14.661 Labor Economics I

Staff:

Instructors: Parag Pathak, E52-391C, ppathak@mit.edu; Daron Acemoglu, E51-380B, daron@mit.edu Teaching fellow: Chris Walters, crwalt@mit.edu

Logistics:

Two lectures per week on Tuesday and Thursday from 10:30-12pm in E51-385 Pathak begins on 9/8/2011 and ends 10/25/2011 Acemoglu begins on 10/27/2011 and ends 12/14/2011

Description:

This is a graduate course in labor economics, appropriate for PhD students in the Department of Economics and other students with permission of the instructor. Pathak and Acemoglu split the fall semester. In the spring, Professors David Autor and Heidi Williams teach Labor Economics II.

The aim is to acquaint students with traditional topics and to encourage the development of independent research interests. The syllabus contains readings of two sorts. The first will be emphasized in lectures. Other readings may be discussed briefly, but are also listed as a guide to the literature.

Students who are interested in pursuing research in labor economics are *strongly* encouraged to the attend the weekly Labor Economics student workshop, which meets on Tuesdays from 12:00-1:00pm, the joint MIT Labor/Public Finance seminar in the Fall on Mondays from 4-5:30pm, and the Econ-Sloan Applied Microeconomics seminar which meets in the Spring.

A Stellar website has readings, assignments, and recitation material.

Course Materials:

Working labor economists should have easy access to the following resources:

- Ashenfelter, Orley and David Card (2010): Handbook of Labor Economics, Volumes 4A and 4B.
- Angrist, Joshua and Jorn-Steffen Pischke (2009): Mostly Harmless Econometrics: An Empiricist's Companion, Princeton University Press.
- Deaton, Angus and John Muelbauer (1980): Economics and Consumer Behavior, Cambridge University Press.
- Borjas, George (2010): Labor Economics, 5th Edition, McGraw Hill-Irwin.

Grading and Requirements:

Your grade in this course depends on three parts: final exam in December covering material from both quarters (40%), 6 problem sets (40%), and an empirical project (20%) involving replication and extension of published work.

FIRST PART - PATHAK

Part 1: Labor Supply

• Static Model

- *Heckman, James (1974): "Shadow Prices, Market Wages, and Labor Supply." *Econometrica*, 42: 679-694.
- *Ashenfelter, Orley (1983): "Determining Participation in Income-Tested Social Programs." Journal of the American Statistical Association, 78, 517-525.
- *Mroz, Thomas (1986): "The Sensitivity of an Empirical Model of Married Women's Hours of Work to Economic and Statistical Assumptions." *Econometrica*, 55(4), 765-799.
- *Ashenfelter, Orley and Michael Plant (1990): "Non-parametric estimates of the labor supply effects of negative income tax programs." Journal of Labor Economics, 8, S397-S415.
- *Dickens, William and Shelly Lundberg (1993): "Labor Supply with Hours Restrictions." International Economic Review, 34(1), 169-192.
- *Imbens, Guido, Donald Rubin, and Bruce Sacerdote (2001): "Estimating the Effect of Unearned Income on Labor Supply: Evidence from a Survey of Lottery Players." American Economic Review, 91(4), 778-794.
- *Blundell, Richard, Alan Duncan, and Costas Meghir (1998): "Estimating Labor Supply Responses Using Tax Reforms." *Econometrica*, 66, 827-861.
- Ashenfelter, Orley and James Heckman (1974): "Estimation of Income and Substitution Effects in a Model of Family Labor Supply." *Econometrica*, 42(1), 73-86.
- Borjas, George (1980): "The Relationship between Wages and Weekly Hours of Work: The Role of Division Bias." *Journal of Human Resources*, 15(3), 409-423.
- Eissa, Nada and Jeffrey Liebman (1996). "Labor Supply Responses to the Earned Income Tax Credit." Quarterly Journal of Economics, 111(2), 605-637.
- Devereux, Paul (2007): "Small-sample bias in synthetic cohort models of labor supply." Journal of Applied Econometrics, 22(4), 839-848.
- Angrist, Josha D. (1991): "Grouped-data estimation and testing in simple labor-supply models." *Journal of Econometrics*, 47(2-3): 243-266.
- Hausman, Jerry (1985): "The Econometrics of Nonlinear Budget Sets." *Econometrica*, 1255-1282.
- Heim, Bradley and Bruce Meyer (2003): "Structural Labor Supply Models when Budget Constraints are Nonlinear." Northwestern University, working paper.
- Chetty, Raj (2011): "Bounds on Elasticities with Optimization Frictions: A Synthesis of Micro and Macro Evidence on Labor Supply." NBER Working paper 15616.

• Dynamics

- *Abowd, John and David Card (1987): "Intertemporal Labor Supply and Long-Term Employment Contracts." *American Economic Review*, 77(1): 50-68.

- *Abowd, John and David Card (1989): "On Covariance Structure of Earnings and Hours Changes" *Econometrica*, 57(2): 411-445.
- *Eckstein, Zvi and Ken Wolpin (1989): "Dynamic Labour Force Participation of Married Women and Endogenous Work Experience." Review of Economic Studies, 56(3): 375-390.
- *Card, David (1994): "Intertemporal Labor Supply: An Assessment." In C. Sims, ed. Advances in Econometrics, vol. II, Cambridge University Press, 49-78.
- *Blundell, Richard, Thomas MaCurdy, and Costas Meghir (2007): "Labor Supply Models: Unobserved Heterogeneity, Nonparticipation, and Dynamics." Chapter 69 in Handbook of Econometrics, ed. J. J. Heckman and E. Leamer, Volume 6
- *Fehr, Ernst and Lorenz Goette (2007): "Do Workers Work More if Wages are High? Evidence from a Randomized Field Experiment." American Economic Review, 97(1): 298-317
- Lucas, Robert E. and L. Rapping (1969): "Real Wages, Employment and Inflation." *Journal of Political Economy*, 77(5), 721-764.
- MaCurdy, Thomas (1981): "An Empirical Model of Labor Supply in a Life-Cycle Setting." Journal of Political Economy, 89(6), 1059-1085.
- Altonji, Joseph (1986): "Intertemporal Substitution in Labor Supply: Evidence from Micro Data." *Journal of Political Economy*, 94(3), S176-S215.
- Card, David and Dean Hyslop (2005): "Estimating the Effects of a Time-Limited Earnings Subsidy for Welfare-Leavers." Econometrica, 73, 1723-1770.
- Ham, J.C. and K.T. Reilly (2002): "Testing Intertemporal Substitution, Implicit Contrast and Hours Restriction Models of Labor Market Using Micro Data." American Economic Review, 92(4): 905-927.
- Altonji, Joseph and L. M. Segal (1996): "Small Sample Bias in GMM Estimation of Covariance Structures." Journal of Business and Economic Statistics, 14, 353-366.
- Geweke, John and Michael Keane (2000): "An empirical analysis of earnings dynamics among men in the PSID: 1968-1989." *Journal of Econometrics*, 96(2), 293-356.

• Household and family models

- *Becker, Gary (1973): "A Theory of Marriage: Part I." Journal of Political Economy, 81(4), 813-846.
- *Chiaporri, Pierre-Andre, Bernard Fortin, and Guy Lacroix (2001): "Marriage Market, Divorce Legislation, and Household Labor Supply." Journal of Political Economy, 110(1), 37-72.
- *Choo, Eugene and Aloysius Siow (2006): "Who Marries Whom and Why." Journal of Political Economy, 114(1): 175-201.
- Becker, Gary (1981): A Treatise on the Family, Cambridge: Harvard University Press.
- Chiaporri, Pierre-Andre and Yoram Weiss (2009): "Investment in Schooling and the Marriage Market." *American Economic Review*, 99(5), 1689-1713.
- Chiaporri, Pierre-Andre and Sonia Oreffice (2008): "Birth Control and Female Empowerment: An Equilibrium Analysis." *Journal of Political Economy*, 116(1), 113-140.

- Goldin, Claudia and Lawrence Katz (2002): "The Power of the Pill: Oral Contraceptives and Women's Career and Marriage Decisions." Journal of Political Economy, 110(4): 730-770
- Angrist, Joshua D. and William N. Evans (1998): "Children and their Parents' Labor Supply: Evidence from Exogenous Variation in Family Size." American Economic Review, 88(3), 450-477.
- Browning, Martin, Pierre-Andre Chiappori, and Yoram Weiss (2011): Family Economics,
 Unpublished manuscript

Part 2: Labor Demand

• Foundations

- *Hamermesh, Daniel (1993): <u>Labor Demand</u>, Princeton University Press (chapters 2 and 6)
- *Welch, Finis (1969): "Linear Synthesis of Skill Distributions." Journal of Human Resources, 311-329.
- *Sattinger, Michael (1979): "Differential Rents and the Distribution of Earnings." Oxford Economic Papers, 31(1)
- *Rosen, Sherwin (1983): "A Note on Aggregation of Skills and Labor Quality." Journal of Human Resources, 425-431.
- *Heckman, James and Jose Scheinkman (1987): "The Importance of Bundling in a Gorman-Lancaster Model of Earnings." Review of Economic Studies, 54(2): 243-255.
- *Li, Hao and S. Rosen (1998): "Unraveling in Matching Markets." *American Economic Review*, 88(3).
- Cahuc, Pierre and A. Zyllerberg (2004): <u>Labor Economics</u>, MIT Press (chapter 4)
- Card, David and Thomas Lemieux (2001): "Can Falling Supply Explain the Rising Return to College for Younger Men? A Cohort-Based Analysis." Quarterly Journal of Economics, 116, 705-746.

• Immigration

- *Card, David (1990): "The Impact of the Mariel Boatlift on the Miami Labor Market." Industrial and Labor Relations Review, 43 (January 1990), 245-257.
- *Borjas, George (2003): "The Labor Demand Curve IS Downward Sloping: Re-examining the Impact of Immigration on Labor Market." Quarterly Journal of Economics
- *Card, David (2009): "Immigration and Inequality." American Economic Review, 99(2), 1-21.
- Card, David (2005): "Is the New Immigration Really So Bad?" Economic Journal.
- Borjas, George (1987): "Self-Selection and the Earnings of Immigrants." American Economic Review, 77, 531-553.

- Heckman, James and Bo Honore (1990): "The Empirical Contents of the Roy Model." Econometrica, 58(5), 1121-1149.

• Unions

- *Brown, J and O. Ashenfelter (1986): "Testing the Efficiency of Employment Contracts." Journal of Political Economy, 94, S40-S87.
- *Card, David (1990): "Unexpected Inflation, Real Wages, and Employment Determination in Union Contracts." American Economic Review, 80(4), 669-688.
- *Holmes, Thomas (1998): "The Effects of State Policies on the Location of Industry: Evidence from State Borders." *Journal of Political Economy*, 106 (4): 667-705.
- *DiNardo, John and David Lee (2004): "Economic Impact of New Unionization on Private Sector Employers: 1984-2001." Quarterly Journal of Economics, 119: 1383-1442.
- *Mas, Alex (2006): "Pay, Reference Points, and Police Performance." Quarterly Journal of Economics, 71(3): 783-821.
- Lewis, H. Gregg (1986): Union Relative Wage Effects: A Survey. Chicago: University of Chicago
- Card, David (1996): "The Effect of Unions on the Structure of Wages: A Longitudinal Analysis, *Econometrica*, 64 (4), 957-979.
- Lee, David and Alex Mas (2009): "Long-run Impacts of Unions on Firms: New Evidence from Financial Markets." NBER Working Paper 14709.
- Frandsen, Brigham (2011): "Union Wage Setting and the Distribution of Employee Earnings: Evidence from Certification Elections." MIT Working Paper.

• MINIMUM WAGES (NOT COVERED THIS YEAR)

- Stigler, George (1946): "The Economics of Minimum Wage Legislation." American Economic Review, 36(3): 358-365.
- Brown, Charles (1999): "Minimum Wages, Employment and the Distribution of Income."
 in O. Ashenfleter and D. Card, eds., Handbook of Labor Economics, volume 3B.
- Card, David (1992): "Using Regional Variation to Estimate the Effects of the Federal Minimum Wage." Industrial and Labor Relations Review, October, 22-37.
- Card, David and A. Krueger (1995): Myth and Measurement: The New Economics of the Minimum Wage. Princeton University Press.
- Kennan, John (1995): "The Elusive Effects of Minimum Wages." Journal of Economic Literature, 33(4), 1949-1965.

Part 3: Human Capital

A. Basics and Estimating the Returns to Schooling

- *Ben-Porath, Yoram (1967): "The Production of Human Capital and the Lifecycle of Earnings." *Journal of Political Economy*, 75, 352-365.

- *Angrist, Joshua and Alan Krueger (1991): "Does Compulsory School Attendance Affect Schooling and Earnings?" Quarterly Journal of Economics, 106 (November), 979-1015.
- *Card, David (2001): "Estimating the Return to Schooling: Progress on Some Persistent Econometric Problems." *Econometrica*, 69 (September), 1129-1160.
- *Lemieux, Thomas (2006): "The Mincer Equation Thirty Years after Schooling, Experience, and Earnings." in S. Grossbard-Shechtman (ed.) Jacob Mincer, A Pioneer of Modern Labor Economics, Springer Verlag.
- *Cunha, Flavio and James Heckman (2007): "The Technology of Skill Formation." American Economic Review, 97 (May), 31-47.
- Mincer, Jacob (1974): Schooling, Experience, and Earnings. New York: Columbia University Press, for the NBER
- Becker, Gary (1993): Human Capital. Third Edition, Chicago: University of Chicago Press
- Bound, John, D. Jaeger, and R. Baker (1995): "Problems with Instrumental Variables Estimation when the Correlation between the Instruments and the Endogenous Explanatory Variable is Weak." Journal of the American Statistical Association, 90.430 (June), 443-450.
- Ashenfelter, Orley and Cecila Rouse (1998): "Income, Schooling and Ability: Evidence from a New Sample of Identical Twins." Quarterly Journal of Economics, 113 (February), 253-284.
- Manski, Charles and John Pepper (2000): "Monotone Instrumental Variables with an Application to the Returns to Schooling." *Econometrica*, 68, 997-1013.
- Duflo, Esther (2001): "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment." American Economic Review, 91 (December), 795-813.
- Belzil, Christian and Jörgen Hansen (2002): "Unobserved Ability and the Return to Schooling." Econometrica, 70, 2075-2091.
- Angrist, Joshua D., and Daron Acemoglu (2000): "How Large are the External Returns to Education: Evidence from Compulsory Schooling Laws." NBER Macroannual
- Moretti, Enrico (2004): "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data." Journal of Econometrics, 121(1-2).
- Keane, Michael and Ken Wolpin (1997): "The Career Decisions of Young Men." *Journal of Political Economy*, 105, 473-522.
- Eckstein, Zvi and Ken Wolpin (1999): "Youth Employment and Academic Performance in High school." *Econometrica*, 67, 1295-1339.
- Cameron, S. and Chris Taber (2004): "Estimation of Educational Borrowing Constraints Using Returns to Schooling." *Journal of Political Economy*, 112 (February), 132-182.
- Heckman, James J. and Alan Krueger (2005): Inequality in America: What Role for Human Capital Policies?, MIT Press.
- B. EVALUATING THE IMPACTS OF SCHOOL POLICIES ON STUDENT OUTCOMES / PROGRAM EVAL-UATION PROBLEM
 - Instrumental Variables, LATE, and 2SLS

- * *Angrist, Joshua D., Guido Imbens, and Donald Rubin (1996): "Identification of Causal Effects Using Instrumental Variables." *Journal of the American Statistical Association*, 91.434 (June), 444-455.
- * *Angrist, Joshua D. and Jorn Pischke (2008): Mostly Harmless Econometrics, esp. chs. 2, 4, 5, and 6
- * *Krueger, Alan B. (1999): "Experimental Estimates of Education Production Functions." Quarterly Journal of Economics, 114 (May), 497-532.
- * *Chetty, R., J. Friedman, N. Hilger, Diane Schanzenbach, E. Saez, and D. Yagan (2011): "How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project Star." Quarterly Journal of Economics
- * *Abdulkadiroğlu, Atila, Josh Angrist, Susan Dynarski, Thomas Kane, and Parag Pathak (2011): "Accountability and Flexibility in Public Schools: Evidence from Boston's Charters and Pilots." *Quarterly Journal of Economics*, 126(2): 699-748.
- * Altonji, Joseph, Todd Elder, and Chris Taber (2005): "Selection on Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools." *Journal of Political Economy*, 113, February
- * Cullen, Julie, Brian Jacob, and Steven Levitt (2006): "The Effect of School Choice on Student Outcomes: Evidence from Randomized Lotteries." *Econometrica*, 74(5), 1191-1230.
- * Angrist, Joshua D., Parag Pathak, and Chris Walters (2011): "Understanding Charter School Effectiveness." NBER Working Paper 17332.
- * Abadie, Alberto (2003): "Semiparametric Instrumental Variable Estimation of Treatment Response Models." *Journal of Econometrics*, 133(2), 231-263.

- Regression Discontinuity Design

- * *Imbens, Guido and T. Lemeiux (2008): "Regression Discontinuity Designs: A Guide to Practice." *Journal of Econometrics*, 142, 615-635.
- * *Abdulkadiroglu, Atila, Joshua Angrist, and Parag Pathak (2011): "The Elite Illusion: Achievement Effects and Boston and New York Exam Schools." NBER Working Paper 17264.
- * Angrist, Joshua D. and Victor Lavy (1999): "Using Maimonides' Rule to Estimate the Effect of Class Size on Scholastic Achievement." *Quarterly Journal of Economics*, 114 (May), 533-575.
- * Ludwig, Jens and D. Miller (2007): "Does Head Start Improve Children's Life Chances? Evidence from a Regression Discontinuity Design." Quarterly Journal of Economics, 122, 159-208.
- * Clark, Damon (2009): "The Performance and Competitive Effects of School Autonomy." *Journal of Political Economy*, 117(4), 745-783.
- * Imbens, Guido and Karthik Kalyanaraman (2009): "Optimal Bandwidth Choice for the Regression Discontinuity Estimator." NBER Working Paper 14726.

C. School Choice: Student Assignment Problems

- *Abdulkadiroğlu, Atila and Tayfun Sönmez (2003): "School Choice: A Mechanism Design Approach." American Economic Review, 93(3), 729-747.

- *Pathak, Parag and Tayfun Sönmez (2008): "Leveling the Playing Field: Sincere and Sophisticated Players in the Boston Mechanism." American Economic Review, 98(4), 1636-1652.
- *Pathak, Parag and Tayfun Sönmez (2011): "School Admissions Reforms in Chicago and England: Comparing Mechanisms by their Vulnerability to Manipulation." NBER Working Paper 16783.
- Pathak, Parag (2011): "The Mechanism Design Approach to Student Assignment." Annual Reviews of Economics, 3, 513-536.
- Epple, Dennis and Richard Romano (1998): "Competition between Private and Public Schools, Vouchers, and Peer-Group Effects," American Economic Review, 88: 33-62.
- *Hastings, Justine, Thomas Kane, and Doug Staiger (2008): "Heterogeneous Preferences and the Efficacy of Public School Choice." Available at: http://aida.econ.yale.edu/jh529/research.html

D. EDUCATION, HOUSING MARKETS, AND RESIDENTIAL SORTING

- *Black, Sandra (1999): "Do Better Schools Matter? Parental Evaluation of Elementary Education." Quarterly Journal of Economics, 114 (May), 577-600.
- *Bayer, Patrick, Fernando Ferreira, and Robert McMillan (2007): "A Unified Framework for Measuring Preferences for Schools and Neighborhoods." *Journal of Political Economy*, 115(4): 588-638.
- Fernandez, Raquel and Richard Rogerson (1996): "Income Distribution, Communities, and the Quality of Public Education." Quarterly Journal of Economics, 111(1), 135-164.
- Nechyba, Thomas (2003): "Introducing School Choice into Multidistrict Public School Systems." Chapter in, The Economics of School Choice, ed. C. Hoxby, 145-194.
- Epple, Dennis and Holger Sieg (1999): "Estimating Equilibrium Models of Local Jurisdictions." *Journal of Political Economy*, 107-84: 645-681
- Rothstein, Jesse (2006): "Good Principals or Good Peers: Parental Valuation of School Characteristics, Tiebout Equilibrium, and the Incentive Effects of Competition Among Jurisdictions." American Economic Review, 96(4), 1333-1350.
- Roback, Jennifer (1982): "Wages, rents, and the quality of life." *Journal of Political Economy*, 90(6), 1257-1278.
- Glaeser, Edward (2008): Cities, Agglomeration, and Spatial Equilibrium. Oxford University Press.

E. Externalities, Peer Effects, and Networks

- *Sacerdote, Bruce (2001): "Peer Effects with Random Assignment: Results for Dartmouth Roomates." Quarterly Journal of Economics, 116 (May), 681-704.
- Manski, Charles (1993): "Identification of Endogenous Social Effects: The Reflection Problem." Review of Economic Studies, 60, 531-542.
- Card, David and Laura Giuliano (2011): "Peer Effects and Multiple Equilibria in the Risky Behavior of Friends." NBER Working Paper, 17088.

- Benabou, Roland (1993): "Workings of a City: Location, Education and Production." Quarterly Journal of Economics, Vol. 108(3), 619-652.
- Graham, Bryan (2011): "Econometric methods for the analysis of assignment problems in the presence of complementarity and social spillovers." Handbook of Social Economics, 965-1052.
- Lazear, Edward (2001): "Education Production." Quarterly Journal of Economics, 116 (Aug.), 777-803.
- Mas, Alexandre and Enrico Moretti (2009): "Peers at Work." American Economic Review, 91(9), 2009.
- Jackson, Matthew (1996): "A Strategic Model of Social and Economic Networks." *Journal of Economic Theory*, 71(1), 44-74.
- Calvo-Armengol, Toni and M. Jackson (2004): "The Effects of Social Networks on Employment and Inequality." American Economic Review, 94(3), 426-454.
- Jackson, Matthew (2010): Social and Economic Networks, Princeton University Press.
- Bala, Venkatesh and Sanjeev Goyal (2000): "A Non-cooperative Model of Network Formation." Econometrica, 68(5), 1181-1229.
- Bala, Venkatesh and Sanjeev Goyal (1998): "Learning from Neighbors." Review of Economic Studies, 65, 595-621.

SECOND PART -- ACEMOGLU

Books:

Acemoglu, Daron and David Autor, Lectures in Labor Economics, manuscript in preparation.

Becker, Gary, Human Capital, The University of Chicago Press, 1964.

Pierre Cahuc and Andre Zilberberg Labor Economics MIT Press, 2004.

Lazear, Edward Personnel Economics, MIT Press, 1995

Pissarides, Christopher; Equilibrium Unemployment Theory, MIT Press, 2000.

I. Topics in The Theory of Human Capital

Overview:

Becker, Gary, Human Capital, The University of Chicago Press, 1964.

A. Investment in Education and Skills

- * AA, Chapter 1.
- * CZ, Chapter 2.
- * Ben-Porath, Yoram (1967). "The Production of Human Capital Over the Life Cycle," *Journal of Political Economy*, Vol. 75, No. 4-1, pp. 352-365.
- * Richard Willis, and Sherwin Rosen, "Education and Self-Selection," *Journal of Political Economy* (Supplement) 87: S7-S36, 1979.

Roy, A. (1951) "Some Thoughts on the Distribution of Earnings" Oxford Economic Papers, 235 – 46.

Richard Freeman, "Demand for Education," Chapter 6 in The Handbook of Labor Economics, Volume I.

* Becker, Gary and Nigel Tomes "Human capital and the rise and fall of families," *Journal of Labor Economics* 4, (1986) S1-S39.

Solon, Gary "Intergenerational Income Mobility in the United States" *American Economic Review* v82, n3 (June 1992): 393-408

Zimmerman, David J. "Regression toward Mediocrity in Economic Stature" *American Economic Review* v82, n3 (June 1992): 409-29

Mulligan Casey, Parental Priorities and Economic Inequality, (1997) University of Chicago Press.

Acemoglu, Daron and Steve Pischke (2001) "Changes in the Wage Structure, Family Income and Children's Education" *European Economic Review, Papers and Proceedings*, vol 45.

B. Signaling

- * AA, Chapter 2.
- * Spence, Michael (1973) "Job Market Signaling" Quarterly Journal of Economics, 87(3), 355 374.

Stiglitz, Joseph "The Theory of Screening, Education, and the Distribution of Income" *American Economic Review*, 66, 283 – 300.

Lang, Kevin, and David Kropp (1986), "Human Capital Versus Sorting: The Effects of Compulsory Attendance Laws," *Quarterly Journal of Economics* 101, 609-624.

* Tyler, John, Richard J. Murnane and John Willett (forthcoming) "Estimating the Labor Market Signaling value of the GED" *Quarterly Journal of Economics*..

C. Externalities and Peer Effects

- * AA, Chapter 3.
- * Benabou, Roland (1993). "Workings of a City: Location, Education and Production", *Quarterly Journal of Economics*, Vol. 108, No. 3, pp. 619-652.
- * Hoxby, Caroline (1996). "Are Efficiency and Equity in School Finance Substitutes or Complements", *Journal of Economic Perspectives*, Vol. 10, No. 4, pp. 51-72.

Rauch, James E. (1993), "Productivity Gains from Geographic Concentration of Human Capital: Evidence from the Cities" *Journal of Urban Economics* 34, 380-400.

* Manski, Charles (1993) "Identification of Endogenous Social Effects: the Reflection Problem," *Review of Economic Studies*, 60, 531-542.

Acemoglu, Daron (1996), "A Microfoundation for Social Increasing Returns in Human Capital Accumulation," *Quarterly Journal of Economics* 111 [3], 779-804.

- * Acemoglu, Daron and Joshua Angrist (2000). "How Large Are The External Returns to Education: Evidence from Compulsory Schooling Laws" *NBER Macro Annual 2000*.
- * Mas, Alex and Enrico Moretti (2006) "Peers at Work" NBER Working Paper # 12508.
- * Sacerdote, Bruce (2001) "Peer Effects with Random Assignment: Results from Dartmouth Roommates" *Quarterly Journal of Economics*, 116, 681-704.
- * Zimmerman, David (2003) "Peer Effects in Higher Education: Evidence from a Natural Experiment," *Review of Economics and Statistics*, 85, 9-23.

* Carrell, Scott, Bruce Sacerdote and James West (2011) "From Natural Variation to Optimal Policy? The Lucas Critique Meets Peer Effects" Dartmouth mimeo.

II. Incentives, Agency and Efficiency Wages

For an overall overview of this part see:

* Prendergast, Canice (1999) "The Provision of Incentives in Firms" *Journal of Economic Literature*, 28, 7-63

* Lazear, Edward (1996) Personnel Economics, MIT University Press.

Gibbons, Robert (1996) "Incentives and Careers in Organizations" in *Advances in Economics and Econometrics: Theory and Applications* edited by David Kreps and Ken Wallis, Cambridge University Press, Cambridge.

A. Basic Theory of Moral Hazard and Incentives, and Applications to CEO Pay and Unemployment Insurance

* AA, Chapter 4.

* CZ Chapters 6 and 11.

Salanie, Bernard (1997) The Economics of Contracts: A Primer, MIT University Press, Chapter 5.

Laffont, Jean-Jacques and David Martimort (2002) *The Theory of Incentives: The Principa- Agent Model*, Princeton University Press, Chapter 4.

* Holmstrom, Bengt (1979) "Moral Hazard and Observability" Bell Journal of Economics, 10, 74-91.

* Lazear, Edward (1996) Personnel Economics, MIT University Press, Chapter 2.

Lazear, Edward (2000) "Performance Pay and Productivity." American Economic Review0: 1346-61.

Murphy, Kevin J. (1985) "Corporate Performance and Managerial Remuneration: An Empirical Analysis." *Journal of Accounting and Economics* 7:11-42

Courty, Pascal, and Gerald Marschke (2004) "An Empirical Investigation of Gaming Responses to Explicit Performance Incentives." *Journal of Labor Economics* 22: 23-56.

* Oyer, Paul (1998) "Fiscal Year Ends and Nonlinear Incentive Contracts: The Effect on Business Seasonality." *Quarterly Journal of Economics* 113:149-85.

Alston, Lee, and Robert Higgs (1982) "Contractual Mix in Southern Agriculture since the Civil War: Facts, Hypotheses, and Test." *Journal of Economic History* 42:327-53.

Shavell, Steven and Laurence Weiss (1979) "The Optimal Payment of Unemployment Benefits over Time," Journal of Political Economy, 87, 1347--62.

* Hopenhayn, Hugo and Juan Pablo Nicolini (1997) "Optimal Unemployment Insurance," Journal of Political Economy, 105, 412--438.

B. Multitasking and Counter-Productive Incentives

- * AA, Chapter 5.
- * Holmstrom, Bengt and Milgrom, Paul (1991) "Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design" *Journal of Law, Economics and Organization* vol 7, n0 (Special Issue): 24-52
- * Jean-Jacques Laffont and David Martimort (2002) *The Theory of Incentives: The Principa-Agent Model*, Princeton University Press, Chapter 4.

Baker, George P. (1992) "Incentive Contracts and Performance Measurement" *Journal of Political Economy* v100, n3: 598-614

C. Career Concerns

<u>Background:</u> Wilson, James (1989) *Bureaucracy: What Government Agencies Do and Why They Do It*, Basic Books Classics.

- * AA, Chapter 5.
- * Holmstrom, Bengt (1999) "Managerial Incentive Problems: A Dynamic Perspective" *Review of Economic Studies* 66, n1: 169-82.

Dewatripont, Mathias; Ian Jewitt; and Jean Tirole (1999) "The Economics of Career Concerns, Part I: Comparing Information Structures," Review of Economic Studies, January, 66(1),183-198.

Dixit, Avinash (2002) "Incentives and organizations in the public sector: An interpretative review", Journal of Human Resources 37 (4), Fall, 696-727.

* Acemoglu, Daron, Michael Kremer and Atif Mian (2007) "Incentives in Markets, Firms and Governments" *Journal of Law, Economics and Organizations*, December 2007.

Chevalier, Judith and Glenn Ellison (1999) "Career Concerns of Mutual Fund Managers." *Quarterly Journal of Economics* 114: 389-432.

D. Holdups and Investments

<u>Background:</u> Williamson, Oliver, 1975, *Markets and Hierarchies: Analysis and Antitrust Implications*, New York, The Free Press.

- * AA, Chapter 6.
- * Laffont, Jean-Jacques and David Martimort (2002) *The Theory of Incentives: The Principa-Agent Model*, Princeton University Press, Chapter 6.

- * Grout, Paul, 1984 "Investment and Wages in the Absence of Binding Contracts: A Nash Bargaining Approach," *Econometrica*, 52, 449--460.
- * Grossman, Sanford and Oliver Hart (1986) "The Costs and Benefits of Ownership: a Theory of Vertical and Lateral Integration" *Journal of Political Economy*, vol. 94, pp. 691-719.

Hart, Oliver and John H. Moore, 1990 "Property Rights and the Nature of the Firm" *Journal of Political Economy*, 98, 1119-58

E. Efficiency Wages, Unemployment and Organization of the Firm

- * AA, Chapter 7.
- * CZ, Chapter 7.
- * Carl Shapiro and Joseph Stiglitz (1984); "Unemployment as Worker Discipline Device" American Economic Review,

Bulow, Jeremy and Lawrence Summers (1986); "A Theory of Dual Labor Markets with Application to Industrial Policy, Discrimination and Keynesian Unemployment" *Journal of Labor Economics*, Vol 4, pp376-415.

* Acemoglu, Daron and Andrew Newman (2002) "The Labor Market and Corporate Structure," *European Economic Review*, December 2002, volume 46, pp. 1733-1756.

Lazear, Edward (1996) Personnel Economics, MIT University Press, Chapter 3.

Raff, Danielle and Lawrence Summers (1987) "Did Henry Ford Pay Efficiency Wages?" *Journal of Labor Economics*, vol. 5, S57-S86.

Campbell III, Carl M., and Kunal S. Kamlani (1997) "The Reasons for Wage Rigidity: Evidence from a Survey of Firms." *Quarterly Journal of Economics*, 112(3), 759 – 789.

Neil, Derek (1993) "Supervision and Wages Across Industries," *Review of Economics and Statistics*, August, 1993, vol. 75, pp. 409-17.

Krueger, Alan B. (1991) "Ownership, Agency and Wages: An Examination of Franchising in the Fast Food Industry." *Quarterly Journal of Economics*, 106(1) 75 –

- * Cappelli, Peter and Keith Chauvin (1991) "An Interplant Test of the Efficiency Wage Hypothesis." *Quarterly Journal of Economics*, 106(3), 769 787.
- * Krueger, Alan B, and Lawrence H. Summers (1988) "Efficiency Wages and the Inter-Industry Wage Structure, *Econometrica*, 56(2) 259 93.

III. Investment in Skills

A. Theories of Training

- * AA, Chapter 8.
- * Acemoglu, Daron (1997a) "Training and Innovation in An Imperfect Labor Market," *Review of Economic Studies* 64, 445-464.
- * Acemoglu, Daron and Steve Pischke (1998). "Why Do Firms Train", *Quarterly Journal of Economics*, Vol. 113, No. 1, pp. 79-119.
- * Acemoglu, Daron and Steve Pischke (1999). "The Structure of Wages and Investment in General Training," *Journal of Political Economy*, vol 107, June 1999, pp. 539-572.
- * Autor, David H. (2001) "Why do Temporary Help Firms Provide Free General Skills Training?", *Quarterly Journal of Economics*, Vol. 116, No. 3, pp. 1409-1448.

Acemoglu, Daron and Steve Pischke (1999). "Beyond Becker: Training in Imperfect Labor Markets," *Economic Journal* vol 109 February 1999, pp F112-142.

Acemoglu, Daron and Steve Pischke (2000) "Minimum Wages and on-the-Job Training" forthcoming Research in Labor Economics

B. Firm-Specific Capital and Learning

- * AA, Chapter 9.
- * Topel Robert (1991). "Specific Capital, Mobility, and Wages: Wages Rise with Job Seniority" *Journal of Political Economy* v99, n1 145-76
- * Jacobson, Louis, Robert LaLonde and Daniel Sullivan (1993). "Earning Losses of Displaced Workers," *American Economic Review*, vol. 83, pp. 685-709.

Neal, Derek (1995). "Industry-Specific Human Capital: Evidence From Displaced Workers," *Journal of Labor Economics*, October, 1995, vol. 13, pp. 653-77.

Altonji, Joseph and R. Shakotko (1987). "Do Wages Rise With Seniority?" *Review of Economies Studies*, 54, 1987, 437-459.

Abraham Katherine and Henry Farber (1986). "Job Duration, Seniority, and Earnings," *American Economic Review*, 1986, 278-297.

- * Jovanovic, Boyan (1979). "Job Matching and the Theory of Turnover," *Journal of Political Economy*, 1979, 972-990.
- * Jovanovic, Boyan (1979). "Firm Specific Capital and Turnover," *Journal of Political Economy*, 1979, 1246-1260.
- * Lazear, Edward (2003). "Firm-Specific Human Capital: A Skill Weights Approach." NBER Working Paper No. 9679.

Topel Robert and Michael Ward (1992). "Job Mobility and the Careers of Young Men," *Quarterly Journal of Economics* 107 [2], 439-479.

* Prendergast, Canice (1993). "The Role of Promotion in Inducing Specific Human Capital Acquisition", *Quarterly Journal of Economics*, Vol. 108, No. 2, pp. 523-534.

Charmichael, Lorne, (1983). "Firm-Specific Capital and Promotion Ladders", *Bell Journal of Economics*, Vol. 14, No. 1, pp. 251-258.

Lazear, Edward P. Personnel Economics, (Cambridge: MIT Press), 1995, Chapter 7.

Farber, Henry and Robert Gibbons (1996). "Learning and Wage Dynamics" *Quarterly Journal of Economics*, 111, 107-147.

IV. Search and Unemployment

Overview:

- * Pissarides, Christopher; Equilibrium Unemployment Theory, MIT Press, 2000
- * Rogerson, Richard, Robert Shimer and Randall Wright (2004) "Search Models of the Labor Market: A Survey" *Journal of Economic Literature*, 43, pp. 959-988.

A. Unemployment, Non-Employment and Labor Market Flows

* Nickell, Steve (1997), "Unemployment and Labor Market Rigidities: Europe versus North America," *Journal of Economic Perspectives*, Vol 11, pp. 55-74.

Shimer, Robert (1998) "Why Is the U.S. Unemployment Rate So Much Lower?" Macroeconomics Annual, 1998

* Juhn, Chinhui, Kevin Murphy and Robert H. Topel, (1991) "Why Has the Natural Rate of Unemployment Increased over Time?" Brookings Papers on Economic Activity, 0(2) pp.75-126

OECD (1994); Jobs Study Volumes 1 and 2.

Blanchard, Olivier and Peter Diamond (1989); "The Beveridge Curve" *Brookings Papers on Economics Activity* 1989:1, pp 1-60.

B. The Partial Equilibrium Search Model

- * AA, Chapter 10.
- * CZ, Chapter 3.
- * Rogerson et al. op. cit.

C. The Basic Equilibrium Search Framework

Background: Bargaining theory, see CZ Chapter 7

Hosios, Arthur (1990) "On the Efficiency of Matching and Related Models of Search and Unemployment." *Review of Economics Studies* 57:2, 279-98.

* Mortensen, Dale and Christopher Pissarides (1994). "Job Creation and Job Destruction in the Theory of Unemployment" *Review of Economic Studies* Vol 61, pp 397-416.

D. The Composition of Jobs

- * AA, Chapter 12.
- * Acemoglu, Daron (2001), "Good Jobs vs Bad Jobs" *Journal of Labor Economics*, January 2001, vol 19, pp 1-22.
- * Acemoglu, Daron (1998). "Changes in Unemployment and Wage Inequality: An Alternative Theory and Some Evidence," *American Economic Review* 89 (1999a), 1259-1278.

Autor, David and David Dorn (2008) "Inequality and Specialization: The Growth of Low-Skill Service Jobs in the United States" MIT Mimeo.

E. Real Wage Rigidity and Unemployment

Shimer, Robert (2005). "The Cyclical Behavior of Equilibrium Unemployment in Vacancies" *American Economic Review*, vol 95, 25-49.

Hall, Robert E. (2008). "Limited Influence of Unemployment on the Wage Bargain" *American Economic Review*, vol 98, 1653-1674.

- * Shimer, Robert (2008). "The Consequences of Rigid Wages and Search Models" *Journal of European Economic Association*, vol 2, 469-479.
- * Pissarides, Christopher (2009). "The Unemployment Volatility Puzzle: Is Wage Stickiness the Answer?" *Econometrica*, vol 77, 1339-1369.

F. Nominal Wage Rigidity and Unemployment

- * Bewley, Truman (1999), Why Wages Don't Fall During a Recession, Harvard University Press.
- * Card, David and Dean Hyslop (1997). "Does inflation grease the wheels of the labor market?" In C. D. Romer and D. H. Romer (eds.), *Reducing Inflation: Motivation and Strategy*. NBER, Studies in Business Cycles, 30. Chicago: University of Chicago Press.

^{*} AA, Chapter 11.

^{*} Pissarides, chapters 1, 2 and 8.

Baker, George, Michael Gibbs and Bengt Holmström (1994), "The Wage Policy of a Firm," *Quarterly Journal of Economics* 109(4), pp. 921-955.

Dickens W.T., L. Goette, E.L. Groshen, S. Holden, J. Messina, M.E. Schweitzer, J. Turunen, and M.E. Ward (2007). "How wages change: micro evidence from the International Flexibility Project," *Journal of Economic Perspectives*, 21(2),195-214.

* Fehr, Ernest, and Lorenz Goette (2005), "Robustness and Real Consequences of Nominal Wage Rigidity," *Journal of Monetary Economics*, vol. 52(4), pages 779-804.

Nickell, Steve, and Glenda Quintini (2003). "Nominal wage rigidity and the rate of inflation." *The Economic Journal* vol. 113, 762–781.

V. Political Economy of Labor Markets

(Time permitting)

Saint-Paul, Gilles (2000), Political Economy of Labor Market Institutions, MIT Press.

Hall, Peter and David Soskice (2001, editors), Varieties of Capitalism, Cambridge University Press

Piketty, Thomas (1995), "Social Mobility and Redistributive Politics," Quarterly Journal of Economics.

Friedman, Richard and James Medoff (1984) What Do Unions Do? New York Basic Books.