

Macroeconomic Theory III

Fall 2020

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Course Description and Objectives

There are three goals for this course. First, to get a solid understanding of how the research frontier in macroeconomics understands labor markets and consumption/saving decisions and what some of the open questions are. Second, to understand how a good quantitative/empirical macro paper is crafted. We will look at a small subset of macroeconomics, which are the questions that interest us the most. However, many of the concepts and principles apply to other areas of economics as well. And finally, as a byproduct, the students will hopefully find questions they may want to answer in their dissertations. We will start the class by covering basic econometrics tools typically used in structural macro.

Course Requirements and Grading

The course is listed as HyFlex. Classes will be live streamed through Zoom and will also be recorded. I will upload the recorded classes on Dropbox, I will send you the link by email.

Access to a webcam is required for students participating remotely in this course. Webcams must be turned on (state when webcams are required to be on and the academic basis for requiring them to be on). (Example: Webcams must be turned on during exams to ensure the academic integrity of exam administration.)

Your course grade will be determined by students' presentations of several papers during the course, homeworks and a final project. The grade will be determined from your homeworks, presentations and a final project. Homeworks (including independent data search and analysis) are worth 30%, presentations (including your participation in other students presentations) 30%, and final project (40%).

We will provide a guide to prepare an effective presentation. How well the presenter understood the paper and how well she/he answers the questions from me and other students in the audience will form the basis for the grade.

The HWs are a combination of problems to practice the concepts presented in the lectures and work that require the use of data. We will introduce you with the most common data sets used in empirical macro and we may require you to get familiarized with a data set of your

choice and then make progress using it in subsequent homeworks and hopefully using it in your final project.

The final project needs to be submitted by the end of the course. It will consist of a replication of a paper or a working paper on your own. The idea is that the replication of the paper you choose serves as a seed for your own future project. We highly encourage students to combine theory with data using different methodologies. Students will present at least twice (depending a bit on enrollment) and the final presentation is supposed to be based on the final project.

This kind of courses have served as the beginning of working papers sometimes coauthored with faculty. (We are happy to write with students, but it is by no means a requirement. If you aim for a job market paper, you do not want that co-authored with faculty.) We think this is a great opportunity to show you interests in the topics and your abilities as researchers. For these reasons, we hope you can go beyond the replication of a paper and extend a paper in the direction you think is best.

Communication

You can reach us anytime by email, walking in, or by appointment. We will have a web site in which we upload all the course content and updates (including HWs).

Tentative List of Topics

1. Detailed theory of VARs and structural VARs. How impulse response functions and variance decompositions are calculated.
2. Generalized Method of Moments (GMM).
3. Estimation of Income Processes.
4. Recent work in structural consumption models.
5. Overlapping Generations Models
6. Heterogeneous Agents Models: Theory and Computation
7. Heterogeneous firms and firm dynamics (Lucas Span of Control and Hopenhayn, 1992)
8. The use of micro data sets in empirical macroeconomics.
9. Facts on labor market, income and wealth.
10. Recent Work on Occupational Choice Models

Students with Disabilities

The College of Liberal Arts and Social Sciences, in accordance with 504/ADA guidelines, is committed to providing reasonable academic accommodations to students who request them. Students seeking accommodation must register with the Center for Students with Disabilities (CSD) 713-743-5400 and present approved documentation to me as soon as possible.

Academic Honesty

To cultivate an environment of academic integrity, the University of Houston expects students to abide by the University's Undergraduate Academic Honesty Policy, found in the Undergraduate Catalog.

<http://www.uh.edu/academic-honesty-undergraduate%7D%7B><http://www.uh.edu/academic-honesty>

Counseling and Psychological Services

Counseling and Psychological Services (CAPS)—<http://www.uh.edu/caps>—are available for students having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS by calling 713-743-5454 during and after business hours for routine appointments or if you or somebody you know is in crisis. The “Let’s Talk” program provides a drop-in consultation service at convenient locations and hours around campus.

http://www.uh.edu/caps/outreach/lets_talk.html%7D%7Bhttp://www.uh.edu/caps/outreach/lets_talk.h

Excused Absence Policy

For details on the UH Undergraduate Excused Absence Policy, please review the following guidelines for both planned and unplanned absences:

<https://uh.edu/provost/policies-resources/student/excused-absence-policy/%7D%7B><https://uh.edu/p>

Student Conduct Policy

CLASS students are expected to abide by the University of Houston's Code of Student Conduct:

http://www.uh.edu/dos/programs_and_services/behavior_and_conduct.html%7D%7B<http://www.uh.edu/do>

Although we do not take attendance we require students to be on time for class, we want to avoid distortions in the dynamic of the class. The same idea applies for the use of mobile devices, you should silence them before entering class.

Sexual Misconduct Policy

In accordance with the UHS Sexual Misconduct Policy, your instructor is a responsible employee for reporting purposes under Title IX regulations and state law and must report incidents of sexual misconduct (sexual harassment, non-consensual sexual contact, sexual assault, sexual exploitation, sexual intimidation, intimate partner violence, or stalking) about which they become aware to the Title IX office. Please know there are places on campus where you can make a report in confidence. More information can be found on the Title IX website at .

Face Covering Policy

To reduce the spread of COVID-19, the University requires face coverings on campus including classrooms for both faculty and students. Face coverings must cover your mouth and nose and be worn throughout the class session. A mask with a valve is not considered an adequate face covering and should not be used, as it can expel exhaled air, increasing the risk to others.

Eating or drinking during class is discouraged and is not an excuse for removing the face covering for any extended length of time. For additional information on the use of face coverings, please see Face Covering FAQs. Failure to comply with the requirement to wear a face covering in class will result in your being asked to leave the classroom immediately and a disciplinary referral through the Dean of Students Office. Requests for accommodations relating to the face covering policy may be directed to the Center for Students with DisABILITIES (CSD).

Required Daily Health Self-Assessment

Your presence in class each session means that you have completed a daily self-assessment of your health/exposure and you: â€ Are NOT exhibiting any Coronavirus Symptoms â€ Have NOT tested positive for COVID-19 â€ Have NOT knowingly been exposed to someone with COVID-19 or suspected/presumed COVID-19 If you are experiencing any COVID-19 symptoms that are not clearly related to a pre-existing medical condition, do not come to class. Please see COVID-19 Diagnosis/Symptoms Protocols for what to do if you experience symptoms and Potential Exposure to Coronavirus for what to do if you have potentially been exposed to COVID-19. Consult the (select: Undergraduate Excused Absence Policy or Graduate Excused Absence Policy) for information regarding excused absences due to medical reasons.

Excused Absence Policy

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston Undergraduate Excused Absence Policy and Graduate Excused Absence Policy for reasons including: medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Additional policies address absences related to military service, religious holy days, pregnancy and related conditions, and disability.

Recording of Class

Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the Center for Students with DisABILITIES. If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructorâ€™s recordings for their own studying and notetaking. Instructorâ€™s recordings are not authorized to be shared with anyone without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.

Syllabus Changes

Due to the changing nature of the COVID-19 pandemic, please note that the instructor may need to make modifications to the course syllabus and may do so at any time. Notice of such changes will be announced as quickly as possible through (specify how students will be notified of changes).

Course Readings

This is the tentative list of papers corresponding to each of the topics described above. We will discuss them at different levels of depth.

1. Detailed theory of VARs and structural VARs. How impulse response functions and variance decompositions are calculated.
 - (a) Bent's notes.
 - (b) Sims's notes.
 - (c) Stock and Watson' notes.
 - (d) Barsky and Sims
2. Generalized Method of Moments (GMM).
 - (a) Bent's notes.
 - (b) Andersen-Sorensen GMM 1996
 - (c) Andersen-Sorensen EMM 1999
 - (d) Hansen-Singleton
3. Heterogeneous Agents Models: Theory and Computation
 - (a) Bewley, T. (1977): "The permanent income hypothesis: A theoretical formulation," *Journal of Economic Theory*, 16(2), 252-92.
 - (b) Aiyagari, Rao "Uninsured Idiosyncratic Risk and Aggregate Saving". *Quarterly Journal of Economics*, 109(3): 659-684.
 - (c) Huggett, Mark "The risk-free rate in heterogeneous-agent incomplete-insurance economies" *Journal of Economic Dynamics and Control*, 17(5-6): 953-959.
 - (d) Huggett, Mark "Wealth distribution in life-cycle economies" *Journal of Monetary Economics*, 38(3): 469-494.
 - (e) Krusell, P. and J. Smith, Anthony A. (1998): "Income and Wealth Heterogeneity in the Macroeconomy," *The Journal of Political Economy*, 106, 867-896.
 - (f) Acemoglu (2009), ch. 17.4
4. Heterogeneous firms and firm dynamics
 - (a) Lucas, Robert Jr. (1978). "On the Size Distribution of Firms". *The Bell Journal of Economics*, 9(2): 508-523.
 - (b) Hopenhayn, Hugo (1992). "Entry, Exit, and firm Dynamics in Long Run Equilibrium". *Econometrica*, 60(5): 1127-1150.
 - (c) Hopenhayn, Hugo and Richard Rogerson (1993). "Job Turnover and Policy Evaluation: A General Equilibrium Analysis". *Journal of Political Economy*, 101(5): 915-938
 - (d) Atkeson, Andrew and Patrick Kehoe (2007). "Modeling the Transition to a New Economy: Lessons from Two Technological Revolutions". *American Economic Review*, 97(1): 64-88.
 - (e) Buera, Francisco and Yongseok Shin (2013). "Financial frictions and the persistence of history: A quantitative exploration". *Journal of Political Economy*, 121(2): 221-272.

- (f) Jovanovic, Boyan (1982). "Selection and the Evolution of Industry". *Econometrica*, 50(3): 649-670.
 - (g) Restuccia, Diego and Richard Rogerson (2008). "Policy distortions and aggregate productivity with heterogeneous establishments". *Review of Economic Dynamics*, 11(4): 707-720.
 - (h) Hsieh, Chang-Tsai and Peter Klenow (2009). "Misallocation and manufacturing TFP in China and India". *Quarterly Journal of Economics*, 124(4): 1403-1448.
5. Facts on labor market, income and wealth.
- (a) Moritz Khun. "On the persistence of income shocks over the life cycle: Evidence, theory, and implications". *Review of Economic Dynamics*, 101(3): 471-75.
 - (b) Castaneda, A., J. D'Aziz-Gimenez, and J.-V. Rios-Rull (1998): "Exploring the income distribution business cycle dynamics," *Journal of Monetary Economics*, 42, 93-130.
 - (c) Moritz, Victor "Wage Risk and Employment Risk over the Life Cycle." *American Economic Review*, 100(4): 1432-67.
6. Estimation of Income Processes
- (a) Karahan, Fatih and Serdar Ozkan (2013). "On the persistence of income shocks over the life cycle: Evidence, theory, and implications". *Review of Economic Dynamics*, 101(3): 471-75.
 - (b) Cubas, G., and P. Silos (2017). "Career Choice and the Risk Premium in the Labor Market". *Review of Economic Dynamics*, 26, 1-18
 - (c) Low, Hamish, Costas Meghir, and Luigi Pistaferri (2010). "Wage Risk and Employment Risk over the Life Cycle." *American Economic Review*, 100(4): 1432-67.
 - (d) K. Storesletten, C.I. Telmer, A. Yaron (2004). "Cyclical dynamics in idiosyncratic labor market risk." *Journal of Political Economy*, 112 (3) (2004), pp. 695-717.
 - (e) Guvenen, F. (2007). "Learning your earning: Are labor income shocks really very persistent?". *American Economic Review*, 97 (3), 687-712.
 - (f) F. Guvenen (2009). "An empirical investigation of labor income processes." *Review of Economic Dynamics*, 12 (1) (2009), pp. 58-79.
 - (g) Dmytro Hryshko (2012). "Labor income profiles are not heterogeneous: Evidence from income growth rates." *Quantitative Economics* 3 (2012), 177-209.
 - (h) F. Guvenen and Antohny A. Smith (2014). "Inferring Labor Income Risk and Partial Insurance From Economic Choices." *Econometrica*, 82 (6), pp. 2085-2129.
 - (i) Sam Schulhofer-Wohl (2018). "The Age-Time-Cohort Problem and the Identification of Structural Parameters in Life-Cycle Models." *Quantitative Economics* 9(2), 643-658, July 2018.
 - (j) Fatih Guvenen, Sam Schulhofer-Wohl, Jae Song, and Motohiro Yogo (2017). "Worker Betas: Five Facts About Systematic Earnings Risk." *American Economic Review Papers and Proceedings* 107(5), 398-403, May 2017.
 - (k) K. Storesletten, C.I. Telmer, A. Yaron (2001). "The welfare cost of business cycles revisited: Finite lives and cyclical variation in idiosyncratic risk". *European Economic Review*, 45, pp. 1311-1339

- (l) Fatih Guvenen, Serdar Ozkan and Jae Song (2014). "The Nature of Countercyclical Income Risk," *Journal of Political Economy*, University of Chicago Press, vol. 122(3), pages 621-660.
- (m) Fatih Guvenen, Fatih Karahan, Serdar Ozkan and Jae Song (2015). "What Do Data on Millions of U.S. Workers Reveal about Life-Cycle Earnings Risk?," *NBER Working Papers 20913*, National Bureau of Economic Research, Inc.

7. Recent work in (structural) consumption models.

- (a) Richard Blundell, Luigi Pistaferri, and Ian Preston, (2008): "Consumption Inequality and Partial Insurance," *American Economic Review* 98(5), pp. 1887-1921. (GMM type estimation.)
- (b) Greg Kaplan and Giovanni Violante, Giovanni L. (2010): "How Much Consumption Insurance beyond Self-Insurance?" *American Economic Journal: Macroeconomics*, 2(4), pp. 53-87. (Structural model related to previous paper.)
- (c) Hamish Low, Costas Meghir, and Luigi Pistaferri (2010): "Wage Risk and Employment Risk over the Life Cycle" *American Economic Review*, 100(4): pp. 1432-67.
- (d)
- (e) J. Heathcote, Storesletten K., and G.L. Violante (2009). "Quantitative macroeconomics with heterogeneous households." *Annual Review of Economics*, 1(1): 319-354.
- (f) J. Heathcote, Storesletten K., and G.L. Violante (2009). "Insurance and opportunities: a welfare analysis of labor market risk." *Journal of Monetary Economics*, 55 (3) (2008), pp. 501-525.
- (g) D. Krueger and Jesus Fernandez-Villaverde (2006). "Consumption over the Life Cycle: Facts from the Consumer Expenditure Survey." *Review of Economics and Statistics*, Vol. 89(3), pp. 552-565. item D. Krueger and Fabrizio Perri (2011). "How Do Households Respond to Income Shocks." *manuscript*.
- (h) Greg Kaplan (2012). "Inequality and the life cycle." *Quantitative Economics* 3 (2012), 471-525.
- (i) Greg Kaplan and Giovanni L. Violante (2018). "MICROECONOMIC HETEROGENEITY AND MACROECONOMIC SHOCKS." *NBER Working Paper 24734*.
- (j) Andreas Fuster, Greg Kaplan and Basit Zafar (2018). "What Would You Do with \$500? Spending Responses to Gains, Losses, News and Loans." *NBER Working Paper 24734*.
- (k) Sam Schulhofer-Wohl (2011). "Heterogeneity and Tests of Risk Sharing." *Journal of Political Economy* 119(5), 925-58, October 2011.
- (l) Mariacristina De Nardi, Giulio Fella and Gonzalo Paz Pardo, 2016. "The Implications of Richer Earnings Dynamics for Consumption and Wealth," *NBER Working Papers 21917*, National Bureau of Economic Research, Inc.
- (m) Mariacristina De Nardi, Giulio Fella and Gonzalo Paz Pardo, 2018. "Nonlinear Household Earnings Dynamics, Self-insurance, and Welfare," *NBER Working Papers 24326*, National Bureau of Economic Research, Inc.
- (n) Mark Aguiar, Erik Hurst, 2008. "The Increase in Leisure Inequality," *NBER Working Papers 13837*, National Bureau of Economic Research, Inc.
- (o) Mark Aguiar and Erik Hurst, 2013. "Deconstructing Life Cycle Expenditure," *Journal of Political Economy*, University of Chicago Press, vol. 121(3), pages 437-492.

- (p) Orazio Attanasio, Erik Hurst and Luigi Pistaferri, 2012. "The Evolution of Income, Consumption, and Leisure Inequality in The US, 1980-2010," NBER Working Papers 17982, National Bureau of Economic Research, Inc.
- (q) Standard Search and Matching models for understanding aggregate labor markets.
- (r) Vegard M. Nygaard, Bent E. Sørensen, and Fan Wang, 2020: "Optimal Allocation of the COVID-19 Stimulus Checks." Working Paper.

8. Consumption with Durables (Housing)

- (a) D. Krueger and Jesus Fernandez-Villaverde (2006). "Consumption and Saving over the Life Cycle: How Important are Consumer Durables?." *Macroeconomic Dynamics*, Vol 15, pp. 725–770.
item María José Luengo-Prado and Bent E. Sørensen: "What Can Explain Excess Smoothness and Sensitivity of State-Level Consumption?" *Review of Economics & Statistics*, Vol. 90, February 2008, 65–80.
- (b) Raj Chetty and Adam Szeidl (2007): "Consumption Commitments and Risk Preferences," *The Quarterly Journal of Economics*, 122(2), pp. 831–877.
- (c) Greg Kaplan, Giovanni L. Violante, Justin Weidner (2014). "The Wealthy Hand-to-Mouth." *Brookings Papers on Economic Activity* (2014).
- (d) Yuliya Demyanyk, Dmytro Hryshko, María José Luengo-Prado and Bent E. Sørensen "Moving to a Job: The Role of Home Equity, Debt, and Access to Credit." *American Economic Journal: Macroeconomics*

9. Facts on labor market, income and wealth.

- (a) Davis, Steven J., R. Jason Faberman and John Haltiwanger, (2006). "The Flow Approach to Labor Markets: New Data Sources and Micro-Macro Linkages," *Journal of Economic Perspectives*.
- (b) Gallipoli, Giovanni and Gianluigi Pelloni, (2013). "Macroeconomic Effects of Job Reallocations: A Survey," *Review of Economic Analysis*, 5, 127-176.
- (c) Petrongolo, Barbara, and Pissarides, Christopher A., 2001. "Looking into the Black Box: A Survey of the Matching Function," *Journal of Economic Literature*, 39(3): 390-431.
- (d) Elsby, Michael, Ryan Michaels and Gary Solon (2009). "The Ins and Out of Cyclical Unemployment," *American Economic Journal: Macroeconomics*, 1(1), 84-110.
- (e) Paul Gomme, Richard Rogerson, Peter Rupert and Randall Wright, 2005. "The Business Cycle and the Life Cycle," NBER Chapters, in: *NBER Macroeconomics Annual 2004, Volume 19, pages 415-592 National Bureau of Economic Research, Inc.*
- (f) Dirk Krueger, Perri F., Pistaferri L., and G.L. Violante (2005). "Cross-Sectional Facts for Macroeconomists". *Review of Economic Dynamics*, Vol 13(1), pp. 1-14
- (g) Fatih Guvenen, Greg Kaplan, Jae Song, Justin Weidner (2017). "LIFETIME INCOMES IN THE UNITED STATES OVER SIX DECADES". *NBER Working Paper 23371*
- (h) Moritz Khun and José Víctor Ríos-Rull (2016). "2013 Update on the U.S. Earnings, Income, and Wealth Distributional Facts: A View from Macroeconomics." *FEDERAL RESERVE BANK OF MINNEAPOLIS QUARTERLY REVIEW April 2016*

10. Labor Supply: From Individual to Aggregate.

- (a) Chetty, Raj, Adam Guren, Day Manoli, and Andrea Weber (2011). "Are Micro and Macro Labor Supply Elasticities Consistent? A Review of Evidence on the Intensive and Extensive Margins." *American Economic Review*, 101(3): 471-75.
 - (b) Chang, Y. and S.-B. Kim (2006). "From individual to aggregate labor supply: A quantitative analysis based on a heterogeneous agent macroeconomy." *International Economic Review* 47 (1), 127.
 - (c) Domeij, D. and M. Floden (2006). "The labor-supply elasticity and borrowing constraints: Why estimates are biased?" *Review of Economic Dynamics* 9, 242262.
 - (d) Imai, Susumu and Michael Keane, "Intertemporal Labor Supply and Human Capital Accumulation," *International Economic Review*, May 2004, 45 (2), 601-641.
 - (e) Rogerson, Richard and Johanna Wallenius, "Micro and macro elasticities in a life cycle model with taxes," *Journal of Economic Theory*, 2009, 144 (6), 2277-2292.
 - (f) Sebastian Dyrda, Greg Kaplan, José-Víctor Ríos-Rull, "Business Cycles vs Household Formation: the Micro vs the Macro Elasticity of Labor Supply.", NBER WP.
 - (g) Low, H. (2005). "Self-insurance in a life-cycle model of labour supply and savings". *Review of Economic Dynamics* 8 (4), 945-975.
 - (h) Meghir, C. and L. Pistaferri (2011). "Earnings, consumption and life cycle choices". In D. Card and O. Ashenfelter (Eds.), *Handbook of Labor Economics*, 4B. Amsterdam: Elsevier.
 - (i) Rupert, Peter, Richard Rogerson, and Randy Wright (2000), "Homework in Labor Economics: Household Production and Intertemporal Substitution", *Journal of Monetary Economics*, 46, 557-79.
 - (j) Pijoan-Mas, J. (2006). "Precautionary savings or working longer hours?" *Review of Economic Dynamics* 9 (2), 326-352.
 - (k) Andrés Erosa, Luisa Fuster and Gueorgui Kambourov, 2016. "Towards a Micro-Founded Theory of Aggregate Labour Supply," *Review of Economic Studies*, Oxford University Press, vol. 83(3), pages 1001-1039.
11. Occupational Choice: Experimentation, Displacement, Career Progression, etc
- (a) Topel, Robert H. and Michael P. Ward, "Job Mobility and the Careers of Young Men," *Quarterly Journal of Economics*, 1992, 107 (2), 439-79.
 - (b) Papageorgiou, T. "Learning your Comparative Advantage", *Review of Economic Studies*, 2015.
 - (c) Gibbons, Robert, Lawrence F. Katz, Thomas Lemieux, and Daniel Parent, "Comparative Advantage, Learning, and Sectoral Wage Determination," *Journal of Labor Economics*, October 2005, 23 (4), 681-724
 - (d) Huckfeldt, C. "Understanding the Scarring Effect of Recessions", manuscript, Cornell University.
 - (e) Gueorgui Kambourov and Iourii Manovskii, 2009. "Occupational Mobility and Wage Inequality," *Review of Economic Studies*, Oxford University Press, vol. 76(2), pages 731-759.
 - (f) Moscarini, Giuseppe, "Job Matching and the Wage Distribution," *Econometrica*, March 2005, 73 (2), 481-516
 - (g) Philip Jung and Moritz Kuhn, 2017. "Earnings Losses and Labor Mobility Over the Life Cycle," CESifo Working Paper Series 6552, CESifo Group Munich.

- (h) Cubas G. and Silos P. 2017, "Social Insurance and Occupational Mobility", manuscript.
- (i) Dvorkin, M. (2013) "Sectoral Shocks, Reallocation and Unemployment in a Model of Competitive Labor Markets", Federal Reserve Bank of St. Louis Working Paper.
- (j) M.P. Keane, K.I. Wolpin (1997). "The career decisions of young men," *Journal of Political Economy*, 105 (3) (1997), pp. 473-522
- (k) M. Huggett, G. Ventura, A. Yaron (2011). "Sources of lifetime inequality," *The American Economic Review*, 101 (7) (2011), pp. 2923-2954