

## **Econ 712: Topics in Applied Microeconomics**

Department of Economics  
University of Pennsylvania  
Fall 2013

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**Class Schedule:** M, W, 1:30-3pm, McNeil 167-168

**Office Hours:** By appointment (send me an e-mail)

### **Course Objectives:**

This course is aimed to provide a comprehensive review of theory, empirical methods and evidence related to the rationale, optimal designs, and effects (both in terms of behavior and welfare) of a variety of social insurance programs such as health insurance (Medicare and Medicaid), unemployment insurance, social security. We will particularly focus on models that capture the interactions between these social insurance programs and the labor market, as well as the interactions between these social insurance programs and private insurance markets.

- The main goal of the course is to get the students familiarized with the topics and be able to develop independent but related research ideas.
- The course will mostly consist of lectures, but will also include a few student presentations.

### **Requirement and Grading:**

1. **(20%)** Occasional homework & active class participation (including paper presentations).
2. **(40%)** A take-home examination. It will be give at the end of the term. Questions will be based on the required material on the reading list and lecture material.
3. **(40%)** A short research paper.

You are expected to pursue some topics covered in class or other related issues (subject to the approval of the instructor). The paper may consist of an empirical and/or theoretical analysis, but should contain some original aspects. You are to complete a two-page research proposal by the end of October, and you have until the end of the semester to complete the paper. Please speak to me if you have difficulty developing a topic, and we will work on it together.

The goal is to get you started on your first research project that can potentially be turned into the third-year paper later.

## Syllabus and Reading List

### 1 Introduction to Social Insurance

What is social insurance? Why does the government get involved in providing insurance? Why do we care about social insurance? What are the key questions we need to address for optimal design of social insurance programs? For an overview, read:

**Martin Feldstein (2005).** “Rethinking Social Insurance.” NBER Working Paper 11250.

**Raj Chetty and Amy Finkelstein (2013).** “Social Insurance: Connecting Theory to Data,” forthcoming Handbook of Public Economics, Volume 5.

### 2 Asymmetric Information: Theory, Tests and Welfare Analysis

The key reason for the government to be involved in providing insurance is the potential market failure as a result of asymmetric information. Here we review the basic theory of how asymmetric information may lead to market failure; and the tests for asymmetric information that are derived from the theory; and finally some recent empirical methods to examine the welfare effects of asymmetric information.

#### 2.1 Theory

The classical readings on the market failure due to asymmetric information is Akerlof’s (1970) lemon’s paper and Rothschild & Stiglitz’s analysis of competitive insurance market (1976). Arrow’s (1963) classical paper makes uncertainty and asymmetric information central focus of the economic analysis of health economics. All these papers assume one dimensional private information in the risk type of the agents.

**George Akerlof (1970).** “The Market for ‘Lemons’: Quality Uncertainty and the Market Mechanism,” Quarterly Journal of Economics (August 1970).

**Michael Rothschild and Joseph Stiglitz (1976).** “Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information”, Quarterly Journal of Economics, 90 (4), 629-650.

**Kenneth Arrow (1963).** “Uncertainty and the Welfare Economics of Medical Care,” American Economic Review Vol. 53, No. 5, 941-973.

Recently there have been some work emphasizing potential private information in other dimensions, such as risk aversion.

**Hemenway, David (1990).** “Propitious Selection.” *Quarterly Journal of Economics*, Vol. 105, 1063-1069.

**de Meza, David and David C. Webb (2001).** “Advantageous Selection in Insurance Markets.” *Rand Journal of Economics*, Vol. 32, No. 2, 249-262.

## 2.2 Empirical Tests of Asymmetric Information.

The most well-known empirical tests of asymmetric information is known as the “positive association property” test, first applied in Chiappori and Salanie (2000) for automobile and Chiappori, Jullien, Salanie and Salanie (2005) showed the robustness of this test. Other applications include Cawley & Philipson (1999) for life insurance market, Finkelstein & McGarry (2006) for Long Term Care insurance market, Fang, Keane & Silverman (2008) for Medigap insurance market.

**Chiappori, Pierre-André and Bernard Salanié (2000).** “Testing for Asymmetric Information in Insurance Markets.” *Journal of Political Economy*, Vol. 108, No. 1, 56-78.

**Chiappori, Pierre-André, Bruno Jullien, Benard Salanié and Francois Salanié (2006).** “Asymmetric Information in Insurance: General Testable Implications.” *Rand Journal of Economics*, Vol. 37, No. 4.

**Cawley, John, and Thomas Philipson (1999).** “An Empirical Examination of Information Barriers to Trade in Insurance.” *American Economic Review*, 89(4): 827-846.

**Finkelstein, Amy and Kathleen McGarry (2006).** “Multiple Dimensions of Private Information: Evidence from the Long-Term Care Insurance Market.” *American Economic Review*, Vol. 96, No. 4, 938-958.

**Fang, Hanming, Michael P. Keane and Dan Silverman (2008).** “Sources of Advantageous Selection: Evidence from the Medigap Insurance Market.” *Journal of Political Economy*, Vol. 116, No. 2, 303-350.

However, “positive correlation property” is not the unique implication from the presence of asymmetric information. The following papers use different angles to examine the presence of asymmetric information.

**Finkelstein, Amy and James Poterba (2004).** “Adverse Selection in Insurance Markets: Policyholder Evidence from the U.K. Annuity Market.” *Journal of Political Economy*, Vol. 112, 183-208.

**Cohen, Alma and Liran Einav (2007).** “Estimating Risk Preferences from Deductible Choice.” *American Economic Review*, Vol. 97, No. 3, 745-788.

## 2.3 Welfare Effects of Asymmetric Information

The frontier of this research area lies in welfare analysis of asymmetric information in insurance context. The following list is almost exhaustive about the existing literature.

**Einav, Liran, Amy Finkelstein and Jonathan Levin (2010).** “Beyond Testing: Empirical Models of Insurance Markets,”

Annual Review of Economics, 2, September 2010, 311-336

**Finkelstein, Amy, Liran Einav and Paul Schrimpf (2007).** “The Welfare Cost of Asymmetric Information: Evidence from the U.K. Annuity Market.” NBER Working Paper 13228.

**Josh Lustig (2007).** “The Welfare Effects of Adverse Selection in Privatized Medicare.” mimeo, Boston University.

**Einav, Liran, Amy Finkelstein and Mark R. Cullen (2008).** “Estimating Welfare in Insurance Markets Using Variation in Prices.” mimeo, Stanford University and MIT.

**Bundorf, Kate, Jonathan Levin and Neale Mahoney (2008).** “Pricing, Matching and Efficiency in Health Plan Choice.” mimeo, Stanford University.

**Cutler, David and Sarah Reber (1998).** “Paying for Health Insurance: The Trade-off between Competition and Adverse Selection,” *Quarterly Journal of Economics*, 113(2), 433-466.

## 2.4 Moral Hazard vs. Adverse Selection: Identification Results

The above papers do not distinguish moral hazard from ex ante adverse selection. The papers below attempted to do so.

**Abbring Jaap, P.A. Chiappori and J. Pinquet (2003).** “Moral Hazard and Dynamic Insurance Data.” *Journal of the European Economic Association*, 1,4, 767-820.

**Abbring J. H., J. J. Heckman, P. A. Chiappori and J. Pinquet (2003).** “Adverse Selection and Moral Hazard In Insurance: Can Dynamic Data Help to Distinguish?” *Journal of the European Economic Association* 1, 512–521.

**Abbring, Jaap, Chiappori, Pierre-André, and Tibor Zavadil (2008).** “Better Safe than Sorry? Ex Ante and Ex Post Moral Hazard in Dynamic Insurance Data.” mimeo, Columbia University.

An interesting emerging literature is a theoretical investigation regarding the general issue of identification of adverse selection in structural models. See the paper below as a starting point.

**Xavier d’Haultfoeuille and Philippe Février (2007).** “Identification and Estimation of Incentive Problems: Adverse Selection.”

### 3 Health Insurance Markets

#### 3.1 Why Do American Spend So Much More on Health Care?

**Hagist, C. and L. Kotlikoff (2009).** “Who’s Going Broke? Comparing Growth in Public Healthcare Expenditure in Ten OECD Countries,” unpublished mimeo.

**Hall, Robert E. and Charles I. Jones (2007).** “The Value of Life and the Rise in Health Spending,” *Quarterly Journal of Economics*, 122, 39-72.

**He, Hui and Kevin X.D. Huang (2012).** “Why Do Americans Spend So Much More in Medical Care than Europeans?” Vanderbilt University.

#### 3.2 Demand for Medical Care

**W. Manning et al. (1987).** “Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment”, *American Economic Review*, 77(3), 251-177.

**Amanda Kowalski (2009).** “Censored Quantile Instrumental Variable Estimates of the Price Elasticity of Expenditure on Medical Care”. NBER Working Paper 15085.

**Finkelstein, Amy et al. (2012).** The Oregon Health Insurance Experiment: Evidence from the First Year. *Quarterly Journal of Economics*.

#### 3.3 Health as a Form of General Human Capital and Implications

**Grossman, Michael (1972).** “On the Concept of Health Capital and the Demand for Health.” *Journal of Political Economy*, Vol. 80, No. 2, 223-255.

**Fang, Hanming and Alessandro Gavazza (2011).** “Dynamic Inefficiencies in an Employment-Based Health-Insurance System: Theory and Evidence,” *American Economic Review*, 101(7), 3047-3077.

#### 3.4 Reclassification Risk

*Reclassification risk is the risk that consumers face in future insurance premiums. There is no long-term health insurance currently in the U.S. This could lead to significant welfare loss.*

**Peter Diamond (1992).** “Organizing the Health Insurance Market,” *Econometrica*, 60, 1233-1254.

**John Cochrane (1995).** “Time Consistent Health Insurance”, *Journal of Political Economy*, 103 (3), 445-473.

**Pashchenko, Svetlana and Ponpoje Porapakkarm (2011).** Welfare Costs of Reclassification Risk in the Health Insurance Market, Uppsala University Working Paper.

### 3.5 Interaction between Health Insurance and Labor Market

**Madrian, Brigitte C. (1994).** “Employment-Based Health Insurance and Job Mobility: Is There Evidence of Job Lock?” *Quarterly Journal of Economics*, Vol. 109, No. 1, 27-54.

**Currie, J. and B. Madrian (1999).** “Health, Health Insurance, and the Labor Market,” in *Handbook of Labor Economics*, Volume 3C: 3309-3416. Amsterdam: North Holland.

**Dey, M. and C. Flinn (2005).** “An Equilibrium Model of Health Insurance Provision and Wage Determination.” *Econometrica* 73, 571-627.

**Dey, M. and C. Flinn (2008).** “Household Search and Health Insurance Coverage.” *Journal of Econometrics*, 145 July, 43-63.

**Bruegemann, Bjoern and Iourii Manovskii (2010).** “Fragility: A Quantitative Analysis of the US Health Insurance System.” University of Pennsylvania Working Paper.

We will digress on a discussion about a variety of labor market models that differ in the nature of the friction, and how wages are determined. Such models are ingredients to study the interaction between social insurance programs and the labor market.

**Rogerson, Richard, Robert Shimer and Randall Wright.** "Search-Theoretic Models Of The Labor Market: A Survey," *Journal of Economic Literature*, 2005, 959-988.

**Burdett, Kenneth and Dale T. Mortensen (1998).** “Wage Differentials, Employer Size, and Unemployment,” *International Economic Review*, 1998, 39, 257-273.

**Hwang, Hae-shin, Mortensen, Dale; Reed, W. Robert (1998).** “Hedonic Wages and Labor Market Search.” *Journal of Labor Economics*. 815-847.

**Mortensen, Dale T. and Christopher A. Pissarides,**“Job Creation and Job Destruction in the Theory of Unemployment,” *Review of Economic Studies*, 1994, 61, 397-415.

**Menzio, Guido and Shouyong Shi (2011).** “Efficient Search on the Job and the Business Cycle.” *Journal of Political Economy*, Vol. 119(3), pages 468 - 510.

### 3.6 Evaluating the Effect of Health Insurance Reform

*Health care reform is one of the most important policy issues in the US. There are numerous angles from which one can examine the issues related to the health care system.*

**Summers, Larry (1989).** Some Simple Economics of Mandated Benefits. *American Economic Review Papers and Proceedings*, May, 177-184.

**Kolstad, J. T., and A. E. Kowalski (2012):** “Mandate-Based Health Reform and the Labor Market: Evidence from the Massachusetts Reform,” NBER Working Paper No. 17933.

**Kolstad, J. T., and A. E. Kowalski (2012).** “Health Reform, Health Insurance, and Selection: Estimating Selection into Health Insurance Using the Massachusetts Health Reform,” *American Economic Review Papers and Proceedings*.

**Aizawa, Naoki and Hanming Fang (2012).** “Equilibrium Labor Market Search and Health Insurance Reform.” Working Paper, University of Pennsylvania.

**Pashchenko, Svetlana and Ponpoje Porapakkarm (2012).** “Quantitative Analysis of Health Insurance Reform: Separating Community Rating from Income Redistribution.” Uppsala University.

### 3.7 Medicare and Medigap Insurance

**Fang, Hanming, Michael P. Keane and Dan Silverman (2008).** “Sources of Advantageous Selection: Evidence from the Medigap Insurance Market.” *Journal of Political Economy*, Vol. 116, No. 2, 303-350.

**Starc, Amanda (2011).** “Insurer Pricing and Consumer Welfare: Evidence from Medigap”. Working Paper, Wharton School, University of Pennsylvania.

**Kim, You S. (2012).** “Consumer Search Friction, Product Differentiation and Adverse Selection in the Medigap Insurance Market.” Working Paper, University of Pennsylvania.

## 4 Unemployment Insurance: Theory and Evidence

For the institutional background related to the unemployment insurance system in the US, see:

**Katherine Baicker, Claudia Goldin, and Larry Katz (1998).** “A Distinctive System: Origins and Impacts of U.S. Unemployment Compensation,” in *The Defining Moment: The Great Depression and the American Economy*, University of Chicago Press, 1998 (NBER Working Paper No. 5889).

### 4.1 Theory and Evidence of Optimal Unemployment Insurance (Static Models)

The static models for optimal unemployment insurance are Baily (1978), extended further by Chetty (2006). Theoretical results on the optimal unemployment insurance are useful only if one has reliable estimates regarding the effect of UI benefit on unemployment duration, and the consumption smoothing from UI. Meyer (1990) and Gruber (1995) are classical studies on these two issues. Meyer (1995) summarizes.

**Baily, Martin (1978).** “Some Aspects of Optimal Unemployment Insurance,” *Journal of Public Economics*, 10, 379-402.

**Raj Chetty (2006).** “A General Formula for the Optimal Level of Social Insurance.” *Journal of Public Economics*, 90: 1879-1901.

**Bruce Meyer (1990).** “Unemployment Insurance and Unemployment Spells,” *Econometrica* 58, 757-782.

**Jonathan Gruber (1997).** “The Consumption Smoothing Benefits of Unemployment Insurance,” *American Economic Review*, 87, 192-205.

**Bruce Meyer (1995).** “Lessons from the U.S. Unemployment Insurance Experiments,” *Journal of Economic Literature*, 33, 91-131.

## 4.2 Theory of Optimal Unemployment Insurance (Dynamic Models)

Dynamic theory of optimal timing and level of unemployment insurance started with Shavell and Weiss (1979). There is also a growing literature dubbed “dynamic public finance” that addresses the mechanism design issues related to unemployment insurance, as well as disability insurance, dynamic optimal taxation etc.

**Steven Shavell and Lawrence Weiss (1979).** “The Optimal Payment of Unemployment Insurance Benefits over Time,” *Journal of Political Economy*, 87, 1347-1362.

**Hugo Hopenhayn and Juan Niccolini (1997).** “Optimal Unemployment Insurance,” *Journal of Political Economy*, 105 (1997), 412-438.

**Cheng Wang and Stephen Williamson (1996).** "Unemployment Insurance with Moral Hazard in a Dynamic Economy," *Carnegie-Rochester Conference Series on Public Policy*, 44, 1-41, 1996.

**Cheng Wang and Stephen Williamson (2002).** “Moral Hazard, Optimal Unemployment Insurance, and Experience Rating.” *Journal of Monetary Economics* 49, 1337-1372, 2002.

**Michael Golosov, Aleh Tsyvinski and Ivan Werning (2006).** “New Dynamic Public Finance: A User’s Guide.” *NBER Macroeconomics Annual 2006*.

**Robert Shimer and Ivan Werning (2007).** “Liquidity and Insurance for the Unemployed” MIT mimeo.

**Robert Shimer and Ivan Werning (2007).** “Reservation Wages and Unemployment Insurance,” *Quarterly Journal of Economics*, 2007, 122 (3): 1145-1185.

**Robert Shimer and Ivan Werning (2007).** “On the Optimal Timing of Benefits with Heterogeneous Workers and Human Capital Depreciation.” mimeo, MIT.

## 4.3 Empirical Evidence of Unemployment Insurance on Worker and Firm Behavior

**B. Meyer (1990).** “Unemployment Insurance and Unemployment Spells,” *Econometrica* 58, 757-782.

**B. Meyer (1995).** “Lessons from the U.S. Unemployment Insurance Experiments,” *Journal of Economic Literature* 33, 91-131.

**D. Blau and P. Robins (1990).** “Job Search Outcomes for the Employed and Unemployed,” *Journal of Political Economy*, 98 (1990), 637-655.

**J. Gruber (1997).** “The Consumption Smoothing Benefits of Unemployment Insurance,” *American Economic Review*, 87, 192-205.



**M. Feldstein (1978).** “The Effect of Unemployment Insurance on Temporary Layoff Unemployment,” *American Economic Review*, 65, 834-846.

**Robert Topel (1983).** “On Layoffs and Unemployment Insurance,” *American Economic Review* 73, 541-559.

#### 4.4 Some New Empirical Studies and Empirical Methods for Welfare Analysis

Here we discuss a couple of new papers by Chetty. Chetty (2008) proposes using sufficient statistics, estimable using non-structural methods, to conduct welfare analysis.

**Raj Chetty (2008).** “Morale Hazard versus Liquidity and Optimal Unemployment Insurance.” *Journal of Political Economy*, Vol. 116, No. 2, 173-234.

**Raj Chetty (2008).** “Sufficient Statistics for Welfare Analysis: A Bridge Between Structural and Reduced-Form Methods”, *Annual Review of Economics*.

## 5 Insurance Markets for the Elderly

### 5.1 Life Insurance

**Fischer, Stanley (1973).** “A Life Cycle Model of Life Insurance Purchases.” *International Economic Review*, 14(1): 132-52.

**Bernheim, B. Douglas; Forni, Lorenzo; Gokhale, Jagadeesh and Kotlikoff, Laurence J. (2003).** “The Mismatch between Life Insurance Holdings and Financial Vulnerabilities: Evidence from the Health and Retirement Study.” *American Economic Review*, 2003, 93(1), pp. 354-65.

**Hong, Jay and Jose Victor Rios-Rull (2012).** Life Insurance and Household Consumption. forthcoming, *American Economic Review*.

**Cawley, John, and Thomas Philipson (1999).** “An Empirical Examination of Information Barriers to Trade in Insurance.” *American Economic Review*, 89(4): 827-846.

**Hendel, Igal and Alessandro Lizzeri (2003).** “The Role of Commitment in Dynamic Contracts: Evidence from Life Insurance.” *Quarterly Journal of Economics*, Vol. 118, No. 1, 299-327.

**Fang, Hanming and Edward Kung (2009).** “How Does the Life Settlement Market Affect the Primary Life Insurance Market?” Working Paper, University of Pennsylvania.

**Fang, Hanming and Edward Kung (2012).** “Why Do Life Insurance Policyholders lapse? Loss of Bequest Motives vs. Liquidity Shocks, Working Paper, University of Pennsylvania.

### 5.2 Annuity Insurance

*A. Theory of the Demand of Annuitization*

**Yaari, Menahem E. (1965).** “Uncertain Lifetime, Life Insurance, and the Theory of the Consumer.” *Review of Economic Studies*, 32(2), pp. 137–50.

**Davidoff, Thomas, Jeffery R. Brown and Peter Diamond (2005).** Annuities and Individual Welfare, *American Economic Review*, December 2005, 1573-1590.

*B. Empirical Facts*

**Bernheim, B. Douglas (1991).** “How Strong Are Bequest Motives? Evidence Based on Estimates of the Demand for Life Insurance and Annuities.” *Journal of Political Economy*, 99(5), pp. 899–927.

**Mitchell, Olivia S.; Poterba, James M.; Warshawsky, Mark and Brown, Jeffrey R. (1999).** “New Evidence on the Money’s Worth of Individual Annuities.” *American Economic Review*, 89(5), pp. 1299–1318.

*C. Solutions to the Annuity Puzzle?*

**Finkelstein, Amy and James Poterba (2004).** “Adverse Selection in Insurance Markets: Policyholder Evidence from the U.K. Annuity Market.” *Journal of Political Economy*, Vol. 112, 183-208.

**Lockwood, Lee (2012).** “Incidental Bequests: Bequest Motives and the Choice to Self-Insure Late-Life Risks.” Working Paper, Northwestern University.

**Lockwood, Lee (2011).** “Bequest Motives and the Annuity Puzzle.” *Review of Economic Dynamics*, forthcoming.

**Pashchenko, Svetlana (2011).** “Accounting for Nonannuitization.” Uppsala University Working Paper.

**G. J. Mailath and G. Noldeke (2008).** Does competitive pricing cause market breakdown under extreme adverse selection? *Journal of Economic Theory*, 140:97–125, 2008.

**Hendren, Nathan (2012).** Private Information and Insurance Rejections, Working Paper, Harvard University, forthcoming, *Econometrica*.

### 5.3 Social Security, Saving and Retirement

**J. Rust and C. Phelan (1997).** “How Social Security and Medicare Affect Retirement Behavior in a World of Incomplete Markets,” *Econometrica* 65, 781-832.

**French, Eric (2005).** “The Effects of Health, Wealth, and Wages on Labor Supply and Retirement Behavior,” *Review of Economic Studies* 72,,: 395-427.

**Palumbo, M.G. (1999).** “Uncertain Medical Expenses and Precautionary Saving Near the End of the Life-Cycle,” *Review of Economic Studies*, 66, 395-421.

**Scholz, John Karl, Ananth Seshadri, and Surachai Khitatrakun (2006)** “Are Americans Saving ‘Optimally’ for Retirement?” *Journal of Political Economy*. August, 607-643.

**Jones, John B., Mariacristina De Nardi and Eric French (2010).** “Why do the Elderly Save? The Role of Medical Expenses”, 39-75.

**French, Eric and John B. Jones (2011).** “The Effects of Health Insurance and Self-Insurance on Retirement Behavior”, *Econometrica* 79(3), 693-732.

#### 5.4 Long Term Care Insurance

**Brown, Jeff and Amy Finkelstein (2008).** “The Interaction of Public and Private Insurance: Medicaid and the Long-Term Insurance Market.” *American Economic Review* 98(3): 1083-1102.

**Brown, Jeff and Amy Finkelstein (2007).** Why Is the Market for Long Term Care Insurance so Small 2007. *Journal of Public Economics* 91(10): 1967-1991.

**Finkelstein, Amy and Kathleen McGarry (2006).** “Multiple Dimensions of Private Information: Evidence from the Long-Term Care Insurance Market.” *American Economic Review*, Vol. 96, No. 4, 938-958.

**Brown, Jeff and Amy Finkelstein (2011).** “Insuring long-term care in the U.S. 2011.” *Journal of Economic Perspectives* 25(4): 119-142.

#### 5.5 Portfolio of Risks and Insurances

**Yogo, Motohiro, Ralph S. J. Koijen and Stijn Van Nieuwerburgh (2010).** “Health and Mortality Delta: Assessing the Welfare Cost of Household Insurance Choice.” Working Paper, Federal Reserve Bank of Minneapolis.

**Yogo, Motohiro (2007).** “Portfolio Choice in Retirement: Health Risk and the Demand for Annuities, Housing, and Risky Assets.” Working Paper, Federal Reserve Bank of Minneapolis.