

**Econ 850: Health Economics**

**Fall 2012**

Professor :	Donna Gilleskie	Course:	Econ 850 Health Economics
Office:	6B Gardner Hall	Time/Day:	9:30 - 10:45 am T, TH
Phone:	966-5372	Place:	Gardner 007
Office Hours:	By appointment	Email:	donna_gilleskie@unc.edu

<b>Grading:</b>	Homework	30 %	3 assignments
	Student Presentation	30 %	Nov 01 - Nov 15 in class; to be scheduled
	Final/Paper	40 %	due Friday, Dec 7
	NO CLASS		Nov 20 (Thanksgiving)

**Purpose:** This course should help you become familiar with and develop a critical understanding of the literature surrounding the consumer side of health economics (e.g., the demand for medical care, the health insurance market, health behaviors, the interaction between health and labor supply, etc.) in an effort to prepare you for your own dissertation research. The emphasis will be on exploring a variety of methods of modeling dynamic health-related behaviors over time and discussing the appropriateness as well as the limitations of different empirical approaches. The primary focus: how do (and how well do) researchers in this field attempt to capture the economic determinants and consequences of health-related behavior?

**Seminars:** Attendance at the Triangle Health Economics Workshop, the Applied Micro Seminar, and the Applied Micro Student Workshop is very much encouraged, especially at this point in your graduate career when you are looking for a field paper and dissertation topic. Have your name put on the listserv or check out the following sites regularly:

[www.unc.edu/the/workshop.htm](http://www.unc.edu/the/workshop.htm)  
[www.unc.edu/mcmanusb/Applied\\_micro\\_seminar.htm](http://www.unc.edu/mcmanusb/Applied_micro_seminar.htm)  
[www.unc.edu/dgill/links/workshopstudent/index.html](http://www.unc.edu/dgill/links/workshopstudent/index.html)  
[econ.duke.edu/events/archive/semester/2012/fall/](http://econ.duke.edu/events/archive/semester/2012/fall/)

## I. Introduction

- (A) Issue: “What is health economics?”
- (B) Issue: “How is the market for medical care different from other markets?”
- (C) Issue: “How do we as economists understand/explain individual health behaviors/outcomes?”

## II. Subject: Demand for Medical Care

- (A) Issue: “What determines this demand?”
  - Response: Derive it from the individual’s optimization problem
- (B) Issue: “What do we do with the zeroes (e.g., zero expenditures)?”
  - Response: Tobit model
  - Response: Rand Health Insurance Experiment - Two-part model/retransformation
  - Comment: *reduced form estimation*, right hand side variables treated as exogenous although some may be endogenous
- (C) Issue: “But many health outcomes are counts.”
  - Response: binary outcome model (e.g., poisson, negative binomial, etc.)
- (D) Issue: “Is there a more general approach?”
  - Response: generalized linear model, Gamma log link model
- (E) Issue: “But how well do econometric models fit the entire distribution of an outcome?”
  - Response: finite mixture model
  - Response: conditional density estimation
  - Response: “Why might we care about this?”
- (F) Issue: “And where is the economic behavior anyway?”
  - Response: a theoretical model of behavior (seminal work and extensions)
  - Response: an estimated model of behavior
  - Comment: *estimation of structural parameters* (e.g., primitives of the optimization problem)

## III. Subject: Demand for Health Insurance

- (A) Issue: “But health insurance IS endogenous?”
  - Response: a theoretical model of supply of and demand for health insurance
  - Response: an empirical model of health insurance and medical care consumption
- (B) Issue: “And what if some health insurance options have similar characteristics?”
  - Response: nested logit model
  - Response: heterogeneous coefficients model
  - Comment: modeling of unobserved individual heterogeneity
- (C) Issue: “Again, where’s the theory?”
  - Response: an estimated model of the insurance decision and medical care utilization
- (D) Issue: “But can the estimation be done more simply?”
  - Response: set of jointly estimated equations
  - Comment: *estimation of structural equations*, joint estimation of a system of demand equations and production functions

IV. Subject: Health, Health insurance, and Employment Outcomes

- (A) Issue: “How do we measure the effect of health insurance on LFP, job mobility?”
- Response: difference in difference model
  - Response: exploitation of cross state variation
  - Response: another example of an approximation model
- (B) Issue: “How can we incorporate health expenses in a retirement model?”
- Response: different approaches in the literature
  - Response: “Why is it so difficult to model health insurance choices in a structural model of employment behavior?”
- (C) Issue: “How do we measure the effect of health on wages?”
- Response: body mass, disability
  - Response: an estimated model of behavior
- (D) Issue: “But what measure of health should be used?”
- Response: objective, subjective, latent measures
  - Response: Why does health matter? Have we answered that question?
- (E) Issue: “And what is the role of the employer?”
- Response: How do insurance offerings by employer/govt affect employee welfare?

V. Subject: Dynamic Consumption of Health “Bads” or Addictive Goods

- (A) Issue: “How do economists model addiction?”
- Response: reduced form model
  - Response: unobserved heterogeneity
  - Response: learning
- (B) Issue: “How do economists model the rationality of individual choices?”
- Response: rational part, dual personality (e.g., hyperbolic discounting)
  - Response: learning and behavior

VI. Subject: Health-related Decisions over the Life-cycle

- (A) Issue: “Past behavior, future consequences?”
- Response: life-cycle model of behavior
- (B) Issue: “How do individuals prepare for uncertain long term care?”
- Response: self-insurance vs. long term care insurance
  - Response: asset accumulation, spend down, living arrangement

VII. Subject: Health and Education

- (A) Issue: “Yes, health and education are correlated. Where do we go from here?”
- Response: unobservables
  - Response: education and smoking decisions
- (B) Issue: “Why does education matter? Where does it enter?”
- Response: an estimated model of behavior

## List of References, Data Sources, and Readings

### Texts for Your Library (not necessary for this class):

Primarily undergraduate texts, but good for reviewing the basics.

- Folland, S., A. Goodman, and M. Stano. 2010. *The Economics of Health and Health Care*, 6th edition, New York: Macmillan Publishing Company.
- Sloan, Frank A. and Chee-Ruey Hsieh. 2012. *Health Economics*, Cambridge: MIT Press.
- Feldstein, Paul J. 2011. *Health Policy Issues: An Economic Perspective*, 5th edition, Chicago: Health Administration Press.
- Sloan, Frank A. and Hirschel Kasper. 2007. *Incentives and Choice in Health Care*, Boston: MIT Press.
- Getzen, Thomas E. 2007. *Health Economics and Financing*, 3rd edition, Wiley.
- Santerre, Rexford E. and Stephen P. Neun. 2007. *Health Economics: Theories, Insights, and Industry Studies*, 4th Edition, Thomson/South Western.
- Feldstein, Paul. 2005. *Health Care Economics*, 6th edition, Thomson Delmar Learning.
- Phelps, Charles. 2003. *Health Economics*, 3rd edition, Addison-Wesley.
- Culyer, Anthony and Joseph P. Newhouse. 2000. *The Handbook of Health Economics*, Elsevier Science. Website: [www.sciencedirect.com/science/handbooks/15740064](http://www.sciencedirect.com/science/handbooks/15740064)

### Sources of Aggregate Health Data:

- Annual expenditure data are collected by the *Centers for Medicare and Medicaid Services* (CMS). Formerly HCFA, the CMS is the federal agency that administers the Medicare, Medicaid and Child Health Insurance Programs and is part of the U.S. Department of Health and Human Services (DHHS).  
Website: [www.cms.hhs.gov/NationalHealthExpendData/](http://www.cms.hhs.gov/NationalHealthExpendData/).
- Additional health data are collected by the *National Center for Health Statistics* (NCHS). NCHS is charged with collecting health statistics and has many surveys, including the annual National Health Interview Survey. NCHS is part of the U.S. Department of Health and Human Services.  
Website: [www.cdc.gov/nchs/](http://www.cdc.gov/nchs/).
- Some data is also gathered by the *Agency for HealthCare Research and Quality* (AHRQ). Formerly AHCPR, AHRQ is part of the U.S. Department of Health and Human Services.  
Website: [www.ahrq.gov/](http://www.ahrq.gov/).

Other Annual Sources of Health Data (published with a lag of one-two years):

- *Statistical Abstract of the United States*  
This is the best initial data source and includes key data from the other sources below. Published by Bureau of the Census, part of the U.S. Department of Commerce, with a two-year delay. e.g. 2011 edition has data for 2009.  
Website: [www.census.gov/](http://www.census.gov/).
- *Health United States*  
Published by National Center for Health Statistics, part of the U.S. Department of Health and Human Services, with a one-year delay.  
Website: [www.cdc.gov/nchs/](http://www.cdc.gov/nchs/).
- *Health Affairs*  
Beginning in 1998 this has an issue that includes an article on HCFA estimates of past annual expenditures and an article on HCFA projections for future expenditures.  
Website: [healthaffairs.org](http://healthaffairs.org).
- *Health Care Financing Review* (HCFA)  
Published by Health Care Finance Administration.  
Website: [www.cms.hhs.gov/](http://www.cms.hhs.gov/).
- *Employee Benefit Research Institute* (EBRI)  
Extensive data on health benefits received by employees.  
Website: [www.ebri.org/](http://www.ebri.org/).
- *Kaiser Family Foundation* (KFF)  
Extensive data on health insurance and the uninsured.  
Website: [www.kff.org/](http://www.kff.org/).

Sources of Individual Health Data:

Cross-Section Data Sets

- *National Health Interview Survey* (NHIS)  
Conducted by the National Center for Health Statistics. About 120,000 persons.  
Website: [www.cdc.gov/nchs/nhis.htm](http://www.cdc.gov/nchs/nhis.htm).
- Many other data sets also conducted by the *National Center for Health Statistics*.  
Website: [www.cdc.gov/nchs/](http://www.cdc.gov/nchs/).

Panel Data Sets

- *Medical Expenditure Panel Survey* (MEPS)  
Beginning 1996, conducted by the Agency for Health Care Research and Quality (AHRQ). This superseded NMES. It has five rounds of interviews over a 2 1/2-year period. Overlapping cohorts. These data are then linked with additional information collected from the respondents' medical providers, employers, and insurance providers.  
Website: [www.meps.ahrq.gov/mepsweb/](http://www.meps.ahrq.gov/mepsweb/).

- *National Medical Expenditure Surveys* (NMES) of 1977 and 1987  
Conducted by the Agency for Health Care Policy Research (AHCPR). Most detailed expenditure data. Five rounds of interviews at 4 month intervals with dated utilization information. 35,000 persons.
- *Medicare Current Beneficiary Survey* (MCBS)  
Claims from CMS. Costs money to acquire. I have access to 1995-2009 data for 5 years.  
Website: [www.cms.gov/MCBS/](http://www.cms.gov/MCBS/).
- *Health and Retirement Survey* (HRS)  
Cohort of individuals aged 51-61 in 1992 followed every two years. Cleaned RAND version of the data is available.  
Website: [hrsonline.isr.umich.edu/](http://hrsonline.isr.umich.edu/).
- *National Longitudinal Study of Adolescent Health* (Add Health)  
Longitudinal study of a nationally representative sample of adolescents in grades 7-12 in the United States during the 1994-95 school year; most recent year 2008.  
Website: [www.cpc.unc.edu/projects/addhealth](http://www.cpc.unc.edu/projects/addhealth).
- *Rand Health Insurance Study* (RHI)  
Major experiment in late 1970's where 7,000 people randomly assigned to different health insurance policies and followed for several years.
- Other panel data sets primarily used in labor economics but with some limited data on health:
  - *Survey of Income Program and Participation* (SIPP), conducted by Census Bureau for BLS
  - *National Longitudinal Surveys* (NLS), conducted by Ohio State University and NORC
  - *Panel Survey of Income Dynamics* (PSID), conducted by University of Michigan
  - *Russian Longitudinal Monitoring Survey* (RLMS), conducted by University of North Carolina

Government Sites:

- *Centers for Medicare and Medicaid Services* (CMS)  
Part of Department of Health and Human Services (DHHS). Runs Medicare and Medicaid. Produces Health Care Financing Review.  
Website: [www.cms.hhs.gov/](http://www.cms.hhs.gov/).
- *National Institutes of Health* (NIH)  
Also in DHHS. Finances most health research.  
Website: [www.nih.gov/](http://www.nih.gov/).
- *Agency for Healthcare Research and Quality* (AHRQ)  
In DHHS. Formerly Agency for Health Care Policy Research (AHCPR). Runs the National Medical Expenditure Surveys. Finances much health economics research.  
Website: [www.ahrq.gov/](http://www.ahrq.gov/).

- *National Center for Health Statistics* (NCHS)  
In DHHS. Runs the National Health Interview Survey and many other surveys. Produces Health U.S.  
Website [www.cdc.gov/nchs/](http://www.cdc.gov/nchs/).

## Suggested Readings for Course Topics:

### I. Introduction (What is Health Economics?)

#### (A) General Issues

1. **Arrow**, K. 1963. "Uncertainty and the Welfare Economics of Medical Care." *American Economic Review* 53: 941-973.  
<http://jhpp1.dukejournals.org/cgi/reprint/26/5/851>
2. **Pauly**, M. 1983. "Is Medical Care Different?" in *Issues in Health Economics*. W. Greenberg (ed.), Washington: Bureau of Economics, FTC.
3. **Pauly**, M. 1988. "Is Medical Care Different? Old Questions, New Answers." *Health Politics, Policy & Law* 13: 227-238.
4. Pauly, M. 1968. "The Economics of Moral Hazard: Comment" *American Economic Review* 58: 531-537.
5. Arrow, K. 1968. "The Economics of Moral Hazard: Further Comment" *American Economic Review* 58: 537-539.
6. Weisbrod, B.A. 1991. "The Health Care Quadrilemma: An Essay on Technological Change, Insurance, Quality of Care, and Cost Containment" *Journal of Economic Perspectives* 29: 523-552.
7. Phelps, C.E. 1992. "Diffusion of Information in Medical Care" *The Journal of Economic Perspectives* 6(3): 23-42.
8. **Hammer** PJ, Haas-Wilson D, Sage WM. 2001. "Kenneth Arrow and the Changing Economics of Health Care: "Why Arrow? Why now?" " *Journal of Health Politics, Policy and Law*, 26(5):835-849.  
<http://jhpp1.dukejournals.org/cgi/reprint/26/5/835> (In addition to this paper, this issue contains a variety of other papers focused on Arrows seminal AER paper.)
9. **Arrow**, K. 2001. "Reflections on the reflections." *Journal of Health Politics, Policy and Law* 26(5):1197-1203.

#### (B) Some Numbers

1. **Chernew**, M., R. Hirth and D. Cutler. 2009. "Increased Spending On Health Care: Long-Term Implications For The Nation." *Health Affairs* 31(8): August. (update to their 2003 Health Affairs article)
2. **Baicker**, K. and D. Goldman. 2011. "Patient Cost-Sharing and Healthcare Spending Growth." *Journal of Economic Perspectives*, 25(2) Spring: 4768.  
[http://works.bepress.com/dana\\_goldman/77](http://works.bepress.com/dana_goldman/77)
3. Meara E, C White C, DM Cutler DM. 2004. "Trends in Medical Spending by Age." *Health Affairs* 23(4): 176-183.
4. Cutler, D., Deacon, and Lleras-Muney. 2006. "The Determinants of Mortality." *Journal of Economic Perspectives*, Summer.
5. Cutler, D. and M. McClellan. 2001. "Is Technological Change in Medicine Worth It?" *Health Affairs*, Sept./Oct.
6. Skinner, J., et al. 2006. "Is Techological Change in Medicine Always Worth It? The Case of Acute Myocardial Infarction." *Health Affairs*, March/April.
7. Cutler, D., S. Rosen, and Vijan. 2006. "The Value of Medical Spending in the United States, 1960-2000." *The New England Journal of Medicine*, August.



## II. The Demand for Medical Care

### (A) Zeroes

1. **Manning**, W., J. Newhouse, N. Duan, E. Keeler, A. Leibowitz, and M. Marquis. 1987. "Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment." *American Economic Review* 77: 251-277.  
<http://www.jstor.org/view/00028282/di950058/95p0039r/0>
2. **Manning**, W. (1998). "The Logged Dependent Variable, Heteroscedasticity, and the Retransformation Problem," *Journal of Health Economics* 17(3): 283-295.
3. **Manning**, W. and J. Mullahy. (2001). "Estimating Log Models: To Transform or Not to Transform," *Journal of Health Economics* 20(4): 461-494.
4. **Mullahy**, J. (1998). "Much Ado About Two: Reconsidering the Retransformation and the Two-part Model in Health Economics," *Journal of Health Economics* 17(3): 247-281.

### (B) Count data

1. Cameron, A. and P. Trivedi. 1998. Regression Analysis of Count Data, Econometric Society Monograph No.30, Cambridge University Press.

### (C) More general approaches

1. Blough, D., C. Madden, M. Hornbrook (1999). "Modeling Risk Using Generalized Linear Models," *Journal of Health Economics* 18(2): 153-171.

### (D) Estimation of the distribution

1. **Fletcher**, J., P. Deb, J. Sindelar. 2009. "Tobacco Use, Taxation and Self Control in Adolescence." NBER Working Paper 15130.
2. **Gilleskie**, D. and T. Mroz. 2004. "A Flexible Approach for Estimating the Effects of Covariates on Health Expenditures." *Journal of Health Economics* 23(2): 391-418.
3. Kanchanachitra, Mana. 2011. "The Sensitivity of Econometric Model Fit under Different Distributional Shapes." Ph.D. Dissertation, UNC-CH.

### (E) Economic Models

1. Becker, G. 1965. "The Theory of the Allocation of Time." *The Economic Journal* 75: 493-517.
2. **Grossman**, M. 1972. The Demand for Health: A Theoretical and Empirical Investigation, New York: Columbia University Press.
3. Grossman, M. 1972. "On the Concept of Health Capital and the Demand for Health." *Journal of Political Economy* 82, 223-255.
4. Kohn, J. 2012. "The Change in Health, Consumption and the Demand for Medical Care." working paper.
5. Galama, T.J. 2011. 'A Contribution to Health Capital Theory, *RAND*, WR-831.
6. Wagstaff, A. 1986. "The Demand for Health: Some New Empirical Evidence." *Journal of Health Economics* 5: 195-233.
7. Ellis, R. 1986. "Rational Behavior in the Presence of Coverage Ceilings and Deductibles." *The Rand Journal of Economics* 17: 158-175.
8. Viscusi, K. and W. Evans. 1990. "Utility Functions that Depend on Health Status: Estimates and Economic Implications." *American Economic Review* 80: 353-374.

9. Ehrlich, I. and H. Churma. 1990. "A Model of the Demand for Longevity and the Value of Life Extension." *Journal of Political Economy* 98(4):761-782.
10. Reid, W. 1998. "Comparative Dynamic Analysis of the Full Grossman Model." *Journal of Health Economics* 17(4):383-425.
11. Goodman, AC, M Stano, JM Tilford JM. 1999. "Applications and Extensions of the Grossman Health Care Model." *Southern Economic Journal* 65:791-806.
12. Leibowitz, A. 2004. "The Demand for Health and Health Concerns after 30 Years." *Journal of Health Economics* 23(4): 663-671.
13. Gilleskie, D. 1998. "A Dynamic Stochastic Model of Medical Care Use and Work Absence." *Econometrica* 66(1): 1-45.
14. Gilleskie, D. 2010. "Work Absences and Doctor Visits during an Illness Episode: The Differential Role of Preferences, Production, and Policies among Men and Women." *Journal of Econometrics* 156(1), p. 148-163.

(F) Solution and Estimation of Dynamic Structural Optimization Problems

1. Eckstein, Z. and K. Wolpin. 1989. "The Specification and Estimation of Dynamic Stochastic Discrete Choice Models." *Journal of Human Resources* 24, 562-598.
2. Aguirregabiria, V. and P. Mira. 2010. "Dynamic Discrete Choice Sturctural Models: A Survey." *Journal of Econometrics* 156: 38-67.
3. **Keane**, M. 2010. "Structural vs. Atheoretic Approaches to Econometrics." *Journal of Econometrics* 156: 3-20. (And read the comments on this article, in the same volume.)

III. The Supply of and the Demand for Health Insurance

(A) Health insurance is endogenous

1. Cutler, D. and D. Wise. 2006. "The US Medical Care System for the Elderly." in Health Care Issues in the United States and Japan, eds. David A. Wise, Naohiro Yashiro. University of Chicago Press.
2. **Rothschild**, M. and F. Stiglitz. 1976. "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information." *Journal of Risk and Insurance* 49: 602-611.
3. **Ehrlich**, I. and G. Becker. 1972. "Market Insurance, Self-Insurance, and Self-Protection." *Journal of Political Economy* 80: 623-648.
4. **Cameron**, A., P. Trivedi, F. Milne, and J. Piggott. 1988. "A Microeconomic Model of the Demand for Health Care and Health Insurance in Australia." *Review of Economic Studies* 55: 85-106.

(B) Discrete choice models of health insurance

1. **Feldman**, R., M. Finch, B. Dowd, and S. Cassou. 1989. "The Demand for Employment-Based Health Insurance." *Journal of Human Resources* 24: 115-142.
2. Marquis, M. Susan and Stephen H. Long. 1995. "Worker demand for health insurance in the non-group market" *Journal of Health Economics* 14(1): 47-63.
3. **Harris**, K. and M. Keane. 1999. "A Model of Health Plan Choices: Inferring Preferences and Perceptions from a Combination of Revealed Preferences and Attitudinal Data." *Journal of Econometrics* 89: 131-157.
4. Bundorf, M. 2002. "Employee Demand for Health Insurance and Employer Health Plan Choices" *Journal of Health Economics* 21: 65-88.

(C) Models of health insurance decisionmaking

1. Keeler, E., J. Newhouse, and C. Phelps. 1977. "Deductibles and the Demand for Medical Care Services: The Theory of a Consumer Facing a Variable Price Schedule under Uncertainty." *Econometrica* 45: 641-655.
2. Gilleskie, D. and T. Mroz. 2004. "A Dynamic Model of Medical Care Consumption During the Health Insurance Year." Working Paper, University of North Carolina.
3. Khwaja, A. 2010. "Estimating Willingness to Pay for Medicare using a Dynamic Life-Cycle Model of Demand for Health Insurance." *Journal of Econometrics* 156(1), p. 130-147.

(D) Approximation models of health insurance, utilization, and health outcomes

1. Yang, Zhou, Donna Gilleskie, and Edward C. Norton. 2009. "Health Insurance, Medical Care, and Health Outcomes: A Model of Elderly Health Dynamics" *Journal of Human Resources* 44(1), p. 47-114.
2. Mroz, T. 1999. "Discrete Factor Approximations in Simultaneous Equation Models: Estimating the Impact of a Dummy Endogenous Variable on a Continuous Outcome," *Journal of Econometrics* 92: 233-274.

IV. Role of Health and Health Insurance in Employment Decisions/Outcomes

(A) Job Mobility

1. Cooper, P. and A. Monheit. 1993. "Does Employment-Related Health Insurance Inhibit Job Mobility?" *Inquiry* 30: 400-416.
2. Monheit A. and P. Cooper. 1994. "Health Insurance and Job Mobility: Theory and Evidence." *Industrial and Labor Relations Review* 48: 68-85.
3. Madrian, B. 1994. "Employment-based Health Insurance and Job Mobility: Is there Evidence of Job-Lock?" *The Quarterly Journal of Economics* 109(1): 27-54.
4. Gruber, J. and B. Madrian. 1995. "Health Insurance and Job Mobility: The Effects of Public Policy on Job-Lock." *Industrial and Labor Relations Review* 48: 86-101.
5. Buchmeuller T. and R. Valletta. 1996. "The Effects of Employer-provided Health Insurance on Worker Mobility." *Industrial and Labor Relations Review* 49: 439-455.
6. Kapur, K. 1998. "The Impact of Health on Job Mobility: A Measure of Job Lock." *Industrial and Labor Relations Review* 51: 282-298.
7. Gilleskie, D. and B. Lutz. 2002. "The Impact of Employer-Provided Health Insurance on Dynamic Employment Transitions," *Journal of Human Resources*, 37(1), Winter 2002: 129-162.

(B) Retirement and Health Insurance

1. Gruber, J. and B. Madrian. 1995. "Health Insurance Availability and the Retirement Decision." *American Economic Review* 85, 938-948.
2. Blau, D. and D. Gilleskie. 2001. "The Effect of Health on Employment Transitions of Older Men." *Research in Labor Economics*, vol. 20, JAI Press.
3. Blau, D. and D. Gilleskie. 2001. "Retiree Health Insurance and the Labor Force Behavior of Older Men in the 1990's," *Review of Economics and Statistics*, 83(1), February 2001: 64-80.
4. Gustman, A. and T. Steinmeier. 1994. "Employer-Provided Health Insurance and Retirement Behavior," *Industrial and Labor Relations Review* 48 (October): 124-140.

5. Lumsdaine, R.L., J.H. Stock, and D.A. Wise. 1994. "Pension Plan Provisions and Retirement: Men and Women, Medicare, and Models," in D.A. Wise (ed.) *Studies in the Economics of Aging*, Chicago: University of Chicago Press.
6. **Rust**, J. and C. Phelan. 1997. "How Social Security and Medicare Affect Retirement Behavior in a World of Incomplete Markets," *Econometrica* 65: 781-831.
7. **Blau**, D. and D. Gilleskie. 2008. "The Role of Retiree Health Insurance in the Employment Behavior of Older Men" *International Economic Review*, 49(2): 475-514.
8. Blau, D. and D. Gilleskie. 2006. "Health Insurance and Retirement of Married Couples" *Journal of Applied Econometrics* 21(7): 935-953.
9. **Dey**, M. and C. Flinn. 2005. "An Equilibrium Model of Health Insurance Provision and Wage Determination" *Econometrica* 73(2): 571-627.

(C) Wages

1. **Cawley**, J. 2004. "The Impact of Obesity on Wages." *J. Human Resources* 39(2): 451-474.
2. **Tosini**, N. 2008. "The Socioeconomic Determinants and Consequences of Womens Body Mass." Ph.D. Dissertation, Univ of Pennsylvania.
3. **Gilleskie**, D., E. Han, and E. Norton. 2011. "Untangling the Direct and Indirect Effects of Body Mass on Earnings Using Longitudinal Data." Working paper.
4. **Gilleskie**, D. and D. Whalen. 2011. "Disability, Employment Transitions, and Wages: The Role of Employer and Occupational Tenure." Working paper.

(D) Health: measurement and role?

1. **Bound**, J., T. Stinebrickner, and T. Waidmann. 2010. "Health, Economic Resources, and the Work Decisions of Older Men." *Journal of Econometrics* 156: 106-129.
2. **Greene**, W., M. Harris, and B. Hollingsworth. 2012. "Inflated Responses in Measures of Self-Assessed Health." working paper.

(E) Role of the employer (i.e., how to model health insurance options)

1. **Kowalski**, A. 2011. "Estimating the Tradeoff Between Risk Protection and Moral Hazard with a Nonlinear Budget Set Model of Health Insurance." Working paper.
2. **Fang, H.**, M. Keane, and D. Silverman. 2008. "Sources of Advantageous Selection: Evidence from the Medigap Insurance Market." *Journal of Political Economy* 116 (2): 303-350.
3. **Fang, H.** and A. Gavazza. 2010. "Dynamic Inefficiencies in an Employment-Based Health Insurance System: Theory and Evidence." *American Economic Review*.

V. Dynamic Consumption of Addictive Goods

(A) Rational Addiction?

1. **Gruber**, J. Risky Behavior Among Youths: An Economic Analysis, University of Chicago Press, 2001.
2. **Becker**, G., M. Grossman, and K. Murphy. 1994. "An Empirical Analysis of Cigarette Addiction" *American Economic Review*, 84: 396-418.
3. Chaloupka, F. 1991. "Rational Addictive Behavior and Cigarette Smoking," *Journal of Political Economy*, 99: 722-742.

4. Gruber, J. 2001. "Youth Smoking in the 1990's: Why Did it Rise and What are the Long Run Implications?" *American Economic Review* 91(2): 85-90.
5. **Gilleskie**, D. and K. Strumpf. 2005. "The Behavioral Dynamics of Youth Smoking" *Journal of Human Resources* 40(4): 822-866.
6. Christelis, D. and A. Sanz de Galdeano. Forthcoming. "Smoking Persistence Across Countries: a Panel Data Analysis." *Journal of Health Economics*.
7. Coppejans, M., D. Gilleskie, H. Sieg, and K. Strumpf. 2007. "Consumer Demand Under Price Uncertainty: Empirical Evidence from the Market for Cigarettes." *Review of Economics and Statistics* 89(3): 510-521.
8. **Darden**, M. 2011. "Smoking, Expectations, and Health: A Dynamic Stochastic Model of Lifetime Smoking Behavior." Ph.D. Dissertation, UNC-CH.

(B) Other theories?

1. Gruber, J. and B. Köszegi. 2001. "Is Addiction 'Rational'? Theory and Evidence," *Quarterly Journal of Economics* 116: 1261-1303.
2. Crawford, G. and M. Shum. 2005. "Uncertainty and Learning in Pharmaceutical Demand" *Econometrica* 73(4): 1137-1173.
3. Chan, Tat and Barton Hamilton. 2006. "Learning, Private Information, and the Economic Evaluation of Randomized Experiments." *Journal of Political Economy* 114(6): 997-1040.