History of the Basel Committee and Its Membership,” January 2007
- Tarullo, Chapter 3
- Patricia Jackson et al, “Capital Requirements and Bank Behavior: The Impact of the Basle Accord,” Basle Committee on Banking Supervision Working Paper 1, April 1999.
- Tarullo, Chapter 4
- Tarullo, Chapter 5

Overview of Risk Management Strategies

- Neil Doherty, *Integrated Risk Management*, 2000, pp. 234 – 282.

PART TWO: Understanding the Major Financial Risks

Market Risk & VaR

- Hull, Chapter 3
- Hull, Chapter 8
- Hull, Chapters 9-10
- Hull, Chapters 12-13
- Rebonato, Chapters 6-8

Interest Rate Risk, Duration, and Convexity

- Hull, Chapter 7
- Numerous readings on Blackboard

Credit Risk, KMV, CreditMetrics, Credit Risk Plus

- Hull, Chapters 14-15

Liquidity and Model Risk

- Hull, Chapters 19-20

Operational Risk

- Hull, Chapter 18

PART THREE: Hedging Tools and Techniques

- Hull, Chapter 5
- Numerous readings on Blackboard

PART FOUR: Macrofinancial Risk Management (Time Permitting)