

## Syllabus

### Doctoral Program in Economics 2017 Macro II.2 - Heterogeneity and unemployment

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**Office hours:** By appointment, directly before or after class.

**Course Website:** <http://www.mondo.su.se/>

**Course Organisation:** 6 lectures + 2 seminars (TA-sessions).

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**Assessment:** 2 graded problem sets, 1 exam.

#### Aim of the course:

This last part of the first year macro sequence aims to generalize models beyond some of the simplifying assumptions made in the macro sequence so far. In particular, we will emphasize heterogeneity between households/consumers. We will start by looking at the empirical facts regarding inequality and then study models with heterogeneity. The second half of the course covers models of the labor market and unemployment, mainly the search and matching model.

#### General reading / books to consider

- Sargent and Ljungqvist, “Recursive Macroeconomic Theory”, MIT Press. Any edition.
- Per Krusell’s lecture notes, mainly chapter 11,  
<http://hassler-j.iies.su.se/courses/macroII/Notes/Perbook2010.pdf>
- Pissarides, Christopher (2000). Equilibrium Unemployment Theory, MIT Press, 255 pages.

#### I. Heterogeneity in macroeconomics

##### 1. Introduction and Facts

- Motivation:

- Jones and Klenow, "Beyond GDP? Welfare Across Countries and Time", 2016, forthcoming, American Economic Review
- Mian and Sufi (2014), "What Explains the 2007–2009 Drop in Employment?", Econometrica, 82: 2197–2223. doi: 10.3982/ECTA10451

- Definitions
- Characteristics of inequality measures
  - Piketty, "Capital in the 21st century", 2013, (read summaries, not the entire book!)
  - On Gini: [http://en.wikipedia.org/wiki/Gini\\_coefficient](http://en.wikipedia.org/wiki/Gini_coefficient)
- Facts about the distribution of income and wealth
- Readings on current inequality
  - For US Facts: Diaz-Gimenez, Glover Rios-Rull, "Facts on the Distributions of Earnings, Income, and Wealth in the United States: 2007 Update"
  - For Sweden:
    - \* Domeij and Flodén (2010)
- Readings on historical variations in inequality, across countries + simple theory
  - Heathcote, Perri and Violante, 2010, "Unequal We Stand: An Empirical Analysis of Economic Inequality in the United States, 1967-2006", Review of Economic Dynamics.
  - Piketti and Saez, 2006, "The evolution of top incomes : a historical and international perspective", American economic review, vol.96, no 2, pages 200-205.
  - Piketty and Zucman, 2014, "Capital is Back: Wealth-Income Ratios in Rich Countries 1700-2010", Quarterly Journal of Economics.
  - Piketty, "Capital in the 21st century" (read summaries, not the entire book!)
    - E.g. : Piketty, 2015, "About Capital in the 21st century", American economic review, vol.105, no.5, pages1-6.

All tables and figures in Piketty's book available at  
<http://piketty.pse.ens.fr/files/capital21c/en/Piketty2014FiguresTablesLinks.pdf>

Roine, Vlachos and Waldenström, 2009, "The long-run determinants of inequality: What can we learn from top income data?", Journal of Public Economics, Vol 93, pages 974-988.
- Intergenerational mobility in income
  - Chetty, Grusky, Hell, Hendren, Manduca, and Narang, "The Fading American Dream: Trends in Absolute Income Mobility Since 1940", Science, forthcoming

- Chetty, Hendren, Kline, Saez, and Turner, 2014, “Is the United States Still a Land of Opportunity? Recent Trends in Intergenerational Mobility”, American Economic Review Papers and Proceedings 104(5): 141-147.
- Jäntti, Bratsberg, Røed, Raaum, Naylor, Österbacka, Björklund & Eriksson, 2006. “American Exceptionalism in a New Light: A Comparison of Intergenerational Earnings Mobility in the Nordic Countries, the United Kingdom and the United States,” IZA Discussion Papers 1938
- Roine and Waldenström, 2012, “Intergenerational Top Income Mobility in Sweden: Capitalist Dynasties in the Land of Equal Opportunity?”, Journal of Public Economics, 96(5–6), 474–484.
- Easy to read text by Guvenen on inequality and earnings risk:  
<https://www.economicdynamics.org/newsletter-apr-2015/>

## 2. The theory behind the representative consumer

- Gorman Aggregation
- Existence of a representative consumer with complete markets
- Readings
  - Constantinides (1982)
  - Chatterjee (1994)
  - Gorman, William (1961) "On a class of preference fields", Metroeconomica.
  - See also Mas Colell, Chapter 4.

## 3. Idiosyncratic income risk and incomplete markets: Bewley/Aiyagari models

Readings

- (a)    • Main: Aiyagari (1994), “Uninsured idiosyncratic risk and aggregate savings”, Quarterly Journal of Economics.
- Huggett (1993), “The risk-free rate in heterogenous-agent incomplete-insurance economics, JEDC.
- Sargent and Ljungqvist, chapter 17 (“Incomplete markets models”)
- On constrained efficiency: Díaz-vilà, Hong, Krusell, and Ríos-Rull (2012)
- (b) Mechanism in qualitative terms

(c) Computational Algorithm

(d) Implications of Aiyagari/Bewley models

- Precautionary Savings
- Macro implications of credit contraction
  - Guerreri and Lorenzoni (2016), “Credit Crises, Precautionary Savings, and the Liquidity Trap”, mimeo, Northwestern University.
- Implications for aggregate dynamics (Krusell and Smith etc)
- Determinants of wealth inequality

(e) Confronting Aiyagari with the data

- Literature survey: De Nardi, 2015, “Quantitative models of wealth inequality: A survey,” NBER WP 21106.
- Insufficient wealth inequality
  - Krusell and Smith (1997): Heterogeneity in  $\beta$
- Consumption smoothing
  - Krueger, Mitman and Perri (2015, Handbook of Macro)

(f) Earnings risk

- Guvenen, Ozkan, Karahan and Song, 2015, “What Do Data on Millions of U.S. Workers Reveal About Life-Cycle Earnings Risk?”
- Over the cycle: Guvenen, Ozkan, Song, 2014, “The Nature of Countercyclical Income Risk”, Journal of Political Economy.

(g) Risk versus other inequality

- Guvenen, 2007, “Learning Your Earnings: Are Labor Income Shocks Really Very Persistent?,” American Economic Review, Vol. 97, No. 3, pp. 687-712

#### 4. Theories of income inequality and increasing inequality

(a) Earnings inequality

- Skill-biased Technological Change
  - **Krusell, Ohanian and Violante (2000)**, “Capital-Skill Complementarity and Inequality: A Macroeconomic Analysis”, *Econometrica*.
  - Violante (2008): [http://www.econ.nyu.edu/user/violante/Books/sbtc\\_january16.pdf](http://www.econ.nyu.edu/user/violante/Books/sbtc_january16.pdf)
- Globalization/IT: larger markets

- “The superstar economy”
  - **Jones and Kim, 2014, “A Schumpeterian Model of Top Income Inequality”,**  
<http://web.stanford.edu/~chadj/inequality.pdf>
- (b) Wealth inequality
- **Hubmer, Krusell and Smith (2016), "The Historical Evolution of the Wealth Distribution: A Quantitative-Theoretic Investigation".**

## **II. Equilibrium Unemployment Theory**

### **5. Frictional Unemployment: Stylised Facts and Basics**

- Readings
  - Hornstein, Krusell, and Violante (2005)
  - Pissarides (2000). Equilibrium Unemployment Theory.
  - See also the documentation for the 2010 Riksbank prize in memory of Alfred Nobel at [www.nobelprize.org](http://www.nobelprize.org)
  - Hornstein, Krusell, and Violante (2005)
  - Elsby

### **6. Search Models**

- Readings
  - Mortenssen and Pissarides, 1994, “Job creation and job destruction in the theory of unemployment”, *Review of Economic Studies*, Vol 61.
  - Merz, Monika, 1995, “Search in the labor market and the real business cycle”, *Journal of Monetary Economics*, Vol 36.
- The Shimer (2005) puzzle
  - The lack of unemployment volatility in a business cycle version of Mortensen and Pissarides (1994)
  - Readings
    - \* Shimer (2005)
    - \* Hornstein, Krusell, and Violante (2005)
    - \* Andolfatto (1996)
    - \* Hagedorn and Manovskii (2008)
    - \* Merz (1995)
- Endogenous Job Destruction
  - Extension of Mortensen and Pissarides (1994) to endogenous job destruction:  
Den Haan, Ramey and Watson (2000), *American Economic Review*
- Labor force participation
  - Veracierto, 2008, “On the cyclical behavior of employment, unemployment and labor force participation,” *Journal of Monetary Economics*.

- Krusell, Mukoyama, Rogerson and Şahin, “Gross Worker Flows over the Business Cycle”, working paper NY Fed.
- Vacancy costs vs. hiring costs
  - Yashiv, 2000, “The determinants of equilibrium unemployment,” *American Economic Review* Vol 90(5), pages 1297–1322.
  - Various papers by Lawrence Christiano.

## 7. Search models with heterogeneity

- Lise and Robin, 2017, “The Macrodynamics of Sorting between Workers and Firms”, *American Economic Review*

## 8. Non-search approaches to unemployment

- Efficiency wage:
  - Akerlof and Yellen, eds., 1986, “Efficiency wage models of the labor market,” Cambridge University Press.
  - Alexopoulos, 2004, “Unemployment and the business cycle”, *Journal of Monetary Economics*, Vol. 51 (2), pages 257-298.
- Incomplete consumption insurance/worker’s incentives:
  - Christiano, Trabandt and Walentin, 2012, “Involuntary unemployment and business cycles”, *Sveriges Riksbank Working Paper Series No. 238*.
- Monopolistic wage setting:
  - Gali, 2011, “The Return of the Wage Phillips Curve”, *JEEA*, vol. 9(3), pages 436-461.
- Michaillat, 2012, “Do Matching Frictions Explain Unemployment? Not in Bad Times,” *American Economic Review*.

## References

- ANDOLFATTO, D. (1996): “Business Cycles and Labor-Market Search,” *American Economic Review*, 86(1), 112–32.
- CHATTERJEE, S. (1994): “Transitional dynamics and the distribution of wealth in a neoclassical growth model,” *Journal of Public Economics*, 54(1), 97–119.
- CONSTANTINIDES, G. M. (1982): “Intertemporal Asset Pricing with Heterogeneous Consumers and without Demand Aggregation,” *The Journal of Business*, 55(2), 253–67.

- DÍAZ-VILA, J., J. H. HONG, P. KRUSELL, AND J.-V. RÍOS-RULL (2012): “Constrained Efficiency in the Neoclassical Growth Model With Uninsurable Idiosyncratic Shocks,” *Econometrica*, 80(6), 2431–2467.
- GUVENEN, F. (????): “An Empirical Investigation of Labor Income Processes,” *Review of Economic Dynamics*, 12(1), 58–79.
- HAGEDORN, M., AND I. MANOVSKII (2008): “The Cyclical Behavior of Equilibrium Unemployment and Vacancies Revisited,” *American Economic Review*, 98(4), 1692–1706.
- HORNSTEIN, A., P. KRUSELL, AND G. L. VIOLANTE (2005): “Unemployment and vacancy fluctuations in the matching model: inspecting the mechanism,” *Economic Quarterly*, (Sum), 19–50.
- MERZ, M. (1995): “Search in the labor market and the real business cycle,” *Journal of Monetary Economics*, 36(2), 269–300.
- MORTENSEN, D. T., AND C. A. PISSARIDES (1994): “Job Creation and Job Destruction in the Theory of Unemployment,” *Review of Economic Studies*, 61(3), 397–415.
- SHIMER, R. (2005): “The Cyclical Behavior of Equilibrium Unemployment and Vacancies,” *American Economic Review*, 95(1), 25–49.