

Economics 741: Applied Macroeconomics

Adam Guren
Fall 2018

Professor Adam Guren
guren@bu.edu
270 Bay State Road, Room 400
Office Hours: M 4-5, Tu 9-10:30

Meets Monday 6-9 pm in 270 Bay State Road Room 315 (with a break from 7:20 to 7:40).

Course Description: This course is the first half of the second-year macroeconomics field sequence for the Boston University economics Ph.D. program. The course is split into two parts taught separately by Prof. Adam Guren (September 10 – October 22) and Prof. Stephen Terry (October 29 – December 10). The two halves of the course will be separate, and evaluation will be split 50-50 between the two halves.

Course Prerequisites: EC 702, EC 704, and passing grade on macroeconomics qualifying exam.

Course Requirements:

Required Readings and Course Participation (30% of Grade)

In order to produce new macroeconomic knowledge, you must first be able to consume the existing ideas of macroeconomists. For most class meetings, two journal articles will be specified on the course reading list as required reading.

- **Summary Slides:** Each student will prepare a 2-slide summary of each article assigned as required reading. The first slide should briefly summarize the conclusions of the article. The second slide should present an analysis of the paper: a critique or an idea related to the paper. To receive credit for each assigned reading, students must email their summary slides to the instructor no later than **9:00PM the Sunday night before the class meeting**.

Note: Each class will have summary slides on two papers corresponding to the two lectures in that Monday's class session.

- **Random Presentation:** At the beginning of some classes with required reading, the instructor will randomly draw an integer with replacement for each assigned reading. Based on seating order and this random draw, one student will give a 3-minute presentation of their summary slides.

Fact Presentation (35% of Grade)

Nearly every applied macroeconomics project has at its heart a motivating fact or set of facts, and oftentimes finding a surprising or unexpected fact serves as the impetus for a paper. I want you to find a new fact of macro relevance that interests you and present it to the class. Preferably

this fact would be based on micro data keeping with the theme of this class, but it need not be. The tough part of this assignment is finding a fact. Once you have it, all you need to think about is presenting it clearly. I want to emphasize presentation skills in this class, and encourage you to devote more time than you would expect to writing and rewriting your slides to communicate your fact clearly.

5-6 p.m. on October 1: Each student gives a 5-minute presentation of their motivating empirical fact. You are allowed *at most three slides* to illustrate your fact, ideally visually. Think of this as the motivating introduction to a paper on this fact, and try to explain clearly what the fact is, how you found it (data, any analysis you did), and why it is surprising or puzzling.

Problem Set (35% of Grade)

A computational problem set will be assigned based on a model we discuss in class on October 1 and October 9. The problem set will be due October 22.

Prof. Guren's Half Will Cover Three Topics:

1. Micro Variation in Macro (7 Lectures)
2. Aggregate Nominal Rigidity and Micro Price Adjustment (3.5 Lectures)
3. Labor Markets (3.5 Lectures)

(each lecture will take half of a class period)

Course Outline:

1. (9/10) Introduction, Micro Data in Macro
2. (9/10) Regional Shocks and Evolutions
3. (9/17) Household Balance Sheets, Deleveraging, and Monetary Policy
4. (9/17) Firm Credit, Collateral, and Monetary Policy; Credit and the Great Recession
5. (9/24) Fiscal Multipliers, Aggregation I
6. (9/24) Aggregation II
7. (10/1) Aggregation III
8. (10/1) State-Dependent Pricing and (S,s) Models
9. (10/8) Evidence On Price Adjustment and Refined (S,s) Models
10. (10/8) Persistence and Real Rigidity
11. (10/15) Time Variation in Monetary Policy Effectiveness, Intro to Macro-Labor
12. (10/15) Flavors of Search Models
13. (10/22) The Unemployment Volatility Puzzle and Sticky Wages
14. (10/22) The Scarring Effects of Job Loss

My Approach:

- I want to give you a bird's eye view of the "lay of the land" of the literature.
 - Very useful for data source, identification strategies, etc.
- And then focus in on a few papers (2-3 per class) in detail.

- You will be asked to read these carefully before class.
- One paper will be used for the summary slides assignment – see web site. Often these will be more recent papers meant to get you thinking at the frontier rather than the most seminal papers.

My View on the “Big Questions in Macro”:

- What are the drivers of fluctuations (shocks)?
- Why are responses so big to seemingly small shocks?
- Why are responses so persistent?
- What is the role of policy, particularly monetary and fiscal?
- What are the roles of non-linearities and how do they change the above questions?

What I ask of you:

- Read double-starred readings very carefully. Read the starred readings as best you can (and given your interests).
 - I will announce what to read before class (also see last two pages).
- Ask questions, participate, challenge me, etc.
- Read critically and come to class with an eye towards new research questions.

Topic 1: Micro Variation in Macro

- Introduction
 - ** Nakamura and Steinsson (2017) “Identification in Macroeconomics.” WP.
 - ** Huber (2017) “Disentangling the Effects of a Banking Crisis: Evidence From German Firms and Counties.” *AER*.
- Regional Dynamics and Variation
 - ** Blanchard and Katz (1992) “Regional Evolutions.” *BPEA*.
 - * Yagan (2017) “Employment Hysteresis From the Great Recession.” WP.
 - * Autor, Dorn, and Hanson (2013). “The China Syndrome: Local Labor Market Effects of Import Competition in the United States.” *AER*.
 - Goldsmith-Pinkham, Sorkin, and Swift (2017) “Bartik Instruments: What, When, Why and How.” WP.
 - Howard (2018) “The Migration Accelerator: Labor Mobility, Housing, and Aggregate Demand.” WP.
 - Suarez-Serrato and Zidar (2016) “Who Benefits from State Corporate Tax Cuts? A Local Labor Market Approach with Heterogenous Firms.” *AER*.
 - Saiz (2010) “The Geographic Determinants of Housing Supply.” *QJE*.
 - Palmer, Christopher (2015) “Why did So Many Subprime Borrowers Default During the Crisis: Loose Credit or Plummeting Prices?” WP.
- Households, Debt Overhang, and the Debt-Deleveraging Channel (Mian and Sufi)
 - * Mian and Sufi (2011) “Housing Price, Home Equity-Based Borrowing, and the U.S. Household Leverage Crisis.” *AER*.

- ** Mian and Sufi (2014) “What Explains High Unemployment? The Aggregate Demand Channel.” *Emca*.
- ** Mian, Sufi, and Rao (2013) “Household Balance Sheets, Consumption, and the Economic Slump.” *QJE*.
- Mian and Sufi (2009) “The Consequences of Mortgage Credit Expansion: Evidence from the U.S. Mortgage Default Crisis.” *QJE*.
- Guerrieri and Lorenzoni (2017) “Credit Crises, Precautionary Savings, and the Liquidity Trap.” *QJE*.
- Midrigan and Phillipon (2016) “Household Leverage and the Recession.” WP.
- Eggertson and Krugman (2012) “Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach.” *QJE*.
- Households and Monetary Policy
 - ** Auclert (2017) “Monetary Policy and the Redistribution Channel.” WP.
 - * Di Maggio, Kermani, Keys, Piskorski, Ramcharan, Seru, and Yao (2017) “Monetary Policy Pass-Through: Mortgage Rates, Household Consumption, and Voluntary Deleveraging.” *AER*.
 - * Ganong and Noel (2017). “The Effect of Debt on Default and Consumption: Evidence from Housing Policy in the Great Recession.” WP.
 - * Beraja, Fuster, Hurst, and Vavra (2017). “Regional Heterogeneity and Monetary Policy.” WP.
 - Wong (2017) “Population Aging and the Transmission of Monetary Policy to Consumption.” WP.
 - Greenwald (2017) “The Mortgage Credit Channel of Macroeconomic Transmission” WP.
- Firms and Monetary Policy
 - Richardson and Troost (2009) “Monetary Policy Intervention Mitigated Banking Panics During the Great Depression: Quasi-Experimental Evidence from a Federal Reserve District Border, 1929-1933.” *JPE*.
 - * Kashyap and Stein (2000) “What Do a Million Observations on Banks Say About the Transmission of Monetary Policy?” *AER*.
 - * Jimenez, Ongena, Peydro, and Saurina (2012). “Credit Supply and Monetary Policy: Identifying the Bank Balance-Sheet Channel with Loan Applications.” *AER*.
 - * Jimenez, Ongena, Peydro, and Saurina (2014) “Hazardous Times for Monetary Policy: What Do 23 Million Loans Say About the Impact of Monetary Policy on Credit Risk Taking?” *Emca*.
 - Jimenez, Mian, Peydro, and Salas (2014). “The Real Effects of the Bank Lending Channel.” WP.
- Firms and Bank Shocks (regional and firm-level)
 - * Peek and Rosengren (2000) “Collateral Damage: Effects of the Japanese Bank Crisis on Real Activity in the United States.” *AER*.
 - Ashcraft (2005) “Are Banks Really Special? New Evidence from the FDIC-Induced Failure of Healthy Banks.” *AER*.
 - Hochfellner, Montes, Schmitz, and Sosyura (2014) “The Human Costs of Bank Speculation.” WP.

- Ivashina and Scharfstein (2010) “Bank Lending During the Financial Crisis of 2008.” *JFE*.
- ** Chodorow-Reich (2014) “The Employment Effects of Credit Market Disruptions: Firm-Level Evidence From the 2008-9 Financial Crisis” *QJE*.
- * Mas, Greenstone, and Nguyen (2015) “Do Credit Market Shocks Affect the Real Economy? Quasi-Experimental Evidence from the Great Recession and ‘Normal’ Economic Times.” WP.
- ** Khwaja and Mian. (2008) “Tracing the Impact of Bank Liquidity Shocks: Evidence from an Emerging Market.” *AER*.
- Amiti and Weinstein (2017) “How Much Do Bank Shocks Affect Investment? Evidence From Mached Bank-Firm Loan Data.” *JPE*.
- Firms and Collateral
 - ** Chaney, Sraer, and Thesmar (2012) “The Collateral Channel.” *AER*.
- Households and Bank Shocks
 - * Mondragon (2017) “Household Credit and Employment in the Great Recession.” WP.
- Fiscal Policy and the Multiplier
 - ** Nakamura and Steinsson (2014) “Fiscal Stimulus in a Monetary Union: Evidence from U.S. Regions” *AER*.
 - ** Chodorow-Reich (2017) “Geographic Cross-Sectional Fiscal Multipliers: What Have We Learned?” WP.
 - * Shoag (2012) “The Impact of Government Spending Shocks: Evidence on the Multiplier From State Pension Plan Returns.” WP.
 - * Suarez Serrato and Wingender (2016) “Estimating Local Fiscal Multipliers.” WP.
 - * Mian and Sufi (2012) “The Effects of Fiscal Stimulus: Evidence From the 2009 Cash For Clunkers Program.” *QJE*.
 - Parker, Souleles, Johnson, and McClelland(2013) “Consumer Spending and the Economic Stimulus Payments of 2008.” *AER*.
- Aggregation
 - ** Beraja, Hurst, and Ospina (2016) “The Aggregate Implications of Regional Business Cycles.” WP.
 - ** Beraja (2017) “Counterfactual Equivalence in Macroeconomics.” WP.
 - * Acemoglu, Autor, Dorn, Hanson, and Price (2016) “Import Competition and the Great U.S. Employment Sag of the 2000s.” *JOLE*.
 - * Carvalho, Nirei, Saito, and Tahbaz-Salehi (2016) “Supply Chain Disruptions: Evidence from the Great East Japan Earthquake.” WP.
 - Stumpner (2017) “Trade and the Geographic Spread of the Great Recession.” WP.
- Information, Expectations, and Aggregation
 - ** Angeletos and La’O (2010) “Noisy Business Cycles. *NBER Macro Annual*.
 - * Angeletos and Lian (2017) “Incomplete Information in Macroeconomics: Accommodating Frictions in Coordination.” *Handbook of Macroeconomics*.
 - ** Angeletos and Lian (2017) “Dampening GE: From Micro to Macro.” WP.
 - ** Gorodnichenko and Coibion (2012) “What Can Survey Forecasts Tell Us About Informational Rigidities.” *JPE*.

- Gorodnichenko and Coibion (2015) “Information Rigidity and the Expectation Formation Process: A Simple Framework and New Facts.” *AER*.
- Angeletos and La’O (2013) “Sentiments.” *EMCA*.

Topic 2: Aggregate Nominal Rigidity and Micro Price Adjustment

- Overviews
 - Klenow and Malin (2010) “Microeconomic Evidence on Price Setting.” *Handbook of Monetary Economics*.
 - ** Nakamura and Steinsson (2013) “Price Rigidity: Microeconomic Evidence and Macroeconomic Implications.” *Annual Review of Economics*.
- Evidence For Monetary Non-Neutrality
 - * Christiano, Eichenbaum and Evans (1999) “Monetary Policy Shocks: What Have We Learned and To What End?” *Handbook of Macroeconomics*.
 - * Romer and Romer (2004) “A New Measure of Monetary Shocks: Derivation and Implications.” *AER*.
 - Romer and Romer (1989) “Does Monetary Policy Matter? A New Test in the Spirit of Friedman and Schwartz.” *NBER Macroeconomics Annual*.
 - Mankiw (2001) “The Inexorable and Mysterious Tradeoff Between Inflation and Unemployment.” *EJ*.
 - Fuhrer (2011) “Inflation Persistence.” *Handbook of Monetary Economics*.
 - * Nakamura and Steinsson (2017) “High Frequency Identification of Monetary Non-Neutrality: The Information Effect.” *QJE*.
- Evidence on Price Adjustment
 - * Bils and Klenow (2004) “Some Evidence on the Importance of Sticky Prices.” *JPE*.
 - ** Nakamura and Steinsson (2008) “Five Facts About Prices: A Reevaluation of Menu Cost Models.” *QJE*.
 - ** Klenow and Kryvtsov (2008) “State Dependent or Time Dependent Pricing: Does it Matter for Recent U.S. Inflation.” *QJE*.
 - Gagnon (2009) “Price Setting During Low and High Inflation: Evidence from Mexico.” *QJE*.
 - Alvarez, Gonzales-Rozada, Neumeyer, and Beraja (2016) “From Hyperinflation to Stable Prices: Argentina’s Evidence on Menu Cost Models.” WP.
 - Eichenbaum, Jaimovich and Rebelo (2011) “Reference Prices, Costs, and Nominal Rigidities.” *AER*.
- Theory of Price Adjustment: (S,s) Models
 - Math Reference: Dixit and Pindyck (1994) *Investment Under Uncertainty*.
 - Sheshinski and Weiss (1977) “Inflation and Costs of Price Adjustment.” *RESTUD*.
 - ** Caplin and Spulber (1987) “Menu Costs and the Neutrality of Money.” *QJE*.
 - * Caplin and Leahy (1991) “State-Dependent Pricing and the Dynamics of Money and Output.” *QJE*.
 - Dotsey, King and Wolman (1999) “State Dependent Pricing and the General Equilibrium Dynamics of Money and Output.” *QJE*.
 - ** Golosov and Lucas (2007) “Menu Costs and Phillips Curves.” *JPE*.

- * Caballero and Engel (2007) “Price Stickiness in Ss models: New Interpretations of Old Results.” *JME*.
- ** Midrigan (2011) “Menu Costs, Multi-Product Firms, and Aggregate Fluctuations.” *Emca*.
- Gertler and Leahy (2008) “A Phillips Curve with an Ss Foundation.” *JPE*.
- Alvarez and Lippi (2014) “Price Setting With Menu Cost for Multi-Product Firms.” *Emca*.
- Alvarez, Le Bihan and Lippi (2016) “The Real Effects of Monetary Shocks in Sticky Price Models: A Sufficient Statistic Approach.” *AER*.
- Blanco and Baley (2017) “Menu Costs, Uncertainty Cycles, and the Propagation of Nominal Shocks.” WP.
- Persistence and Strategic Complementarity
 - Cooper and John. 1988. “Coordinating Coordination Failures in Keynesian Models.” *QJE*.
 - ** Ball and Romer (1990) “Real Rigidities and the Non-Neutrality of Money.” *RESTUD*.
 - * Kimball (1995) “The Quantitative Analytics of the Basic Neomonetarist Model.” *JMCB*.
 - * Basu (2005). “Comment on: ‘Implications of State-Dependent Pricing for Dynamic Macroeconomic Modelling.’”
 - Nakamura and Zerom (2010) “Accounting For Incomplete Pass-Through.” *RESTUD*.
 - * Guren (2017) “House Price Momentum and Strategic Complementarity.” *JPE*.
 - * Basu (1995) “Intermediate Goods and Business Cycles: Implications For Productivity and Welfare.” *AER*.
 - Carvalho (2006) “Heterogeneity in Price Stickiness and the Real Effects of Monetary Shocks.” *BE Journal of Macroeconomics*.
 - ** Nakamura and Steinsson (2010) “Monetary Non-Neutrality in a Multi-Sector Menu Cost Model.” *QJE*.
 - Chari, Kehoe, and McGrattan (2000) “Sticky Price Models of the Business Cycle: Can the Contract Multiplier Solve the Persistence Problem?” *Emca*.
 - * Klenow and Willis (2016). “Real Rigidities and Nominal Price Changes.” *Economica*.
 - ** Bills, Klenow, and Malin (2012). “Reset Price Inflation and the Impact of Monetary Policy Shocks.” *AER*.
 - ** Gopinath and Itkhoki (2011). “In Search of Real Rigidities.” *NBER Macroeconomics Annual*.
 - Kryvtsov and Midrigan (2012) “Inventories, Markups, and Real Rigidities in Menu Cost Models.” *RESTUD*.
 - ** Mongey (2017) “Market Structure and Monetary Non-Neutrality.” WP.
- Interational Evidence
 - * Gopinath and Itkhoki (2010) “Frequency of Adjustment and Exchange Rate Pass Through” *QJE*.
 - Gopinath, Itkhoki, and Rigobon (2010) “Currency Choice and Exchange Rate Pass-Through.” *AER*.
 - Berger and Vavra (2014) “Volatility and Pass Through.” WP.

- Amity, Itskhoki, and Koenigs (2014) “Improvers, Exporters, and Exchange Rate Disconnect.” *AER*.
- * Amity, Itskhoki, and Koenigs (2017) “International Shocks and Domestic Prices: How Large Are Strategic Complementarities?” WP.
- * Atkeson and Burstein (2008) “Pricing to Market, Trade Costs, and International Relative Prices.” *AER*.
- Time Variation
 - ** Vavra (2014) “Inflation Dynamics and Time-Varying Volatility: New Evidence and an Ss Interpretation.” *QJE*.
 - Gilchrist, Schoenle, Sim, and Zakrajsek (2017) “Inflation Dynamics During the Financial Crisis.” *AER*.
 - Klepacz (2017). “Price Setting and Volatility: Evidence From Oil Price Volatility Shocks.” WP.

Topic 3: Macro Labor

- Overviews
 - ** Rogerson, Shimer, and Wright (2005) “Search Theoretic Models of the Labor Market.” *JEL*.
 - * Pissarides (2000) *Equilibrium Unemployment Theory, 2nd Edition*
- Facts
 - * Elsby, Hobijn, and Sahin (2011) “The Labor Market in the Great Recession: An Update.” *BPEA*.
 - Blanchard and Diamond (1989) “The Beveridge Curve.” *BPEA*.
 - Davis, Faberman, Haltiwanger (2006) “The Flow Approach to Labor Markets: New Data Sources and Micro-Macro Linkages.” *JEP*.
 - * Elsby, Michaels, and Solon (2009) “The Ins and Outs of Cyclical Unemployment.” *AEJ: Macro*.
 - * Shimer (2012) “Reassessing the Ins and Outs of Unemployment.” *RED*.
 - Petrongolo and Pissarides (2001) “Looking Into the Black Box: A Survey of the Matching Function.” *JEL*.
- Partial Equilibrium Search
 - McCall (1970). “Economics of Information and Job Search.” *QJE*.
 - Diamond (1970) “A Model of Price Adjustment.” *JET*.
 - * Jovanovic (1979) “Job Matching and the Theory of Turnover.” *JPE*.
- Random Search: The DMP Model
 - Pissarides (1985) “Short-Run Equilibrium Dynamics of Unemployment Vacancies and Real Wages.” *AER*.
 - ** Mortensen and Pissarides (1994) “Job Creation and Job Destruction in the Theory of Unemployment.” *RESTUD*.
 - Hosios (1990) “On the Efficiency of Matching and Related Models of Search and Unemployment.” *RESTUD*.
- Directed Search
 - Moen (1997) “Competitive Search Equilibrium.” *JPE*.
 - * Menzio and Shi (2010) “Efficient Search on the Job and the Business Cycle.” *JPE*.

- Wage Dispersion
 - * Hornstein, Krusell, and Violante (2011). “Frictional Wage Dispersion in Search Models: A Quantitative Assessment.” *AER*.
- Unemployment Volatility and the “Shimer Puzzle”
 - ** Shimer (2005) “The Cyclical Behavior of Equilibrium Unemployment and Vacancies.” *AER*.
 - * Hagedorn and Manovskii (2008) “The Cyclical Behavior of Equilibrium Unemployment and Vacancies Revisited.” *AER*.
 - * Hall (2005) “Employment Fluctuations and Equilibrium Wage Stickiness.” *AER*.
 - Hall and Milgrom (2008) “The Limited Influence of Unemployment on the Wage Bargain.” *AER*.
 - Gertler and Trigari (2009) “Unemployment Fluctuations With Staggered Nash Wage Bargaining.” *JPE*.
 - ** Pissarides (2009) “The Unemployment Volatility Puzzle: Is Wage Stickiness the Answer?” *Emca*.
 - * Michailat (2012) “Do Matching Frictions Explain Unemployment? Not in Bad Times.” *AER*.
 - * Schoefer (2016) “The Financial Channel of Wage Rigidity.” WP.
 - Hall (2017) “High Discount Rates and High Unemployment.” *AER*.
 - ** Ljungqvist and Sargent (2017) “The Fundamental Surplus.” WP.
- Wages
 - Elsby, Shin, and Solon (2016) “Wage Adjustment in the Great Recession and Other Downturns: Evidence from the United State and Great Britain.” *JOLE*.
 - Barsky Solon, and Parker (1994) “Measuring the Cyclical of Real Wages: How Important is Composition Bias?” *QJE*.
 - Guimares, Carneiro and Portugal (2012) “Real Wages and the Business Cycle: Accounting for Workers and Firm Heterogeneity” *AEJ: Macro*.
- Scarring and Long-Run Effects
 - * Jacobson, LaLonde, and Sullivan (1993) “Earnings Losses of Displaced Workers.” *AER*.
 - Couch and Placzek (2010) “Earnings Loses of Displaced Workers and the Business Cycle: Ana Analysis With Administrative Data.” *AER*.
 - Von Wachter, Song, and Manchester (2009) “Long-Term Earnings Losses Due to Mass Layoffs During the 1982: An Analysis Using U.S. Administrative Data from 1974 to 2004.” WP.
 - Flaaen, Shapiro, and Sorkin. (2017). “Reconsidering the Consequences of Worker Displacements: Firm Versus Worker Perspective.” WP.
 - * Davis and Von Wachter (2011) “Recessions and the Cost of Job Loss.” *BPEA*.
 - Hall (1995) “Lost Jobs.” *BPEA*.
 - * Pries (2004) “Persistence of Employment Fluctuations: A Model of Recurring Job Loss.” *JPE*.
 - ** Jarosch (2015) “Searching for Job Security and the Consequences of Job Loss.” WP.

Starred Readings By Lecture

1. Introduction (September 10)
 - a. Class Discussion: Nakamura-Steinsson, Huber
 - b. ** Nakamura-Steinsson
 - c. ** Huber
2. Regional Shocks and Evolutions (September 10)
 - a. **: Blanchard-Katz, Yagan
 - b. *: Autor-Dorn-Hanson
3. Household Balance Sheets, Deleveraging, and Monetary Policy (September 17)
 - a. Summary Slides: Mian-Sufi-Rao and Mian-Sufi (2014 EMCA), together
 - b. **: Mian-Sufi-Rao, Mian-Sufi (2014 EMCA),
 - c. *: Mian-Sufi (2011), Mian-Sufi-Rao, Mian-Sufi (2014 WP) Di Maggio et al., Ganong-Noel, Beraja-Fuster-Hurst-Vavra
4. Credit, Collateral, and Monetary Policy; Credit and the Great Recession (September 17)
 - a. Summary Slides: Khwaja-Mian or Chodorow-Reich (choice)
 - b. ** Khwaja-Mian, Chodorow-Reich
 - c. *: Peek-Rosengren, Chaney-Sraer-Thesmar, Mas-Greenstone-Nguyen
5. Fiscal Multipliers, Aggregation I (September 24)
 - a. Summary Slides: Nakamura-Steinsson
 - b. **: Nakamura-Steinsson, Chodorow-Reich
 - c. *: Shoag, Suarez Serrato-Wingender
6. Aggregation II (September 24)
 - a. Summary Slides: Beraja-Hurst-Ospina
 - b. **: Beraja-Hurst-Ospina
 - c. *: Mian-Sufi (2014), Acemoglu-Autor-Dorn-Hanson-Price, Carvalho-Nirei-Saito-Tahbaz-Salehi
7. Aggregation III (October 1)
 - a. Summary Slides: Angeletos-La'O
 - b. **: Angeletos La'O, Angeletos-Lian (2017), Coibion-Gorodnichenko (2012)
 - c. *: Angeletos-Lian (Handbook)
8. State-Dependent Pricing and (S,s) Models (October 1)
 - a. Summary Slides: Golosov-Lucas
 - b. **: Golosov-Lucas
 - c. *: Caplin-Spulber, Bils-Klenow, Caplin-Leahy
9. Evidence On Price Adjustment and Refined State-Dependent (October 8)
 - a. Summary Slides: Midrigan
 - b. **: Nakamura-Steinsson, Klenow-Kryvtsov, Midrigan
 - c. *: Caballero and Engel, Alvarez-Le Bihan-Lippi
10. Persistence and Real Rigidity (October 8)
 - a. Summary Slides: None
 - b. **: Mongey, Ball-Romer
 - c. *: Nakamura-Steinsson, Bils-Klenow-Malin, Itskhoki-Gopinath.
11. Real Rigidity (Continued), Time Variation in Monetary Policy Effectiveness, Intro to Macro-Labor (October 15)
 - a. Summary Slides: Vavra

- b. ** Vavra
- 12. Flavors of Search Models (October 15)
 - a. No Summary Slides, read Rogerson-Shimer-Wright carefully.
 - b. **: Rogerson-Shimer-Wright, Mortensen-Pissarides
 - c. *: Menzio-Shi
- 13. The Unemployment Volatility Puzzle and Sticky Wages (October 22)
 - a. Summary Slides: Shimer (2005)
 - b. **: Shimer, Pissarides, Ljungqvist-Sargent
 - c. * Hagadorn-Manovskii, Hall, Schoeffer, Elsby-Shin-Solon
- 14. The Scarring Effects of Job Loss (October 22)
 - a. Summary Slides: Jarosch
 - b. ** Jarosch
 - c. *: Jacobson-LaLonde-Sullivan, Davis-Von Wachter, Pries