

UNIVERSITY OF PENNSYLVANIA
 Professors Daniel Gottlieb and Greg Nini
 The Wharton School
Spring 2013

BEPP 305/805: Risk Management

The recent financial crisis and subsequent recession provide ample evidence that failure to properly manage risk can result in disaster. Individuals and firms confront risk in nearly all decisions they make. Individuals face uncertainty in their choice of career, their spending and saving decisions, family choices, and many other facets of life. Similarly, the value that firms create by designing and marketing good products is at risk from a variety sources. The bankruptcy of a key supplier, a sharp rise in the cost of financing, the destruction of an important asset, or a liability suit can quickly squander the value created by a firm. In extreme cases, risky outcomes can bankrupt a firm, as has happened recently to manufacturers of automobile parts and a variety of financial service firms. The events since 2007 provide stark evidence that risk can impose significant costs on individuals, firms, governments, and society as a whole.

BEPP 305/805 explores how individuals and firms assess and evaluate risk, the tools available to successfully manage risk, and real-world frictions that limit the amount of risk-sharing. Our focus is primarily on explaining the products and institutions that we see in the world, which will serve you in making decisions in your future careers and lives.

Course Structure and Requirements. The course is organized around three modular sections. The first module introduces the concept of risk, explores different measures of risk, and presents the theory of optimal decision-making under uncertainty. The second module illustrates how asymmetric information and psychological considerations affect risk management. Then, the third module examines when firms do and do not have a motivation to manage risk and investigates the role of the legal system in corporate risk management.

At the end of each module, there will be a midterm exam covering the material from that module. There is no final exam. Final grades are determined by the three midterm exams (90%) and exercises (10%).

Contact information and office hours for the professors are presented below. There are two TAs for this course. They will be introduced in class and will hold a weekly office hour.

Contact Details and Office Hours

<i>Faculty</i>	Email	Phone	Office	Office Hours
Prof. Gottlieb	dgott@wharton	898-7726	SH-DH 1452	Monday 2:00 – 3:00pm
Prof. Nini	greg30@wharton	898-7770	SH-DH 2439	Monday 2:00 – 3:00pm

Prerequisites. There are no formal prerequisites for the class. However, we recommend this course to students with an introductory knowledge of statistics, microeconomics, and finance, at the level of the Wharton undergraduate classes STAT 101, BPUB 250, and FNCE 100.

Course grading. Final grades for the course are determined by midterm exams and exercises. The *equally-weighted* average of the three midterm exams is worth 90% of the final grade. The remaining 10% is determined by the grades of homework exercises and survey answers turned in before their deadlines.

Add/Drop Deadline. As per Wharton policy, you may drop the course until February 15, 2013. After the drop deadline, you need written permission from an instructor to drop the course. It is the policy of the course instructors that we do not sign petitions to drop the course after the official drop date. Please refer to the following link for more information:

http://spike.wharton.upenn.edu/ugrprogram/policies_forms/acad/withdrawing.cfm

Withdrawal Deadline. As per Wharton policy, the formal withdrawal deadline is March 29, 2013. According to the official policy, “after the tenth week of the semester, withdrawals are not normally permitted.”

Expectations. All students must become familiar with and adhere to the Penn Code of Academic Integrity (<http://www.vpul.upenn.edu/osl/acadint.html>). Class attendance and punctuality are expected. We do not permit laptop computers or other electronic devices to be used during class.

Missing an Exam. Students may miss scheduled examinations only with a University-approved excuse. This includes sickness accompanied with a written medical excuse from a licensed medical practitioner explaining why you cannot attend the exam. Other valid excuses include direct conflicts with another course offered at Penn that cannot be rescheduled as well as a varsity (but not club) sport competition (but not training). In particular, job interviews are *not* a legitimate reason to miss an exam. Missing an exam without a University-approved excuse will result in a zero for the exam. Arriving late to an exam will be treated as missing an exam.

Exam Regrades. To submit a regrade request for an exam, a student must submit the original test sheet, a signed regrade affidavit (see the Canvas for the template), and a written memorandum explaining why the exam should be regraded. Such requests must be submitted within a timely manner after the examination has been returned to the class, as determined by the professor of the module. The entire exam will then be reviewed, and a student’s midterm grade may go down, go up, or remain unchanged at the prerogative of the professor for the module. Students must not mark, make notes on, or alter the exam papers for which they seek a regrade; any such alteration will be seen as a violation of the Code of Academic Integrity.

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Course Material

- Lecture notes, readings, case studies, and problem sets will be posted on the course Canvas. Students are responsible for checking this site regularly for updates.

Module 1. The Theory of Risk (Gottlieb)

Lectures 1 – 8

The first module is an introduction to risk and its measurement. We ask what risk means, how it is measured, and how insurance can allow offloading of risk and reducing potential insolvencies. We then analyze optimal decision-making under risk.

Module 2. Individual and Market Failures (Gottlieb)

Lectures 9 - 16

The second module explores barriers to risk management. First, we study incentive problems that arise because of asymmetric information, under the themes of “moral hazard” and “adverse selection.” Then, we study typical mistakes when making decisions involving risk. We will use a variety of real world examples to illustrate the ideas.

Module 3. Corporate Risk Management (Nini)

Lectures 17 - 25

The third module addresses how firms can manage their own risk. We begin by asking why risk is a problem. Though the answer may seem obvious, it is not. We show that risk not only increases the possibility of future bankruptcy costs, but it also causes conflicts between the various stakeholders which can result in dysfunctional decision-making. Additionally, risk can raise financing costs and lead to the sacrifice of otherwise profitable investment opportunities. Finally, as exemplified by recent accounting scandals, risk management decisions often are made by managers to further their own welfare, rather than that of owners. We examine the legal duties of directors and officers and liabilities toward customers and other parties.

Tentative Course Agenda

Lecture	Day	Date	Topic
1	Thursday	1/10/2013	Overview of Probability
2	Tuesday	1/15/2013	Law of Large Numbers and Risk Pooling
3	Thursday	1/27/2013	Central Limit Theorem and Value at Risk
4	Tuesday	1/22/2013	Expected Utility Theory (1)
5	Thursday	1/24/2013	Expected Utility Theory (2)
6	Tuesday	1/29/2013	Expected Utility Theory (3)
7	Thursday	1/31/2013	Precautionary Saving
8	Tuesday	2/5/2013	Subjective Expected Utility and Ambiguity
NC	Wednesday	2/6/2013	Review Session, 6-8 p.m.
NC	Thursday	2/7/2013	Midterm Exam: Module 1, 6-7:30 p.m.
9	Tuesday	2/12/2013	In-Class Game
10	Thursday	2/14/2013	Adverse Selection (Lemons Problem)
11	Tuesday	2/19/2013	Adverse Selection (Screening) and Reclassification Risk
12	Thursday	2/21/2013	Moral Hazard In Insurance Markets
13	Tuesday	2/26/2013	Principal-Agent Relationships
14	Thursday	2/28/2013	Principal-Agent and Executive Compensation
15	Tuesday	3/12/2013	Insurance Markets and Healthcare Reform
16	Thursday	3/14/2013	Behavioral Economics
NC	Monday	3/18/2013	Review Session, 6-8 p.m.
NC	Tuesday	3/19/2013	Midterm Exam: Module 2, 6-7:30 p.m.

Lecture	Day	Date	Topic
17	Thursday	3/21/2013	Corporate risk management and firm value
18	Tuesday	3/26/2013	Limited liability and real options
19	Thursday	3/28/2013	Motivation for corporate risk management (1)
20	Tuesday	4/2/2013	Motivation for corporate risk management (2)
21	Thursday	4/4/2013	Motivation for corporate risk management (3)
22	Tuesday	4/9/2013	Corporate risk management strategies
23	Thursday	4/11/2013	Corporate legal liability (1)
24	Tuesday	4/16/2013	Corporate legal liability (2)
25	Thursday	4/18/2013	Review
NC	Tuesday	4/23/2013	Midterm Exam: Module 3, 6-7:30 p.m.