



Finance and Insurance

Catastrophe Risk Management

Winter Semester

Institute:	INRIVER
Lecturer:	Patty Born
Assistant:	Leonardo Covis
Weekly hours:	2
Credits	6
Examination:	Paper, presentation, and discussion of another paper
Prerequisites:	
Course Material:	

Course Description & Main Objectives

The Institute for Risk Management and Insurance offers this seminar on catastrophe insurance issues in collaboration with Professor Patricia Born, PhD, from Florida State University. Major catastrophic losses cause severe distortions in insurance markets and the increasing size of economic losses imposes great challenges on both insurers and governments in disaster-prone areas. Many individuals remain uninsured as they underestimate the threat of catastrophic events due to their low frequency or rely on governmental disaster relief.

The seminar aims to familiarize the participants with the most recent developments in the area of catastrophe risk management. This includes the preparation and presentation of a home assignment as well as taking part in discussions during joint sessions, where all topics will be discussed with active involvement of the participants. Scientific research and writing strategies will be conveyed, so that students are empowered to familiarize themselves with a scientific problem and read up on relevant literature. Furthermore, as a basis for further scientific work, students should become familiar with the independent composition of a scientific piece of work.

Each student is required to write a seminar paper, present his/her work in class, and discuss a paper presented by another student. All three aspects plus participation are considered in the grading process.



Lectures Overview/ Course Outline

Kick-off Meeting

Allocation of topics

Submission of research paper

Feedback on paper and assignment of discussion

Presentations and discussion

Literature

Each student is assigned literature individually based on their research topic.



Cluster

Reinsurance

Summer Semester

Institute:	INRIVER
Lecturer:	Peter Liebwein
Assistant:	Leonardo Covis
Weekly hours:	2
Credits	6 for BWL PStO 2018; 3 for BWL PStO 2015 and non-BWL
Examination:	Oral exam and seminar paper
Prerequisites:	
Course Material:	

Course Description & Main Objectives

The lecture provides an overview on insurance companies' risk management with a specific focus on reinsurance. Here, reinsurance is derived as an option to mitigate insurance risks. In the context of reinsurance, proportional and non-proportional types of reinsurance are studied accordingly; some typical evaluation approaches, i.e. pricing approaches, are analyzed for respective types of treaties. Finally a brief overview on alternative risk transfer instruments such as insurance linked securities (ILS) are presented.

Lectures Overview/ Course Outline

- 1. Introduction**
- 2 Risk management for insurers**
 - 2.1 Basics and definitions
 - 2.2 Purpose and goals
 - 2.3 Classification of risk management
 - 2.4 Risk management core process
 - 2.5 Risk management service process
 - 2.6 Types of risk mitigation options

3 "Traditional" reinsurance

- 3.1 Basics and definitions
- 3.2 Purpose and goals
- 3.3 Classification of types
- 3.4 Techniques of proportional r/i
- 3.5 Pricing proportional r/i
- 3.6 Techniques of non-proportional r/i
- 3.7 Pricing non-proportional r/i

4 Alternative risk transfer

- 4.1 Basics and definitions
- 4.2 Purpose and goals
- 4.3 Classification of types
- 4.4 Insurance linked bonds
- 4.5 Further examples

Literature

- Casualty Actuarial Society Enterprise Risk Management Committee: Overview over Enterprise Risk Management, May 2003, pp. 1 26 (<http://www.casact.org/research/erm/overview.pdf>)
- Liebwein, Peter: Risk Models for Capital Adequacy: Applications in the Context of Solvency II and Beyond, in: The Geneva Papers, 2006, 31, pp. 528 550
- Of interest for natural catastrophes in general: Natural catastrophes in 2020: Secondary perils in spotlight, but don't forget primary peril risks, in: Swiss Re (editor) sigma 2/2021
- Liebwein, Peter: Klassische und moderne Formen der Rückversicherung , 3rd edition, Karlsruhe 2018
- Swiss Re: Introduction into reinsurance, 7th edition, Zurich 2002 (English and German)
- Swiss Re: Securitization: New opportunities for insurers and investors, sigma 7/2006 (English and German)