

PhD22: Macro Labour

Sebastian Graves

Lent Term 2026

University of Cambridge

Lecture Time/Location: Thursday 14:00-16:00, Marshall Room, Austin Robinson Building

Office Hours: Thursday, 16:00-17:00, Room 43, Austin Robinson Building

Email: sg566@cam.ac.uk

1 Overview

The purpose of this course is to introduce students to both the theoretical and empirical literature concerning macroeconomic analysis of the labour market. On the theoretical side, our main aim will be to study the most relevant frameworks for reading papers in the field - e.g., random search, directed search, wage posting, and island models. Particular emphasis will be placed on the quantitative evaluation of these frameworks. On the empirical side, we will aim to familiarise ourselves with key stylised facts in labour market data, particularly with regard to business cycle patterns. As time allows, we will endeavour to cover new topics at the research frontier.

2 Assessment

Assessment for the course will consist of one problem set and one class presentation.

3 Background Reading

1. PISSARIDES, C. A. *Equilibrium unemployment theory*. MIT press, 2000
2. LJUNGQVIST, L., AND SARGENT, T. J. *Recursive macroeconomic theory*. MIT press, 2018
3. ROGERSON, R., AND SHIMER, R. Search in macroeconomic models of the labor market. In *Handbook of labor economics*, vol. 4. Elsevier, 2011, pp. 619–700

4 Course Outline

1. Labour Market (Flows) Data: A Helicopter Tour

- BLANCHARD, O. J., AND DIAMOND, P. The Beveridge Curve. *Brookings Papers on Economic Activity* 1989, 1 (1989), 1–76
- BLANCHARD, O. J., AND DIAMOND, P. The cyclical behavior of the gross flows of us workers. *Brookings papers on economic activity* 1990, 2 (1990), 85–155
- ABOWD, J. M., AND ZELLNER, A. Estimating gross labor-force flows. *Journal of Business & Economic Statistics* 3, 3 (1985), 254–283
- ELSBY, M. W., HOBIJN, B., AND ŞAHIN, A. On the importance of the participation margin for labor market fluctuations. *Journal of Monetary Economics* 72 (2015), 64–82
- DAVIS, S. J., FABERMAN, R. J., AND HALTIWANGER, J. The flow approach to labor markets: new data sources and micro–macro links. *Journal of Economic perspectives* 20, 3 (2006), 3–26
- DAVIS, S. J., FABERMAN, R. J., AND HALTIWANGER, J. C. The establishment-level behavior of vacancies and hiring. *The Quarterly Journal of Economics* 128, 2 (2013), 581–622
- HALL, R. E. Job loss, job finding, and unemployment in the us economy over the past fifty years. *NBER macroeconomics annual* 20 (2005), 101–137
- ELSBY, M. W. L., MICHAELS, R., AND SOLON, G. The ins and outs of cyclical unemployment. *American Economic Journal: Macroeconomics* 1, 1 (2009), 84–110
- FUJITA, S., AND RAMEY, G. The cyclicity of separation and job finding rates. *International Economic Review* 50, 2 (2009), 415–430
- SHIMER, R. Reassessing the ins and outs of unemployment. *Review of Economic Dynamics* 15, 2 (2012), 127–148
- ELSBY, M. W., HOBIJN, B., AND ŞAHIN, A. Unemployment Dynamics in the OECD. *Review of Economics and Statistics* 95, 2 (2013), 530–548
- FUJITA, S., MOSCARINI, G., AND POSTEL-VINAY, F. Measuring employer-to-employer reallocation. *American Economic Journal: Macroeconomics* 16, 3 (2024), 1–51
- GRAVES, S., HUCKFELDT, C. K., AND SWANSON, E. T. The labor demand and labor supply channels of monetary policy. Tech. rep., National Bureau of Economic Research, 2024
- HOBIJN, B., AND ŞAHIN, A. Maximum employment and the participation cycle. Tech. rep., National Bureau of Economic Research, 2021
- HALL, R. E., AND KUDLYAK, M. Job-finding and job-losing: A comprehensive model of heterogeneous individual labor-market dynamics. Tech. rep., National Bureau of Economic Research, 2019
- AHN, H. J., HOBIJN, B., AND ŞAHIN, A. The dual us labor market uncovered. Tech. rep., National Bureau of Economic Research, 2023

- MORCHIO, I. Work histories and lifetime unemployment. *International Economic Review* 61, 1 (2020), 321–350
- GREGORY, V., MENZIO, G., AND WICZER, D. The alpha beta gamma of the labor market. *Journal of Monetary Economics* (2024), 103695

2. The DMP Model of Equilibrium Unemployment

- PISSARIDES, C. A. Short-run equilibrium dynamics of unemployment, vacancies, and real wages. *The American Economic Review* 75, 4 (1985), 676–690
- HOSIOS, A. J. On the efficiency of matching and related models of search and unemployment. *The Review of Economic Studies* 57, 2 (1990), 279–298
- MORTENSEN, D. T., AND PISSARIDES, C. A. Job creation and job destruction in the theory of unemployment. *The review of economic studies* 61, 3 (1994), 397–415
- PISSARIDES, C. A. *Equilibrium unemployment theory*. MIT press, 2000
- PETRONGOLO, B., AND PISSARIDES, C. A. Looking into the black box: A survey of the matching function. *Journal of Economic literature* 39, 2 (2001), 390–431

3. Business Cycle Dynamics in the DMP Model

- SHIMER, R. The cyclical behavior of equilibrium unemployment and vacancies. *American economic review* 95, 1 (2005), 25–49
- HALL, R. E. Employment fluctuations with equilibrium wage stickiness. *American economic review* 95, 1 (2005), 50–65
- HAGEDORN, M., AND MANOVSKII, I. The cyclical behavior of equilibrium unemployment and vacancies revisited. *American Economic Review* 98, 4 (2008), 1692–1706
- HALL, R. E., AND MILGROM, P. R. The limited influence of unemployment on the wage bargain. *American economic review* 98, 4 (2008), 1653–1674
- PISSARIDES, C. A. The unemployment volatility puzzle: Is wage stickiness the answer? *Econometrica* 77, 5 (2009), 1339–1369
- HORNSTEIN, A., KRUSELL, P., AND VIOLANTE, G. L. Unemployment and vacancy fluctuations in the matching model: Inspecting the mechanism. *FRB Richmond Economic Quarterly* 91, 3 (2005), 19–51
- ELSBY, M. W. L., AND MICHAELS, R. Marginal jobs, heterogeneous firms, and unemployment flows. *American Economic Journal: Macroeconomics* 5, 1 (2013), 1–48
- LJUNGQVIST, L., AND SARGENT, T. J. The fundamental surplus. *American Economic Review* 107, 9 (2017), 2630–2665
- MERZ, M. Search in the labor market and the real business cycle. *Journal of monetary Economics* 36, 2 (1995), 269–300
- ANDOLFATTO, D. Business cycles and labor-market search. *The american economic review* (1996), 112–132

- DEN HAAN, W. J., RAMEY, G., AND WATSON, J. Job destruction and propagation of shocks. *American economic review* 90, 3 (2000), 482–498
- GERTLER, M., AND TRIGARI, A. Unemployment fluctuations with staggered nash wage bargaining. *Journal of political Economy* 117, 1 (2009), 38–86
- GERTLER, M., SALA, L., AND TRIGARI, A. An estimated monetary dsge model with unemployment and staggered nominal wage bargaining. *Journal of Money, Credit and Banking* 40, 8 (2008), 1713–1764
- CHRISTIANO, L. J., EICHENBAUM, M. S., AND TRABANDT, M. Unemployment and business cycles. *Econometrica* 84, 4 (2016), 1523–1569

4. Wage Rigidity: Empirical Evidence

- BILS, M. J. Real wages over the business cycle: evidence from panel data. *Journal of Political economy* 93, 4 (1985), 666–689
- HAEFKE, C., SONNTAG, M., AND VAN RENS, T. Wage rigidity and job creation. *Journal of monetary economics* 60, 8 (2013), 887–899
- KUDLYAK, M. The cyclical cost of the user cost of labor. *Journal of Monetary Economics* 68 (2014), 53–67
- GERTLER, M., HUCKFELDT, C., AND TRIGARI, A. Unemployment fluctuations, match quality, and the wage cyclicality of new hires. *The Review of Economic Studies* 87, 4 (2020), 1876–1914
- GRIGSBY, J., HURST, E., AND YILDIRMAZ, A. Aggregate nominal wage adjustments: New evidence from administrative payroll data. *American Economic Review* 111, 2 (2021), 428–471
- HAZELL, J., AND TASKA, B. Downward rigidity in the wage for new hires. *Available at SSRN 3728939* (2020)
- DAVIS, S. J., AND KROLIKOWSKI, P. M. Sticky wages on the layoff margin. Tech. rep., National Bureau of Economic Research, 2023

5. Random Search and Wage Posting

- MCCALL, J. J. Economics of information and job search. *The Quarterly Journal of Economics* 84, 1 (1970), 113–126
- BURDETT, K., AND MORTENSEN, D. T. Wage differentials, employer size, and unemployment. *International Economic Review* (1998), 257–273
- LUCAS JR, R. E., AND PRESCOTT, E. C. Equilibrium search and unemployment. In *Uncertainty in economics*. Elsevier, 1978, pp. 515–540
- HORNSTEIN, A., KRUSELL, P., AND VIOLANTE, G. L. Frictional wage dispersion in search models: A quantitative assessment. *American Economic Review* 101, 7 (2011), 2873–2898
- ENGBOM, N., AND MOSER, C. Earnings inequality and the minimum wage: Evidence from brazil. *American Economic Review* 112, 12 (2022), 3803–3847

6. Directed Search Models

- MOEN, E. R. Competitive search equilibrium. *Journal of political Economy* 105, 2 (1997), 385–411
- MENZIO, G., AND SHI, S. Block recursive equilibria for stochastic models of search on the job. *Journal of Economic Theory* 145, 4 (2010), 1453–1494
- MENZIO, G., AND SHI, S. Efficient search on the job and the business cycle. *Journal of Political Economy* 119, 3 (2011), 468–510
- MENZIO, G., TELYUKOVA, I. A., AND VISSCHERS, L. Directed search over the life cycle. *Review of Economic Dynamics* 19 (2016), 38–62
- WRIGHT, R., KIRCHER, P., JULIEN, B., AND GUERRIERI, V. Directed search and competitive search equilibrium: A guided tour. *Journal of Economic Literature* 59, 1 (2021), 90–148

7. Unemployment Risk and Precautionary Saving

- KRUSELL, P., MUKOYAMA, T., AND ŞAHİN, A. Labour-market matching with precautionary savings and aggregate fluctuations. *The Review of Economic Studies* 77, 4 (2010), 1477–1507
- LISE, J. On-the-job search and precautionary savings. *Review of economic studies* 80, 3 (2013), 1086–1113
- CHAUMONT, G., AND SHI, S. Wealth accumulation, on-the-job search and inequality. *Journal of Monetary Economics* 128 (2022), 51–71
- HERKENHOFF, K. F. The impact of consumer credit access on unemployment. *The Review of Economic Studies* 86, 6 (2019), 2605–2642

8. Unemployment Risk and Aggregate Demand over the Business Cycle

- GORNEMANN, N., KUESTER, K., AND NAKAJIMA, M. Doves for the rich, hawks for the poor? distributional consequences of systematic monetary policy. Tech. rep., ECONtribute Discussion Paper, 2021
- RAVN, M. O., AND STERK, V. Job uncertainty and deep recessions. *Journal of Monetary Economics* 90 (2017), 125–141
- Graves, S., 2023. Does Unemployment Risk Affect Business Cycle Dynamics? *American Economic Journal: Macroeconomics* (Forthcoming)

9. Job Search Behaviour and Labour Supply

- LUCAS JR, R. E., AND RAPPING, L. A. Real wages, employment, and inflation. *Journal of political economy* 77, 5 (1969), 721–754
- HANSEN, G. D. Indivisible labor and the business cycle. *Journal of monetary Economics* 16, 3 (1985), 309–327
- ROGERSON, R. Indivisible labor, lotteries and equilibrium. *Journal of monetary Economics* 21, 1 (1988), 3–16

- CHANG, Y., AND KIM, S.-B. Heterogeneity and aggregation: Implications for labor-market fluctuations. *American Economic Review* 97, 5 (2007), 1939–1956
- KRUSELL, P., MUKOYAMA, T., ROGERSON, R., AND ŞAHIN, A. Gross worker flows over the business cycle. *American Economic Review* 107, 11 (2017), 3447–3476
- FABERMAN, R. J., MUELLER, A. I., ŞAHIN, A., AND TOPA, G. Job search behavior among the employed and non-employed. *Econometrica* 90, 4 (2022), 1743–1779
- GRAVES, S., HUCKFELDT, C. K., AND SWANSON, E. T. The labor demand and labor supply channels of monetary policy. Tech. rep., National Bureau of Economic Research, 2024

10. Unemployment Insurance

- CHETTY, R. Moral hazard versus liquidity and optimal unemployment insurance. *Journal of political Economy* 116, 2 (2008), 173–234
- LANDAIS, C., MICHAILLAT, P., AND SAEZ, E. A macroeconomic approach to optimal unemployment insurance: Theory. *American Economic Journal: Economic Policy* 10, 2 (2018), 152–181
- LANDAIS, C., MICHAILLAT, P., AND SAEZ, E. A macroeconomic approach to optimal unemployment insurance: Applications. *American Economic Journal: Economic Policy* 10, 2 (2018), 182–216
- GANONG, P., AND NOEL, P. Consumer spending during unemployment: Positive and normative implications. *American economic review* 109, 7 (2019), 2383–2424
- CHODOROW-REICH, G., COGLIANESE, J., AND KARABARBOUNIS, L. The macro effects of unemployment benefit extensions: a measurement error approach. *The Quarterly Journal of Economics* 134, 1 (2019), 227–279
- MITMAN, K., AND RABINOVICH, S. Optimal unemployment insurance in an equilibrium business-cycle model. *Journal of Monetary Economics* 71 (2015), 99–118
- JÄGER, S., SCHOEFER, B., YOUNG, S., AND ZWEIMÜLLER, J. Wages and the value of nonemployment. *The Quarterly Journal of Economics* 135, 4 (2020), 1905–1963
- JOHNSTON, A. C., AND MAS, A. Potential unemployment insurance duration and labor supply: The individual and market-level response to a benefit cut. *Journal of Political Economy* 126, 6 (2018), 2480–2522