

(Search-and-matching-oriented) Labor Economics

“Frictions are all over the place in modern macroeconomics.” N. Kocherlakota, 2009

A distinctive feature of Walrasian economies is that all markets clear. That is, no delay takes place when trading is mutually beneficial. This immediate implication is at odds with the empirical evidence: unemployed workers coexist with vacant jobs in the labor markets, buying/selling in the housing market is not instantaneous, singles take time to find a suitable partner, etc. Further, how can Walrasian models explain the existence of middlemen in these and other markets? Modern macroeconomics has widely incorporated frictions, e.g. in financial, housing or marriage markets. Since the 1970s, labor-macroeconomists in turn have developed a theory to analyze frictional labor markets in which searching for trading opportunities is a time-consuming activity.

This course is meant first as a joint-learning opportunity for students and ourselves. This has two remarkable implications: questioning and discussion will be central, and, related to that, students must put effort in reading the introduction of the session papers before the meeting. Second, to provide students with a toolkit to analyze labor markets with search frictions. In particular, the first half of the course is devoted to make students familiar with the technical instruments. A second aim, which covers the second half, is to touch research lines in the frontier of this field. Over the second part, special focus will be put on policy and business cycle implications.

The first part of the course will be taught by Javier Fernandez-Blanco; the second part by Ludo Visschers.

Evaluation system:

Students are expected to successfully complete 2 homework sets, email us 5 lines of the session's paper(s) by the previous day, do one class presentation from a list of selected papers, and a paper proposal, presented in the last class.

Below a tentative course outline is drawn. Some changes may be introduced throughout the course. Although most material will be covered by published manuscripts, some of you may want to take a look at these two other references: Pierre Cahuc and Andre Zilberberg; *Labor Economics*, MIT Press, 2004; and Pissarides, Christopher; *Equilibrium Unemployment Theory*, MIT Press, 2000.

Tentative Outline of the course

Sessions 1-5. *Search and Matching models. Random vs. Directed Search. Bargaining, Posting and Auctioning. Partial and General Equilibrium Models*

- a. * Pissarides, Christopher, "Equilibrium Unemployment Theory", MIT Press, 2000, chapters 1-3 (transition), and 8
- b. Hosios, A. (1990): "On the Efficiency of Matching and Related Models of Search and Unemployment," *Review of Economics Studies* 57:2, 279-98.
- c. * Petrongolo, B. and C. Pissarides (2001): "Looking into the black box: a survey of the matching function," *Journal of Economic Literature* 39: 390-431.
- d. * Moen, E. (1997): "Competitive Search Equilibrium", *Journal of Political Economy*, 105, 385-411
- e. Montgomery, J.D. (1991): "Equilibrium Wage Dispersion and Interindustry Wage Differentials," *Quarterly Journal of Economic*, 106, 163-179
- f. * Peters, M (1991): "Ex Ante Price Offers in Matching Games Non-Steady States," *Econometrica*, 59, 1425-1454
- g. * Burdett, Shi and Wright (2001): "Pricing and Matching with Frictions", *Journal of Political Economy*, 109, 1060-1085
- h. Hall, R. and Krueger, A. (2010): "Evidence on the Determinants of the Choice between Wage Posting and Wage Bargaining," NBER working paper
- i. Rogerson, Richard, Robert Shimer and Randall Wright (2004): "Search Models of the Labor Market: A Survey," *Journal of Economic Literature*, 43, 959-988.

Session 7 and 8. Extensions.

- a. Heterogeneity
 - a. Shi, S. (2001): "Frictional assignment, i: efficiency," *Journal of Economic Theory*, 98, 232-260.
 - b. *Shimer, R. (2005): "The assignment of workers to jobs in an economy with search frictions," *Journal of Political Economy*, 113, 996-1025.
- b. Multiple applications and Auctions

- c. Pissarides (2000)
- d. *Galenianos, M. and P. Kircher (2009): "Directed search with multiple job applications," *Journal of Economic Theory*, 144:2, 445-471
- e. * Albrecht, J. and P.A. Gautier and S. Vroman (2006): "Equilibrium directed search with multiple applications," *Review of Economic Studies*, 73:4, 869-891
- f. * Kircher, P. and J. Eeckhout (2010): "Sorting versus screening: Search frictions and competing mechanisms", *Journal of Economic Theory*, 145, 1354-1385
- g. Albrecht, Gautier and Vroman (2010), mimeo

c. On-the-job search and wage dispersion

- a. * Burdett, K. and D. T. Mortensen (1998): "Wage differentials, employer size, and unemployment," *International Economic Review*, 39:2, 257-273
- b. Stevens, M. (2004): "Wage-Tenure Contracts in a Frictional Labour Market: Firms' Strategies for Recruitment and Retention," *Review of Economic Studies*, 71, 535-551
- c. Burdett, K. and M. Coles (2003): "Equilibrium Wage-Tenure Contracts," *Econometrica*, 71, 1377-1404
- d. Delacroix, A. and Shi, S. (2006): "Directed Search On The Job and The Wage Ladder," *International Economic Review*, 47, 651-699
- e. *Shi, S. (2009): "Directed Search for Equilibrium Wage-Tenure Contracts," *Econometrica*, 77, 561--584
- f. Mortensen, D. (2003): "Wage dispersion: why are similar workers paid differently?," MIT Press, Cambridge MA.
- g. * Postel-Vinay, F. and J. Robin (2002): "Equilibrium wage dispersion with worker and employer heterogeneity," *Econometrica*, 70, 2295-350.

Income over the life cycle: Search, Human Capital, Learning

1. Menzio, G. and Shi, S. (2010): "[Directed Search on the Job, Heterogeneity and Aggregate Fluctuations](#)," *American Economic Review*, 100:2, 327-332.

2. Rubinstein, Yoni, and Yoram Weiss (2006). "Post School Earnings: Search versus Human Capital", Chapter One, *** in Handbook on the Economics of Education, eds., Eric Hanushek and Finis Welch
3. Menzio, G. and Shi, S. (2009): "Block recursive equilibria for stochastic models of search on the job," Journal of Economic Theory
4. Heckman, J.; L. Lochner and R. Cossa (2002) "Learning-by-Doing vs. On-the-job Training: Using Variation Induced by the EITC *** to Distinguish between models of skill formation. NBER working papers 9083
5. Chao Fu (2010) "Training, Search and Wage Dispersion", *** University of Wisconsin Working Paper (forthcoming RED)
6. Burdett, K., C. Carrillo-Tudela and M. Coles (2009), Human Capital Accumulation and Labor Market Equilibrium, ** IZA Working Paper (forthcoming IER)
7. Topel, R (1992) and M. Ward "Job Mobility and Careers of Young Men", *** Quarterly Journal of Economics
8. Topel, R (1991) "Specific Capital, mobility and wages: Wages rise with job seniority", Journal of Political Economy
9. Ben-Porath, Y (1967) "The production of human capital and the life cycle of earnings", Journal of Political Economy, 75, pp. 352-3652)
10. Hornstein, A; P Krusell, and G.L. Violante (2010) "Frictional Wage Dispersion in Search models: A Quantitative Assessment", *** NYU Working Paper (Forthcoming AER)

Income Inequality, Income Shocks and Uncertainty over the life cycle

- a. Eckstein, Zvi and Eva Nagypal (2004). U.S. Earnings Inequality 1961-2002. Minneapolis Fed QR. ***
- b. Piketty Thomas and Emmanuel Saez (2003). Income Inequality in the U.S. (1913-1998). Quarterly Journal of Economics
- c. Gottschalk, Peter (1997). Inequality, Income Growth and Mobility: the basic facts. Journal of Economic Perspectives
- d. Keane, M and K. Wolpin (1997) "Career Decisions of Young Men" ***
- e. Liu, H. (2009) "Life cycle Human Capital Formation, Search Intensity, and Wage Dynamics", University of Western Ontario W

- f. Guiso, Luigi, Luigi Pistaferri and Fabiano Schivardi (2005) "Insurance within the Firm", Journal of Political Economy
- g. Bagger, Jesper, Francois Fontaine, Fabien Postel-Vinay and Jean-Marc Robin (2007) "A Tractable Equilibrium Search Model of Individual Wage Dynamics with Experience Accumulation, working paper, Royal Holloway London.
- h. Postel-Vinay, Fabien and Helene Turon (2010) "On-the-job Search, Productivity Shocks, and the Individual Earnings Process", International Economic Review 51(3), 599-629
- i. Hoffman, Florian (2010) "An Empirical Model of Life-Cycle Earnings and Mobility Dynamics"
- j. Guvenen, Fatih (2005) "An Empirical Investigation of Income Processes", Review of Economic Dynamics
- k. Gottschalk, Peter and Robert Moffitt (1994). The Growth of Earnings Instability in the U.S. Labour Market. Brookings Papers of Economic Activity
- l. Gottschalk, Peter and Robert Moffitt (2002) Trends in the transitory variance of earnings in the United States. The Economic Journal ***
- m. Gottschalk, Peter and Robert Moffitt (1999) Changes in Job Instability and Insecurity using Monthly Survey Data. Journal of Labor Economics
- n. Low, Hamish; Costas Meghir and Luigi Pistaferri (2010) "Wage risk and employment risk over the life-cycle", American Economic Review (forthcoming).(presented by Pedro) ***
- o. Meghir, Costas and Luigi Pistaferri (2004) "Income Variance Dynamics and Heterogeneity", Econometrica
- p. Altonji, Joseph, Anthony Smith and Ivan Vidangos (2009) "Modeling Earnings Dynamics", NBER working paper

Search and Consumption and Saving, Search & Labor Supply

- a. Meghir, Costas and Luigi Pistaferri (forthcoming) "Earnings, consumption and lifecycle choices", Handbook of Labor Economics ***
- b. Krusell, Per; Mukoyama, Toshihiko; Rogerson, Richard and Aysegul Sahin, 2009. "A Three State Model of Worker Flows in General Equilibrium," NBER 1525

- c. Krusell, Per; Mukoyama, Toshihiko; Rogerson, Richard and Aysegul Sahin 2009. "Aggregate Labor Market Outcomes: The Role of Choice and Chance," NBER 15252
- d. Per Krusell; Toshihiko Mukoyama; Richard Rogerson and Aysegul Sahin, 2008. "Aggregate Implications of Indivisible Labor, Incomplete Markets, and Labor Market Frictions, JME
- e. Per Krusell; Toshihiko Mukoyama and Aysegul Sahin, (2010). "Labor-Market Matching with Precautionary Savings and Aggregate Fluctuations," ReStud
- f. Michelacci, C. and J. Pijoan-Mas (2010) "Intertemporal Labor Supply with Search Frictions", CEMFI Working paper
- g. Jeremy Lise (2007) "On-the-Job Search and Precautionary Savings: Theory and Empirics of Earnings and Wealth Inequality