The goal of this intensive Seminar is to provide attendees with a thorough understanding of economic behavior of insurance markets, and, to apply this understanding to practical problems of health insurance. The Seminar begins by analyzing characteristic economic market behavior of consumers and insurance companies (Insurance Market Behavior) and the consequences of their behaviors to the feasibility, profitability, and viability of insurance products (Market Failure). Insurance Market Behavior allows us to identify critical factors that affect common health insurance products, and, to understand how insurance companies design effective Risk Management Tools to compensate for Market Failure. This behavioral approach to understanding insurance and, more particularly, health insurance, is designed to provide Seminar attendees with a useful theoretical framework and practical conceptual tools needed to design and manage health insurance products.

This Seminar is covers intermediate to advanced insurance economics and health insurance concepts. I assume that attendees:

- Have mastered basic actuarial mathematics and/or general insurance concepts;
- Have practical experience in insurance companies, insurance consulting firms, or public healthcare programs; and,
- Have an interest in improving their understanding of insurance economics and learning how to apply this knowledge to specific problems of health insurance product development and portfolio management.

Our lectures, projects, and readings assume only a basic knowledge of health care financing and health insurance products, although familiarity with health care, health care financing and private health insurance products in Croatia and other European countries is helpful.

This is an intensive learning experience, covering a great deal of material. It is equivalent to a full semester at university. A successful attendee will spend as much time in advance preparation and evening work on readings and projects as time spent attending lectures.

Those attendees who choose to become health practitioners will be able to use information from the Seminar as a solid base upon which to build their health insurance
skills. However, additional self-study will be needed to become a competent health actuary or health insurance product manager.

**Preparing for the Seminar**

This Seminar requires advanced preparation. Attendees should first read this entire syllabus. Immediate attention needs to be given to the Supply and Demand for Personal Insurance Problem Set (see Topic 2 for further information) and to key Seminar readings.

**Note on Readings:** Readings and Lecture Resources from this syllabus are found in the Readings folder on the Health Seminar material that you have received. Files containing these materials are identified in this syllabus by the author’s last name and year of publication as indicated in bold following each citation.

All Readings are **not** equally important. Completing all material in the Readings folder prior to class is always helpful, but the amount of material and time constraints can make this difficult. Readings that truly need your attention **before** each class are highlighted in red on the syllabus. I strongly recommend you complete Readings that you were unable to cover before class following the Seminar in order to reinforce what you learn in class. In addition to Readings, the Lecture Resources (they are also in the Readings folder) are materials that expand on our lectures. These materials need not be read before class.

I suggest that you prepare for class as follows.

1. Read Arrow 1971, Pestieau 1994, and Stiglitz 1983 for a background on the economic and social points-of-view that are consistent themes throughout the Seminar.
2. Read whatever material that you find necessary to complete the Supply and Demand for Personal Insurance Problem Set. **Completing this Problem Set in advance of class is very important to your learning experience.**

**Note on Lecture Notes:** A complete set of notes for our lectures is provided to attendees in the Lectures folder. Lecture Notes are identified by their syllabus Topic reference. Please bring your own copy of each day’s Lecture Notes with you to reference and to take notes on during class. If you choose to print the Lecture Notes, I have found that it works best for note taking to print them from PowerPoint as “Handouts” (From “Print What” drop down menu) at 3 slides per page.
Final Exam and Seminar Grade

Following the Seminar you will be asked to write a Final Exam. The Exam will be handed-out on Friday afternoon, and, it is due by the following Monday (May 20) at 16:00.

Your grade for the seminar will be based on an equal weight to the following criteria:

- Class attendance, which is mandatory and will be monitored, and class participation in our discussions,
- Class participation, and
- Answers to the final exam

I expect you to do both the Problem Set and final exam by yourself, with no help from your classmates. I reserve the right to reject any final exam submitted with answers that appear to be done in collaboration with others or copied from materials from previous Health Seminars. I apologize for including this strong warning; but, there have been clear problems with some attendees in previous Seminars.
Insurance Market Behavior and Health Insurance
Seminar Syllabus

Introduction and Seminar Overview
Monday - Opening Session

This brief discussion provides an overview of the Seminar syllabus, its structure and learning objectives. Included are an introduction of the instructor and a brief outline of key topics to be presented during the Seminar.

Readings:
1. Seminar Syllabus (Syllabus)
2. Howard J. Bolnick resumé (Bolnick Resumé)

PART I – INSURANCE MARKET BEHAVIOR

Topic 1: Risk Shifting Using Insurance
Monday – Morning Session

Learning Objectives:
This lecture is an overview of the Insurance Market Behavior structure that we use to understand and analyze risk shifting using insurance. By comparing observed behavior of consumers and insurance companies to concepts of “ideal” private insurance and “ideal” social protection, we discover the fundamental insurance problems that must be understood and resolved for risk shifting using insurance to be feasible. A second key theme introduced in this lecture is the characteristics and problems of risk shifting through public versus private markets. There is a constant tension between proponents of public markets and those favoring private markets. Our objective is to understand the relative performance of each market so that we can better understand when one or the other is the most appropriate solution for covering health risks.

Lecture Presents:
1. Insurance Market Behavior: the unique nature of insurance
2. Structure of “ideal” private and social insurance markets
3. The economic concept of Market Failure and its applicability to insurance
4. Fundamental problems that threaten feasibility and viability of risk shifting using insurance
5. Structural and performance characteristics of public and private markets for insuring health risks
6. When public markets or private markets are most appropriate
Readings:
1. Lecture Notes for **Topic 1 Risk Shifting Using Insurance** (Please bring a copy of this Lecture to class with you. The Lecture is in the Lectures folder in the Seminar materials.)


Lecture Resources (Optional Additional Readings):


**Topic 2: Insurance Market Behavior and Market Failure**

**Monday – Afternoon Session**

**Tuesday – All Day**

**Wednesday – Morning Session**

Learning Objectives:
Behavioral interactions between customers and insurance companies in private health insurance markets (Insurance Market Behavior) cause actual insurance offerings to fall short of an “ideal” and create inherently unstable markets: That is, insurance markets sometimes fail to form and at other times they fail to thrive. Economists refer to these problems as “Market Failure”. Topic 2 is a series of four lectures that explore Insurance Market Behavior and Market Failure. Insurance Market Behavior relates market structure, consumer behavior, and insurance company behavior to explain why Market Failure is so characteristic of insurance markets. We discuss how different public and private market structures create different Market Failure problems. We then learn how insurance companies and public risk bearers develop and use effective Risk Management Tools to compensate for the causes of Market Failure. Lastly, we explore in greater depth the problems that insurance companies face in obtaining useful information to make insurance feasible and the potential negative consequences of some Risk Management Tools.

Lectures Present:
1. How consumers decide whether or not to buy insurance
2. Market structure, consumers, and insurers --- how they interact and behave under various market structures (Insurance Market Behavior)
3. Fundamental problems that cause insurance Market Failures
4. Risk Management Tools and how they provide solutions to insurance Market Failures
5. Feasibility problems that threaten the viability of insurance products
6. Risk classification and risk rating considerations and issues
7. Public social insurance programs, private insurance (individual and group), or mixed markets --- which market structure performs best under various circumstances

Readings:
1. Lecture Notes for:
   a. **Topic 2A** Insurance Purchasing Behavior and Market Failure: Markets with Asymmetric Information
   b. **Topic 2B** Insurance Company Responses to Consumer Behavior
   c. **Topic 2C** Feasibility of Insurance
   d. **Topic 2D** Market Structure and Insurance Market Behavior


Lecture Resources (Optional Additional Readings):


Note: Rothschild and Stiglitz is the seminal economic paper on markets with asymmetrical information. Joseph Stiglitz won the Nobel Prize in Economics in 2001 for this work. It is a very difficult paper to read, but is included here for those of you who are interested in reading this important paper. Ideas developed in the paper are explored using the Problem Set assignment below.

Project: Supply and Demand for Personal Insurance Problem Set. Market Failure and Insurance Market Behavior of risk bearers and insureds is explored in this Problem Set. The Problem Set uses an Excel worksheet with an embedded utility function to solve insurance problems covering utility theory, partial insurance, markets with asymmetrical information, moral hazard, and characteristics of different market structures. All of the materials for this project can be found in the Problem Set folder on your CD.

This Problem Set in an important learning tool covering concepts that are fundamental to an understanding of Market Failure and Insurance Market Behavior. You are expected to complete this assignment before the Seminar begins. Please bring the Problem Set with your answers to class to use as a reference during our discussion of this important material.

The Problem Set takes four to six hours to complete. Attendees not familiar with Utility Theory will need to spend additional time on the foundation readings cited below in order to do this exercise. Feel free to work together with other attendees. Please contact me by email at hbolnick@sbcglobal.net if you find yourself having trouble.

Lecture Topic 2A is based on the Problem Set. I will assume that attendees have successfully completed this assignment, so I use the lecture to build on this important material. Our lecture will be concerned with interpreting results and not with my demonstrating how to find answers to questions. Answers to the Problem Set will be distributed during the lecture.

Materials and foundation resources for this assignment, all of which are in the Problem Set folder, include:

1. Supply and Demand for Personal Insurance Problem Set (Problem Set),
2. An annotated Excel worksheet used to calculate utilities and expected utilities needed to solve problems (Utility Program),

Items 3 through 5 are foundation resources that can be used as needed to provide information on Utility Theory to complete the Problem Set. Readings 3 and 4 should be read first. Reading 5 (Friedman and Savage 1948) is the seminal academic work on this subject.

PART II – HEALTH INSURANCE

Topic 3: Health Insurance Environment
Wednesday – Afternoon Session

Learning Objectives:
Insurance companies writing health insurance, particularly medical expense reimbursement insurance, operate in a very sensitive environment. Health care, health care financing (public and/or private), and health insurance are universally salient political issues. This lecture provides an overview of health care systems, their goals, structures, and key environmental issues.

Lecture Presents:
1. Cost, quality and access as primary goals for health systems
2. Lessons from a historical look at health economics, market structure, and cultural and political implication of health and healthcare
3. Alternative long-term futures for health, healthcare, and healthcare costs
4. Different mixes of public and private responsibility for health care financing
5. Issues to consider in a country-specific context

Readings:
1. Lecture Notes for Topic 3 Health Insurance Environment


Lecture Resources:

4. To Your Health: Diagnosing the State of Healthcare and the Global Private Medical Insurance Industry, SIGMA No. 6 2007; Swiss Re. (SIGMA 2007)
5. Microinsurance – Risk Protection for 4 Billion People, SIGMA No. 6 2010; Swiss Re. (SIGMA 2010)

Wednesday – Afternoon Session

Learning Objectives:
Recent (2003) changes to the U.S. Medicare (old age) health insurance system provide a real world example of the Insurance Market Behavior principles and Market Failure problems discussed throughout this Seminar. This is not a lecture. This is a group analysis and discussion of the issues and possible outcomes from U.S. Federal legislation to use private health insurance companies to underwrite Medicare prescription drug coverage for elderly Americans. Attendees will be asked to discuss and decide if a fictitious insurance company should choose to offer a prescription drug product subject to the terms and conditions prescribed by the new Medicare law.

Readings:
Learning Objectives:
This topic explores various types of private medical expense insurance products, including Voluntary Health Insurance (VHI) products offered in nations with social health insurance systems. Insurance Market Behavior is used to identify critical factors throughout the Actuarial Control Cycle that characterize product design and portfolio management. This analysis emphasizes the importance of considerations other than technical actuarial work to the successful introduction and management of medical expense insurance product portfolios. The lectures include a description of the current state of managed care in the U.S. and its lesson for other countries, and, a discussion of financial management (pricing, reserving, and financial forecasting) for medical expense insurance portfolios.

Lectures Present:
1. A comparison of health insurance products to other insurance products (life insurance, pensions, general insurance)
2. An overview of market considerations particular to health insurance
3. Overview of key private medical expense insurance products from around the world
4. Critical factors to successfully managing a portfolio of medical care expense insurance products
5. An overview of managed care as it has developed in the U.S., its successes and failures, and its potential in Croatia
6. Overview of standard actuarial practices in pricing, reserving and capital adequacy
7. Analysis of reasons for medical expense insurance underwriting cycles

Readings:
1. Lecture Notes for **Topic 5 Medical Expense Insurance – VHI**

Lecture Resources:
7. Doran, Phyllis and Dobson, Robert H., Financial Management of Health Insurance, Society of Actuaries Study Note 8GM-200-00 (Dobson and Doran SoA)
8. Lloyd, John C., Health Reserves, Society of Actuaries Study Note, 8GM-305-00. (Lloyd SoA)
9. Lachance, Michael D., Reinsurance for Accident & Health Insurance, Society of Actuaries Study Note 8GM-304-00. (Lachance SoA)


Note: Lecture Resources 1, 2, 3 and 4 are background readings for attendees not familiar with managed care and managed care organizations.

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A Few Helpful Health Web Resources

1. Society of Actuaries web site: www.soa.org and the Society of Actuaries Health Section on this site (see the Health tab under Sections & Practice Areas). The library on this web site contains full text historical copies of The Record, Transaction of the Society of Actuaries (TSA), TSA Reports, and North American Actuarial Journal. In particular, The Record contains downloadable transcripts of sessions from SoA meetings. This material is extremely helpful to health actuaries. Answers to specific technical questions may often be obtained from actuarial practitioners through the web site discussion forum. The Health Section page is a direct link to the research, publications, and events sponsored by the large group of health actuaries.

2. American Academy of Actuaries web site: www.actuary.org. The site contains Practice Notes, Standard of Practice and other material related to U.S. health actuarial practice. The site also contains a large body of health material under the “Health” link on its home page

3. Actuarial Society of South Africa web site: www.assa.org.za. South Africa is one of the few countries with a large private health insurance market.

4. Faculty and Institute of Actuaries web site: www.actuaries.org.uk. The Health and Care section of the Social Policy Board contains information on private health insurance products such as income protection and long term care.

5. DAV (Germany) web site: www.aktvar.de. Germany is another country with a large private health insurance market. Their web site is in German, which I do not read, so I cannot tell how much useful material is on it.
6. America’s Health Insurance Plans web site: www.ahip.org. AHIP runs excellent basic education courses on health insurance and managed care. While their education materials are not on their web site, someone interested in signing up for courses and ordering education material can do so online. The AHIP web site also contains a pro-private health insurance research and commentary.

7. The International Actuarial Association (IAA) has a Health Section (IAAHS) to meet the needs of health actuaries practicing around the world. Membership in IAAHS is automatically open to all actuaries who are full members of national actuarial associations that are full members of IAA. Membership is also open to individual actuaries and other interested health practitioners who do not meet this automatic membership criterion. Information about IAAHS is on the International Actuarial Association web site (www.actuaries.org) under the “IAAHS (Health)” tab on the home page.