

Allocation and Wages in Labor Markets
Professor Rasmus Lentz
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Description

The course is focused on wages, worker mobility and allocation, and job creation in frictional labor markets with worker and firm heterogeneity. Topics include measurement of wage and mobility determinants in matched employer-employee data, with a particular focus on the Danish data. The empirical results are interpreted in the context of frictional labor market models; random and directed search.

Rasmus Lentz received his Ph.D. from the Northwestern University in 2002. He is currently the Richard A. and Susan B. Strait Professor at the University of Wisconsin-Madison. He is an associate editor with Review of Economic Dynamics. His research focuses on labor markets with search frictions and especially how heterogeneity of workers and firms interact.

The course is scheduled to run over 5 days with 12 90-minute lectures. In addition there are problem sets and a take home final. The course grade is based on in class participation, problem sets, and the final. The problem sets and the final involve practical model solving and estimation using numerical methods. 2 of the lectures are labs that are concerned with numerical methods and implementation. Suggested coding languages are Julia and Fortran.

Schedule. May 22-26, 2023.

		Lecture/Topic
Mon	13:00-14:30	01 Introduction. Dynamic methods. Labor market micro data.
Mon	14:45-16:15	02 Random partial search.
Tue	10:30-12:00	03 Equilibrium wage determination.
Tue	13:00-14:30	04 Equilibrium wage determination.
Tue	14:45-16:15	05 Equilibrium wage determination.
Wed	10:30-12:00	06 Lab: Model solution.
Wed	13:00-14:30	07 DMP model of job creation/destruction.
Wed	14:45-16:15	08 Moen (1997), Menzio and Shi (2013).
Thu	10:30-12:00	09 Heterogeneity and allocation.
Thu	13:00-14:30	10 Empirical inference from micro data (AKM, BLM, LPR)
Thu	14:45-16:15	11 Empirical inference from micro data (EM algorithm)
Fri	08:30-10:00	12 Lab: Model simulation.

Suggested lecture readings (in addition to lecture notes and slides):

- 01-06: Diamond (1971), Burdett and Judd (1983), Burdett and Mortensen (1998), Mortensen (2003), Postel-Vinay and Robin (2002), Moen (1997), Mortensen and Pissarides (1994), Burdett and Coles (2003,2010), Lentz (2010, 2014), Stevens (2004), Lentz and Roys (2015), Moen and Rosén (2011), Menzio and Shi (2010, 2011), Bagger et al. (2014), Hwang et. al. (1998), Shimer (2005), Hosios (1990).
- 07-12: Abowd, Kramarz, and Margolis (1999), Shimer and Smith (2000), Shimer (2005), Eeckhout and Kircher (2011), Postel-Vinay and Robin (2002), Cahuc, Postel-Vinay and Robin (2006), Bagger and Lentz (2019), Bonhomme, Lamadon, and Manresa (2019), Klein, Saggio and Sølvssten (2020), Lentz, Piyapromdee and Robin (2022), Card, Heining, and Kline (2016), Sørensen and Vejlin (2011), Taber and Vejlin (2020).

Syllabus:

- Abowd, John M., Robert H. Creedy, and Francis Kramarz (2002). Computing Person and Firm Effects Using Linked Longitudinal Employer-Employee Data. Longitudinal Employer-Household Dynamics Technical Papers 2002-06, Center for Economic Studies, U.S. Census Bureau.
- Abowd, John M., Francis Kramarz, and David N. Margolis (1999). High wage workers and high wage firms. *Econometrica* 67, no. 2: 251–334.
- Abowd, John M., Kevin L. McKinney, and Ian M. Schmutte (2019). Modeling Endogenous Mobility in Earnings Determination. *Journal of Business & Economic Statistics* 37, no. 3: 405–418.
- Altonji, Joseph G. and Robert A. Shaker (1987). Do wages rise with job seniority? *Review of Economic Studies* 54, no. 3: 437–459.
- Bagger, Jesper, Francois Fontaine, Fabien Postel-Vinay, and Jean-Marc Robin (2014). Tenure, experience, human capital, and wages: A tractable equilibrium search model of wage dynamics. *American Economic Review* 104, no. 6: 1551–96.

- Bagger, Jesper and Rasmus Lentz (2019). An Empirical Model of Wage Dispersion with Sorting. *The Review of Economic Studies* 86, no. 1: 153–190.
- Becker, Gary S. (1973). A theory of marriage: Part I. *The Journal of Political Economy* 81, no. 4: 813–46.
- Bonhomme, Stéphane, Thibaut Lamadon, and Elena Manresa (2019). A Distributional Framework for Matched Employer Employee Data. *Econometrica* 87, no. 3: 699–739.
- Burdett, Kenneth and Melvyn Coles (2010). Wage/tenure contracts with heterogeneous firms. *Journal of Economic Theory* 145: 1408–35.
- Burdett, Kenneth and Melvyn G. Coles (2003). Equilibrium wage-tenure contracts. *Econometrica* 71, no. 5: 1377–1404.
- Burdett, Kenneth and Kenneth L. Judd (1983). Equilibrium price dispersion. *Econometrica* 51, no. 4: 955–69.
- Burdett, Kenneth and Dale T. Mortensen (1998). Wage differentials, employer size, and unemployment. *International Economic Review* 39, no. 2: 257–273.
- Cahuc, Pierre, Fabien Postel-Vinay, and Jean-Marc Robin (2006). Wage bargaining with on-the-job search: Theory and evidence. *Econometrica* 74, no. 2: 323–64.
- Card, David, Ana Rute Cardoso, and Patrick Kline (2016). Bargaining, sorting, and the gender wage gap: Quantifying the impact of firms on the relative pay of women *. *The Quarterly Journal of Economics* 131, no. 2: 633–686.
- Card, David, Jörg Heining, and Patrick Kline (2013). Workplace Heterogeneity and the Rise of West German Wage Inequality. *The Quarterly Journal of Economics* 128, no. 3: 967–1015.
- Diamond, P. A. (1971). A model of price adjustment. *Journal of Political Economy*, no. 3: 156–168.
- Diamond, Peter A. (1982). Wage determination and efficiency in search equilibrium. 49, no. 2: 217–27.
- Eeckhout, Jan and Philipp Kircher (2011). Identifying Sorting-In Theory. *Review of Economic Studies* 78, no. 3: 872–906.
- Gourieroux, Christian and Alain Monfort (1997). *Simulation-Based Econometric Methods*. Oxford University Press.
- Hagedorn, Marcus, Tzuo Hann Law, and Iourii Manovskii (2017). Identifying Equilibrium Models of Labor Market Sorting. *Econometrica* 85: 29–65.
- Hall, Robert E and Andreas I Mueller (2018). Wage dispersion and search behavior: The importance of nonwage job values. *Journal of Political Economy* 126, no. 4: 1594–1637.
- Heckman, James J. and Brain Singer (1984). A method for minimizing the impact of distributional assumptions in econometric models for duration data. *Econometrica* 52: 271–320.
- Hwang, Hae Shin, Dale T. Mortensen, and Robert W. Reed (1998). Hedonic wages and labor market search. *Journal of Labor Economics* 16, no. 4: 815–47.
- Kline, Patrick, Raffaele Saggio, and Mikkel Solvsten (2020). Leave-out estimation of variance components. *Econometrica* 88, no. 5: 1859–1898.
- Lentz, Rasmus (2010). Sorting by search intensity. *Journal of Economic Theory* 145, no. 4: 1436–1452. *Search Theory and Applications*.
- Lentz, Rasmus and Suphanit Piyapromde and J.M. Robin (2022). *The Anatomy of Sorting – Evidence from Danish Data*. Working paper.
- Menzio, Guido and Shoyong Shi (2010). Block recursive equilibria for stochastic models of search on the job. *Journal of Economic Theory* 145, no. 4: 1453–1494.
- Menzio, Guido and Shouyong Shi (2011). Efficient search on the job and the business cycle. *Journal of Political Economy* 119, no. 3: 468–510.
- Moen, Espen R. (1997). Competitive search equilibrium. *Journal of Political Economy* 105, no. 2: 385–411.
- Moen, Espen R. and Åsa Rosén (2011). Incentives in Competitive Search Equilibrium. *Review of Economic Studies* 78, no. 2: 733–761.
- Mortensen, Dale T. (1982). Property rights and efficiency in mating, racing, and related games. *American Economic Review* 72, no. 5: 968–79.

- Mortensen, Dale T. (2003). *Wage Dispersion: Why Are Similar Workers Paid Differently?* Cambridge, Massachusetts and London, England: MIT Press.
- Mortensen, Dale T. and Chris A. Pissarides (1994). Job creation and job destruction in the theory of unemployment. *The Review of Economic Studies* 61: 397–415.
- Mortensen, Dale T. and Randall Wright (2002). Competitive pricing and efficiency in search equilibrium. *International Economic Review* 43, no. 1: 1–20.
- Moscarini, Giuseppe (2005). Job matching and the wage distribution. *Econometrica* 73, no. 2: 481–516.
- Pissarides, Christopher A. (2000). *Equilibrium Unemployment Theory* (Second ed.). Cambridge, Massachusetts and London, England.: MIT Press.
- Postel-Vinay, Fabien and Jean-Marc Robin (2002). Equilibrium wage dispersion with worker and employer heterogeneity. *Econometrica* 70, no. 6: 2295–2350.
- Shimer, Robert (2005a). The assignment of workers to jobs in an economy with coordination frictions. *Journal of Political Economy* 113, no. 5: 996–1025.
- Shimer, Robert (2005b). The cyclical behavior of equilibrium unemployment and vacancies. *American Economic Review* 95, no. 1: 25–49.
- Shimer, Robert and Lones Smith (2000). Assortative matching and search. *Econometrica* 68, no. 2: 343–369.
- Stevens, Margaret (2004). Wage-Tenure Contracts in a Frictional Labour Market: Firms' Strategies for Recruitment and Retention. *Review of Economic Studies* 71, no. 2: 535–551.
- Taber, Christopher and Rune Vejlin (2020). Estimation of a roy/seach/compensating differential model of the labor market. *Econometrica* 88, no. 3: 1031–1069.