40315 Advanced Macroeconomics 1
Topics in Macroeconomics with Incomplete Information and Behavioral Macroeconomics

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The course is divided into three related sections.

Topic I is about Information Economics and Public Finance. We will review models of limited commitment and optimal dynamic mechanism design and apply them to study optimal income and capital taxation and social insurance. As well, we will briefly introduce the methodology of recursive contracts. For example, in studying the design of efficient unemployment compensation and 'welfare-to-work' schemes, we will analyze the various trade-offs involved in implementing such systems, with particular emphasis on balancing the efficiency costs (e.g. the potential 'moral hazard' or perverse incentive effects on labour supply and private saving) against the welfare gains provided by the risk sharing features of the social insurance institutions of the labour market. The institutional picture will be completed by a review of the most recent contributions on optimal capital taxation in presence of asymmetric information and limited commitment.

Topic II is about incomplete information in macroeconomics. We will review the theory of of global games and beauty context and apply them to Macroeconomics. This topic is mean to cover macro models with what are also known as News, Noise, Uncertainty, and Confidence Shocks. They are island models where actions of the agents are strategically complement. As well, we will be able to address issues such as 'Central Bank Design', namely the role of a benevolent planner who can make more or less precise public announcements.

Topic III is about behavioural economics and information. We will cover a few topics in the new growing field of behavioural macroeconomics and address the issue of optimal taxation in this context. Behavioral Macroeconomics is a waste field, we will concentrate on issues related to defining welfare and optimal taxation in this context. In this part we will enrich the neoclassical approach to macroeconomics, by emphasizing psychological and sociological factors, such as for example: cognitive biases, time inconsistent and 'non-rational' addictive behavior, fairness, and social status. We will study both positive and normative implications of such factors.

Objetives: This class is intended for students in their second year of their PhD studies. Our objectives are twofold. First, students will acquire a deep understanding of fundamental results in the areas we will study. Second, students will learn how to read and present a published article, how to make a critical assessment of a paper, and how to pose a precise research question. To achieve the objectives of the class, students will be required to participate actively in the class. The class format includes regular lectures and student presentations. A key component of the class are discussions of the key steps in analytical developments, and possible improvements/extensions of the papers we will study.

Examination: The evaluation of students taking the course for credit will be based on: (i) the presentation of one paper (from the list below) to the class; (ii) performance in the homework assignments and on the term-paper; (iii) participation in class. NB: The term-paper can be replaced by either a carefully done referee report or a research proposal on a topic somewhat related to class content.

Notes on the syllabus: Papers with a star are general reference. The are useful to place the papers in the literature and/or to acquire the needed tools.

Part I: Limited Commitment, Information, and Public Finance

Limited Commitment

- Kehoe, T. and D. Levine (1993): Debt Constrained Asset Markets, *Rev. Econ. Studies*, 865-888.

★ Kehoe, T. and D. Levine (2001): Liquidity Constrained vs. Debt Constrained Markets, *Econometrica*, 575-598

- Alvarez, F. and U. Jermann (2000): Efficiency, Equilibrium, and Asset Pricing with Risk of Default, *Econometrica*, 775-798.

- Hellwig, C. and G. Lorenzoni (2009): Bubbles and Self-Enforcing Debt, *Econometrica* 77(4), 1137-1164.

- Geanakoplos, J. (2010): 'The Leverage Cycle,' Cowles Foundation Discussion Paper No. 1304.

- Geanakoplos, J. (2010):"Liquidity, Default, and Crashes: Endogenous Contracts in General Equilibrium," Cowles Foundation Discussion Paper No. 1316.

★ Kiyotaki, N. and J. Moore (1997): Credit Cycles. *Journal of Political Economy*, 105(2), pp. 211-48.

- Lorenzoni, G. (2008): Inefficient Credit Booms, *Review of Economic Studies* 75 (3), 809-833

- Sinsek, A. (2011): "Belief Disagreement and Collateral Constrains," mimeo, Harvard University.

- Bernanke, B. and M. Gertler (1989): Agency Costs, Net Worth and Business Fluctuations, *American Economic Review*, 79, 14-31.

- Holmstrom, B. and J. Tirole (1997): Financial Internediation, Loanable Funds and the Real Sector, *Quarterly Journal of Economics* 112, 663-691.

- Farhi E. and I. Werning (2016): 'A Theory of Macroprudential Policies in the Presence of Nominal Rigidities', *Econometrica*, 84(5).

Economic of Information and Public Finance

- ★ Stole, L. (2001) 'Lecture Notes on the Theory of Contracts and Organizations,' mimeo, Chicago University (available for free on the web).

- Bergemann D. and S. Morris (2019): 'Information Design: A Unified Perspective,' *The Journal of Economic Literature,* 57(1), 44-95.

- Laura Doval and Vasiliki Skreta (2020): 'Mechanism Design with Limited Commitment,' mimeo.

- ★ Mirrlees, J. (1971), 'An Exploration in the Theory of Optimum Income Taxation,' *Review of Economic Studies*, 38(2), 175-208.

- Saez, E., (2001), "Using Elasticities to Derive Optimal Income Tax Rates," *Review of Economic Studies*, 68, 205-229.

- Saez, E., (2002), "Optimal Income and Transfer Programs: Intensive Versus Extensive Labor Supply Responses," *Quarterly Journal of Economics*, 117, 1039-1073.

- Hopenhayn, H. and J.P. Nicolini (1997), "Optimal Unemployment Insurance," *Journal of Political Economy,* 105(2): 412-438.

- Straub L. and I. Werning (2020): 'Positive Long-Run Capital Taxation: Chamley-Judd Revisited', *American Economic Review*, 110(1): 86–119.

- Pavoni, N. and G. L. Violante (2007) "Optimal Welfare-to-Work Programs," *Review of Economic Studies*, January.

- Landais, C., P. Michaillat, E. Saez (2011), "Optimal Unemployment Insurance over the Business Cycle," http://www.nber.org/papers/w16526.pdf

- Chamley, Christophe, Optimal Taxation of Capital Income in General Equilibrium with Infinite Lives, Econometrica, 1986, vol. 54, pp.607-622.

- Golosov, M., M. Troshkin, and A. Tsyviski, (2010), 'Optimal Taxation: Merging Micro and Macro Approaches,' *Journal of Money, Credit and Banking.*

- ★ Kocherlakota, N. (2010), *The New Dynamic Public Finance,* Princeton University Press.

- Kocherlakota, N. (2005): "Zero Expected Wealth Taxes: A Mirrlees Approach to Dynamic Optimal Taxation," *Econometrica* 73 (5), 1587–1621.

- Golosov, M. and A. Tsyvinski (2007): Optimal Taxation with Endogenous Insurance Markets, *Quarterly Journal of Economics*, May, 487-534.

- Gottardi, P. and N. Pavoni (2011): 'Ramsey Asset Taxation Under Asymmetric Information,' mimeo.

- Scheuer, F. (2011): Pareto-Optimal Taxation with Aggregate Uncertainty and Financial Markets, *the Journal of Economic Theory*.

Part II: Macroeconomics and Information Economics

★ Velkamp, L., (2011), "Information Choice in Macroecnomics and Finance," Princeton University Press.

★ Angeletos G-M, Cheng Lian (2016) "Incomplete Information in Macroeocnomics: Accomodating Frictions in Coordinations." *Handbook of Macroeconomics.*

• Sinsek, A. (2011): "Belief Disagreement and Collateral Constrains," *Econometrica,* .

• Sylverie Herbert (2020): 'State-Dependent Central Bank Communication with Heterogeneous Beliefs,' mimeo.

★ Kamenica, Emir, and Matthew Gentzkow (2011) 'Bayesian Persuasion.' *American Economic Review,* 101 (6): 2590?615.

• George-Marios Angeletos and Jennifer La'O (2009): 'Noisy business cycles.' NBER Macroeconomics.

• George-Marios Angeletos and Jennifer La'O (2013): 'Sentiments'. *Econometrica*, 81(2):739-779.

• George-Marios Angeletos and Alessandro Pavan (2007): 'Efficient use of information and social value of information.' *Econometrica,* 75(4):1103-1142, 2007.

• Robert B. Barsky and Eric R. Sims. Information, animal spirits, and the meaning of innovations in consumer confidence. *American Economic Review*, 102(4):1343-77, June 2012.

• Paul Beaudry and Franck Portier. Stock prices, news, and economic fluctuations. *The American Economic Review*, 96(4):1293-1307, 2006.

• Paul Beaudry and Franck Portier. Understanding noninflationary demand-driven business cycles. NBER Macroeconomics Annual, 28(1):69-130, 2014.

• Anmol Bhandari, Jaroslav Borovicka, and Paul Ho. Survey data and subjective beliefs in business cycle models. Working Paper, 2019.

• Jean-Paul L'Huillier, and Guido Lorenzoni. News, Noise, and Fluctuations: An Empirical Exploration. *American Economic Review,* 103(7):3045-3070, 2013.

• Cosmin Ilut and Martin Schneider. Ambiguous business cycles. *American Economic Review*, 104(8): 2368-2399, 2014.

• Guido Lorenzoni. A theory of demand shocks. *American Economic Review*, 99(5):2050-84, 2009.

Part III: Behavioural Macroeconomics, Information, and Public Finance

- Bernheim, D. and Rangel, (2009), "Behavioral Welfare Economics," *Journal of the European Economic Association*, Vol. 7, No. 2/3, pp. 267-319

★ Bernheim, D. and D. Taubinsky, (2018), "Behavioral Public Economics," Handbook of Behavioral Economics.

★ Tahler, R., C. Sunstein "Libertarian Paternalism," http://www.jstor.org/stable/pdfplus/3132220.pd

- Frederick, Shane, George Lowenstein, and Ted O'Donoghue (2002) "Time Discounting and Time Preference: A Critical Review." *Journal of Economic Literature,* 40(2): 351-401.

- Akerlof G.A., and R.E. Kranton (2000) "Economics And Identity," *Quarterly Journal of Economics*, vol. 115(3): 715-753.

★ Krusell, Per, Anthony Smith, and Burhanettin Kuruscu. (2010) "Temptation and Taxation." *Econometrica,* 78(6): 2063-84

- O'Donoghue, Ted, and Matthew Rabin, (2006), 'Optimal Sin Taxes,' *Journal of Public Economics*, 90: 1825-1849.

- Yazici, H., and N. Pavoni (2017), "Optimal Bequest Taxation and Capital Subsidies over the Lifecycle," *the Economic Journal.*

- Giustinelli P. and N. Pavoni (2017): 'The Evolution of Awareness and Belief Ambiguity During the Process of High School Track Choice.' *Review of Economic Dynamics,* 25, April: 93-120.

- Ostrizek F. and D. Shiskin (2020): 'Screening with Frames,' forthcoming *the Review of Economic Studies*.

- Hogg, M. A., D. J. Terry and K. M. White, (2005), "A Tale of Two Theories: A Critical Comparison of Identity Theory with Social Identity Theory," *Social Psychology Quarterly,* http://www.jstor.org/stable/pdfplus/2787127.pdf

- Frank, R. G., (1982) "Are Workers Paid their Marginal Product?" *American Economic Review*, Vol. 74, No. 4, pp. 549-571.

- Cabrales, A., A. Calvo-Armengol, N. Pavoni, (2008), "Social Preferences, Skill Segregation, and Wage Dynamics, *Review of Economic Studies*, 75, January: 65-98

- Yu Pei Cheng, (2021), 'Optimal Retirement Policies with Present-Biased Agents,' *the Journal of the European Economic Association*.

- S. Esteban, E. Miyagawa (2006): 'Optimal Menu of Menus with Self-Control Preferences'; mimeo.

- C. Moser, P. Olea de Souza e Silva (2019): 'Optimal Paternalistic Saving Policies', mimeo.

★ Amador, M., Werning, I. and Angelatos, G. M. (2006), "Commitment vs. Flexibility", *Econometrica*, 74, 365–396.

- P. Bond, G. Sigurdsson (2018): 'Commitment Contracts' *The Review of Economic Studies*.

- E. Saez, S. Stantcheva (2016): 'Generalized Social Marginal Welfare Weights for Optimal Tax Theory'; *American Economic Review*

- Hendren, Nathaniel et al., (2020) 'Measuring Economic Efficiency Using Inverse-Optimum Weights.' *Journal of Public Economics* 187. NBER Working Paper 20351.

- Jackson, Matthew O and Leeat Yariv (2015) 'Collective dynamic choice: the necessity of time inconsistency,' *American Economic Journal: Microeconomics,* 7 (4), 150-78.

- Farhi E. and X. Gabaix (2020): 'Optimal Taxation with Behavioral Agents' *American Economic Review.*

- Boccanfuso J. and A. Ferey (2022): 'Inattention and Taxation Bias,' *mimeo*

- Furukawa C. (2022): 'Tax Transparency and Social Welfare': The Role of Government Commitment, *mimeo.*

- Moore D. T. and J. Slemrod (2022) 'Optimal Tax Systems with Endogenous Behavioral Biases', *The Journal of Public Economics*.