

# Course Outline

Here is a rough outline for the the course:

- Introduction, stylized facts and “puzzles” in macro. Simple dynamic economy and the neoclassical growth model, covering a key method: recursive competitive equilibrium.
- Different macroeconomic household structures: OG vs. dynastic vs. in-between, heterogeneity in one or more dimensions.
- Wealth inequality: models with complete markets, and a discussion of facts surrounding the distribution of wealth, income and consumption.
- Models with (exogenously) incomplete markets: equilibrium determination of wealth inequality. Discussion of models with endogenous default.
- Aggregate uncertainty. Models and questions: Ricardian equivalence, the welfare costs of business cycles, asset pricing, portfolio choice, aggregate labor supply, and other applications.
- Heterogeneity and macroeconomic policy: implications of heterogeneity for the transmission and efficacy of monetary and fiscal policy.
- Computation of incomplete markets models: steady states, MIT shocks and aggregate uncertainty.

# Evaluation

The course will be evaluated via a take-home examination that will contain a combination of theoretical problem and a quantitative project. The take-home exam will be due via email to kurt.mitman@iies.su.se on XXXX by 23:59 Halle time.

# Course Materials

The course will make use of several sources. A detailed list of papers is included at the end of this document. Notes will be distributed to the students ahead of the course. The main textbook that we will follow for the section on dynamic programming is:

Nancy L. Stokey and Robert E. Lucas (1989), *Recursive Methods in Economic Dynamics*, Harvard University Press.

While strictly speaking it is not required for the course, it's a good book for any macroeconomist to have.

# Course Topics

## 1. Incomplete markets, no aggregate uncertainty

- Aiyagari, S.R. (1993), "Explaining Financial Market Facts: the Importance of Incomplete Markets and Transaction Costs," Federal Reserve Bank of Minneapolis Quarterly Review 17 (No. 1), 17–31.
- Aiyagari, S.R. (1994), "Uninsured Idiosyncratic Risk and Aggregate Saving," Quarterly Journal of Economics 109, 659–684.
- Castañeda, A., J. Díaz-Giménez, and J.-V. Ríos-Rull (2003), "Accounting for the U.S. Earnings and Wealth Inequality," Journal of Political Economy 111, 814–857.
- Covas, F. (2005), "Uninsured Idiosyncratic Production Risk with Borrowing Constraints", manuscript (forthcoming in the Journal of Economic Dynamics and Control).
- Deaton, A. (1991), "Saving and Liquidity Constraints," Econometrica 59, 1221–1248.
- Huggett, M. (1993), "The Risk-Free Rate in Heterogeneous-Agents, Incomplete Markets Economies," Journal of Economic Dynamics and Control 17, 953–969.
- Huggett, M. (1997), "The One-Sector Growth Model with Idiosyncratic Shocks: Steady States and Dynamics," Journal of Monetary Economics 39, 385–403.
- Ljungqvist, L. and T.J. Sargent (2004), Chapters 16 and 17 in Recursive Macroeconomic Theory (Second Edition), MIT Press.
- Storesletten, K., C. Telmer, and A. Yaron (2004), "Consumption and Risk Sharing over the Life Cycle," Journal of Monetary Economics 51, 609–633.

## 2. Heterogeneity and business cycle analysis

- Den Haan, W. (2001) “The Importance of the Number of Different Agents in a Heterogeneous Asset-Pricing Model,” *Journal of Economic Dynamics and Control* 25, 721–746.
- Heaton, J. and D.J. Lucas (1996), “Evaluating the Effects of Incomplete Markets on Risk Sharing and Asset Pricing,” *Journal of Political Economy* 104, 443–487.
- Krusell, P. and A.A. Smith, Jr. (1997), “Income and Wealth Heterogeneity, Portfolio Selection, and Equilibrium Asset Returns,” *Macroeconomic Dynamics* 1, 387–422.
- Krusell, P. and Smith, A. A. (1998). Income and wealth heterogeneity in the macroeconomy. *Journal of Political Economy*, 106(5):867–896
- Krusell, P. and A.A. Smith, Jr. (2006), “Quantitative Macroeconomic Models with Heterogeneous Agents” (joint with Anthony A. Smith, Jr.); forthcoming in Blundell, R., Newey, W., and Persson, T. (eds), *Advances in Economics and Econometrics: Theory and Applications*, Ninth World Congress, Cambridge University Press.
- Krueger, D., Mitman, K., and Perri, F. (2016). Macroeconomics and heterogeneity, including inequality. In Taylor, J. and Uhlig, H., editors, *Handbook of Macroeconomics, second edition*. Elsevier
- Kubler, F. and K. Schmedders (2002), “Recursive Equilibria in Economies with Incomplete Markets,” *Macroeconomic Dynamics* 6, 284–306.
- Miao, J. (2003), “Competitive Equilibria of Economies with a Continuum of Consumers and Aggregate Shocks,” manuscript [troi.cc.rochester.edu/mias/shockag13.pdf](http://troi.cc.rochester.edu/mias/shockag13.pdf).
- Telmer, C. (1993), “Asset Pricing Puzzles and Incomplete Markets,” *Journal of Finance* 48, 1803–1832.

## 3. Precautionary savings, Labor market risk and Aggregate Fluctuations

- Ravn, M. O. and Sterk, V. (2018). Macroeconomic fluctuations with hank & sam: an analytical approach. Working paper
- Bayer, C., Lüttinge, R., Pham-Dao, L., and Tjaden, V. (2015). Precautionary savings, illiquid assets, and the aggregate consequences of shocks to household income risk. Working paper. Revise and resubmit, *Econometrica*
- Den Haan, W., Rendahl, P., and Riegler, M. (2015). Unemployment (fears) and deflationary spirals. CEPR Discussion Paper 10814
- Ravn, M. O. and Sterk, V. (2013). Job uncertainty and deep recessions. Working paper. conditionally accepted, *Journal of Monetary Economics*
- Guerrieri, V. and Lorenzoni, G. (2015). Credit crises, precautionary savings, and the liquidity trap. mimeo

## 4. Incomplete markets, heterogeneity, and monetary policy

- Gornemann, N., Kuester, K., and Nakajima, M. (2012). Monetary policy with heterogeneous agents. Working paper 12-21, Federal Reserve Bank of Philadelphia
- Kaplan, G., Moll, B., and Violante, G. (2016). Monetary policy according to hank. Working paper

- Werning, I. (2015). Incomplete markets and aggregate demand. Working paper
- Auclert, A. (2016). Monetary policy and the redistribution channel. Working paper
- Lütticke, R. (2015). Transmission of monetary policy with heterogeneity in household portfolios. Working paper
- Hagedorn, M., Manovskii, I., and Mitman, K. (2017). Monetary policy in incomplete market models: Theory and evidence. mimeo

## 5. Fiscal Policy and Unconventional Monetary Policy

- McKay, A., Nakamura, E., and Steinsson, J. (2015). The power of forward guidance revisited. Working paper. forthcoming, *American Economic Review*
- Hagedorn, M., Manovskii, I., Luo, J., and Mitman, K. (2018a). Forward guidance. mimeo
- Cochrane, J. H. (2015). The new-keynesian liquidity trap. Working paper, University of Chicago Booth School of Business
- Hagedorn, M., Manovskii, I., and Mitman, K. (2018b). The fiscal multiplier. available at <http://papers.nber.org/sched/efgw18>
- Brinca, P., Holter, H. A., Krusell, P., and Malafry, L. (2016). Fiscal multipliers in the 21st century. *Journal of Monetary Economics*, 77:53 – 69
- Oh, H. and Reis, R. (2012). Targeted transfers and the fiscal response to the great recession. *Journal of Monetary Economics*, 59, Supplement:50 – 64
- McKay, A. and Reis, R. (Forthcoming). The role of automatic stabilizers in the u.s. business cycle. *Econometrica*
- Farhi, E. and Werning, I. (2013). Fiscal multipliers: Liquidity traps and currency unions. mimeo
- Bhandari, A., Evans, D., Golosov, M., and Sargent, T. (2017). Fiscal policy and debt management with incomplete markets. *Quarterly Journal of Economics*
- Bhandari, A., Evans, D., Golosov, M., and Sargent, T. (2018). Inequality, business cycles and monetary-fiscal- policy

## 6. Housing and Aggregate Fluctuations

- Kaplan, G., Mitman, K., and Violante, G. (2017). The housing boom and bust: Model meets evidence. Working paper
- Hedlund, A. (2015). Failure to launch: Housing, debt overhang, and the inflation option during the great recession
- Hedlund, A., Karahan, F., Mitman, K., and Ozkan, S. (2016). Monetary policy, heterogeneity and the housing channel. Working paper