

University of Maryland
Department of Economics

Economics 702
Advanced Macroeconomics II

Spring 2010

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Time and Location : M W 2:00 – 3:15, Tydings 1114

Course Webpage : <http://www.elms.umd.edu>

1. OUTLINE AND OBJECTIVE OF THE COURSE

The course is divided into two parts. The first part of the course will be taught by Dr. D’Erasmus and the main theme will be the study of dynamic structural models with heterogeneous agents. We will analyze heterogeneity at the consumer, entrepreneur and firm/establishment level. We will address questions related to wealth inequality, business cycle fluctuations and government policy under different market arrangements. For each topic, we will review the main facts and we will build intuition starting from the most basic models. The second part of the course will focus on three main issues. First, we will cover search-based models of money quite extensively, giving you a fairly complete history of the literature and bring you close to the frontier. This class of models is of course a very subjective choice for Dr. Aruoba (he works with them!) but we will try to be objective in presenting the models. Second, we will spend quite a bit of time talking about positive and normative aspects of monetary economics, focusing on whether or not monetary policy can be effective and if so, what the optimal policy to follow is. Third, we will cover the growing literature of DSGE estimation. At the end of the course you will prepare a paper proposal picking one of the topics we have considered in the course (or some other related topic).

TEXTBOOKS AND OTHER READING MATERIAL

Most of the course will be based on articles, which are listed on the course outline and these will be available electronically on the course webpage.

We do not require you to purchase any particular book for this course. The following books are recommended:

Recursive Macroeconomic Theory, Second Edition, Ljungqvist and Sargent (LS)

Recursive Methods in Economic Dynamics, Stokey and Lucas, Harvard University Press, 1989

These two are a must-have for any macroeconomist so we assume you already have them.

Monetary Theory and Policy, Third Edition, Walsh

This is a book specifically on monetary economics. It is a good reference for monetary economics in general, although it doesn't cover what we consider to be some of the recent important theoretical advances in the field.

PREREQUISITES

ECON 601 and ECON 602. Students who have not taken these courses and/or students from other departments must talk to us before taking this course.

AUDITING POLICY

Students who have officially taken ECON 702 before or otherwise cannot take it for credit, are welcome to audit this course subject to the following stipulation and with prior approval of both of us. They are exempt from the take-home exams and the paper proposal requirements, although they can certainly choose to do them. We will, however, ask them to attend lectures regularly and participate. Upper year students who have other commitments that might limit their participation should contact us for permission. We will withdraw the auditing privileges of anyone who fails to follow the rules above.

GRADING

The two halves of the class will have equal weight on your final grade.

Take-Home Exams (30% each)

We will have two take-home exams, one after each half of the class. The first one, which will cover Dr. D'Erasmus's topics, will be on March 10, 2011, Thursday. The second one, which will cover Dr. Aruoba's topics will be on May 16, 2011, Monday, which is the day the university assigned for our final. With unanimous consent of all registered students we can consider moving these exams to other days, if this will be more convenient for you. You should make us aware of any conflicts during the first two weeks of classes regarding these two days.

The exams will take one day. We will make the questions available to you early in the morning (details to be set later) and you will have until midnight the same day to finish the exams. Although these are take-home (and of course open-book) exams, we expect you to work alone. If you feel comfortable, it will be more convenient for us if you type your answers using Scientific Word or some other word processor. Regardless, you will return the exam via email.

Paper Proposal (30%)

One of the main objectives of this course is to familiarize you with some important topics in Macroeconomics and to place you on or close to the research frontier on these topics. To help accomplish this, we want you to write a short paper proposal. While it is acceptable for it to be similar to a paper proposal you prepared for another class, it should have some elements from 702.

Given that we have two distinct parts for the course, here is how we will administer this. You need to talk to Dr. D'Erasmus by **March 18, 2011** about ideas related to his part of the course and mutually agree on an idea. You need to talk to Dr. Aruoba by **May 18, 2011** about ideas related to his part of the course and mutually agree on an idea. It will be a good idea to be in touch with us well before these deadlines regarding various ideas as your first idea may not be acceptable. Once you get our approval about your topics, you will type a one-page summary for both of your ideas and send these documents to both of us by email by **May 20, 2011**. We will then notify you by email which of the two ideas we think you should use for the paper proposal. You need to send us the final proposal by 5 pm on **June 3, 2011**.

The final proposal should strictly adhere to the following guidelines: 4 pages maximum (excluding figures, tables, if any and references) with 12 point fonts and 1.5 spacing. These will be strictly enforced. It should look like the introduction part of a paper. In particular, it must spell out the research question in detail, explain the relevance and the significance of this idea, comparing it to other papers in the field. What we are looking for is the originality of the idea, not necessarily the immediate implementability. That is, we do not expect you to see the

troubles that you might encounter when you actually try to do what you propose. Ideas such as "I will take model A and add the following feature to it." are admissible as long as they don't look like homework. That is, there is some originality and difficulty in doing so.

Class Participation (10%)

All students (those who are taking the course for a grade **and** those who are auditing) are expected to attend all lectures, read the assigned articles and participate in the class discussions.

POLICIES AND IMPORTANT NOTES

- Unless previously announced, the class will meet on all Mondays and Wednesdays the university is officially open.
- Our primary mean for communication outside the classroom is email. I will try to respond to your emails in a timely fashion. We will maintain an email list of all students and may use this list for relaying important information. Please check your email regularly.

READING LIST

Papers with (*) are required readings and you are expected to read them **before** the related lecture. The others are optional. All papers are available on the course website. **Don't print all these papers immediately.** As we progress, it will become clear which ones you will study in greater detail.

PART I (Taught by Dr. D'Erasmus)

1) Income and Wealth Inequality

A – Some Facts and Basic Framework

Autor, Katz and Kearney (2008) "Trends in US wage inequality: revising the revisionists," *The Review of Economics and Statistics*.

(*) Budria Rodriguez, Diaz Gimenez, Quadrini and Rios Rull (2002) "Updated Facts on the U.S. Distributions of Earnings, Income, and Wealth," *Federal Reserve Bank of Minneapolis Quarterly Review*, Summer 2002.

Krueger, Perri, Pistaferri and Violante (2010) "Cross Sectional Facts for Macroeconomists," *Review of Economic Dynamics*, Special Issue, 13(1), 1-14.

(*) Heathcote, Perri and Violante (2010) "Unequal We Stand: An Empirical Analysis of Economic Inequality in the United States: 1967-2006," *Review of Economic Dynamics*, Special Issue, 13(1), 15-51.

Heathcote, Storesletten and Violante (2009) "Quantitative Macroeconomics with Heterogeneous Households," *Annual Review of Economics*, 1, 319-354.

Storesletten, Telmer and Yaron (2001) "How Important Are Idiosyncratic Shocks? Evidence from Labor Supply"

B – A Different Income Process and Ex-ante Heterogeneity

(*) Heathcote, Storesletten and Violante (2008) "Insurance and Opportunities: A Welfare Analysis of labor market Risk," *Journal of Monetary Economics*, 55(3), 501-525.

Güvenen (2009) "An Empirical Investigation of Labor Income Processes," *Review of Economic Dynamics*.

(*) Guvenen (2007) "Learning your Earning: Are Labor Income Shocks Really Persistent?" *The American Economic Review*.

(*) Guvenen and Smith (2010) "Inferring Labor Income Risk from Economic Choices: An Indirect Inference Approach," NBER Working Papers 16327.

Guvenen and Kuruscu (2010) "A Quantitative Analysis of the Evolution of the U.S. Wage Distribution: 1970-2000," *NBER Macroeconomics Annual* 2009, 24, 227-276.

C – Determinants of Wealth and Income Inequality

(*) Heathcote, Storesletten and Violante (2010) "The Macroeconomic Implications of Rising Wage Inequality in the United States," *Journal of Political Economy*, 118(4), 681-722.

(*) Castaneda Diaz-Gimenez and Rios Rull (2003) "Accounting for the US Earnings and Wealth Inequality," *Journal of Political Economy*.

Cagetti and De Nardi (2008) "Wealth Inequality: Data and Models," *Macroeconomic Dynamics*.

2) Heterogeneous Agents and Private Insurance

(*) Kaplan and Violante (2010) "How Much Consumption Insurance Beyond Self-Insurance? *American Economic Journal: Macroeconomics*, 2(4), 53-87.

(*) Storesletten, Telmer and Yaron (2004) "Consumption and Risk Sharing over the Life Cycle," *Journal of Monetary Economics*.

Choi (2009) "Life-Cycle Fertility: Means vs Motives vs Opportunities," *Job Market Paper*, University of Pennsylvania.

Hugget, Ventura and Yaron (2006) "Human capital and earnings distribution dynamics," *Journal of Monetary Economics*.

Cubeddu and Rios Rull (2006) "Families as Shocks," *Journal of the European Economic Association*, (1) 2-3, pp 671-82.

3) Public Insurance / Government Policy

A – Fiscal Policy

Heathcote (2005) "Fiscal Policy with Heterogeneous Agents and Incomplete Markets," *Review of Economic Studies*.

(*) Conesa, Kitao and Krueger (2009) "Taxing Capital? Not a bad idea after all," *American Economic Review*.

Conesa and Krueger (2006) "On the Optimal Progressivity of the Income Tax Code," *Journal of Monetary Economics*.

Diaz Gimenez and Pijoan-Mas (2006) "Flat Tax Reforms in the U.S.: a Boon for the Income Poor," CEMFI working paper series.

(*) Aiyagari and McGrattan (1998) "The optimum quantity of debt," *Journal of Monetary Economics*.

Kitao (2008) "Entrepreneurship, taxation and capital investment," *Review of Economic Dynamics*, (11)1, 44-69.

B -Monetary Policy

(*) Erosa Ventura (2003) "On inflation as a regressive consumption tax," *Journal of Monetary Economics*.

(*) Doepke Schneider (2006) "Inflation and the Redistribution of Nominal Wealth," *Journal of Political Economy*.

Meh, Rios Rull and Terajima (2009) "Aggregate and Welfare Effects of Redistribution of Wealth Under Inflation and Price-Level Targeting," mimeo.

da Costa and Werning (2008) "On the optimality of the Friedman Rule with heterogeneous agents and Non Linear Income Taxation," *Journal of Political Economy*.

C - Political Economy

(*) Krusell Rios Rull (1999) "On the Size of the U.S. Government: Political Economy in the Neoclassical Growth Model," *Journal of Political Economy*.

Albanesi (2007) "Inflation and Inequality," *Journal of Monetary Economics*.

(*) Corbae, D'Erasmus and Kuruscu (2009) "Politico-economic consequences of rising wage inequality," *Journal of Monetary Economics*.

Song Storesletten Zilibotti (2007) "Rotten Parents and Disciplined Children: A Politico Economic Theory of Public Expenditure and Debt," mimeo.

(*) Bachmann and Bai (2010) Government Purchases over the Business Cycle: the Role of Economic and Political Inequality.

4) Commitment Frictions

A – Complete Markets Framework

(*) Krueger and Perri (2006) “Does Income Inequality Lead to Consumption Inequality? Evidence and Theory,” Review of Economic Studies.

Alvarez and Jermann (2000)

"Efficiency, Equilibrium, and Asset Pricing with Risk of Default,"
Econometrica, 68(4), 775-798.

Blundell, Pistaferri and Preston (2008) “Consumption Inequality and Partial Insurance,” American Economic Review.

B – Incomplete Markets and Consumer Bankruptcy

Michelle White (2007) "Bankruptcy Law," Handbook of Law and Economics.

Michelle White (2008) “Bankruptcy: Past Puzzles, Recent Reforms, and the Mortgage Crisis” NBER working paper #14549.

(a) Unsecured Credit

(*) Zhang (1997). "Endogenous Borrowing Constraints with Incomplete Markets," Journal of Finance, 52(5), 2187-2209.

(*) Chatterjee, Corbae Nakajima Rios Rull (2007) “A Quantitative Theory of Unsecured Consumer Credit with Risk of Default,” Econometrica.

(*) Igor Livshits and James MacGee (2007) “Consumer Bankruptcy: A Fresh Start,” American Economic Review.

Athreya, Tam and Young (2009) “A quantitative Theory of Information and Unsecured Credit,” Journal of Monetary Economics.

Chatterjee, Corbae Nakajima Rios Rull (2008) “A Finite-Life Private-Information Theory of Unsecured,” Journal of Economic Theory.

Sanchez (2008) "The Role of Information in Consumer Debt and Bankruptcy," mimeo.

Planas and Rios Rull (2008) “Credit Lines,” mimeo.

(b) Secured Credit

Corbae and Quintin (2010) "Mortgage Innovation and the Foreclosure Boom," mimeo.

Chatterjee and Eyigungor (2010)

"Foreclosures and house price dynamics: a quantitative analysis of the mortgage crisis and the foreclosure prevention policy,"

Federal Reserve Bank of Philadelphia, mimeo.

Guler (2009) "Innovations in Information Technology and the Mortgage Market," Job Market Paper, University of Texas at Austin.

Nakajima (2008) "Optimal Capital Income Taxation with Housing," mimeo.

5) Entrepreneurs

A – Basic Framework

Quadrini (2000) "Entrepreneurship, saving and social mobility," Review of Economic Dynamics, vol. 3(1), pages 1-40.

Erosa (2001) "Financial Intermediation and Occupational Choice in Development," Review of Economic Dynamics.

(*) Quadrini, (2009) "Entrepreneurship in macroeconomics," Annals of Finance, 5(3), 295-311.

(*) Cagetti and De Nardi (2009) "Estate Taxation, Entrepreneurship and Wealth," American Economic Review.

B – Financial Frictions

(*) Evans and Jovanovic (1989) "An Estimated Model of Entrepreneurial Choice under Liquidity Constraints," Journal of Political Economy, 97(4), 808-27.

(*) Buera, Kaboski and Shin, (2009) "Finance and Development: A Tale of Two Sectors," forthcoming American Economic Review.

(*) Meh and Terajima (2008) "Unsecured Debt, Consumer Bankruptcy and Entrepreneurship," Bank of Canada, Working Papers.

Cagetti and De Nardi (2006) "Entrepreneurship, Frictions, and Wealth," Journal of Political Economy, 114(5), 835-870.

Buera (2009) "A dynamic model of entrepreneurship with borrowing constraints: theory and evidence," *Annals of Finance*, 5(3), 443-464.

6) Firm Dynamics

A – Standard Models

(*) Hopenhayn (1992) "Entry, Exit, and Firm Dynamics in Long Run Equilibrium," *Econometrica*.

Jovanovic (1982) "Selection and the Evolution of Industry," *Econometrica*.

(*) Hopenhayn and Rogerson (1993) "Job Turnover and Policy Evaluation: A General Equilibrium Analysis," *Journal of Political Economy*.

(*) Rossi-Hansberg and Wright (2007) "Establishment Size Dynamics in the Aggregate Economy," *American Economic Review*, 97(5), 1639-1666.

Melitz (2003) "The Impact on Trade on Intra-Industry Reallocations and Aggregate Industry Productivity," *Econometrica*.

Hart, O. and J. Moore, (1990) "Property Rights and the Nature of the Firm," *Journal of Political Economy*.

Atkeson and Kehoe (2007) "Modeling the transition to a new economy," *American Economic Review*.

Weintraub Benkard and Van Roy (2009) "Markov Perfect Industry Dynamics with Many Firms," *Econometrica*.

B – Financial Frictions

(*) Cooley and Quadrini (2001) "Financial Markets and Firm Dynamics," *American Economic Review*.

(*) Hennessy and Whited (2005) "Debt Dynamics," *Journal of Finance*.

Miao (2005) "Optimal Capital Structure and Industry Dynamics," *Journal of Finance*.

(*) Angelini and Generale (2008) "On the Evolution of Firm Size Distributions," *American Economic Review*.

Cooper and Ejarque (2003) "Financial Frictions and Investment: Requiem in Q," *Review of Economic Dynamics*.

(a) Incomplete Markets

Michelle White (2007) "Bankruptcy Law," Handbook of Law and Economics.

Bris, Welch and Zhu (2006) "The Cost of Bankruptcy: Chapter 7 Liquidation vs Chapter 11 Reorganization," Journal of Finance.

(*) Arrellano, Bai and Zhnag (2010) "Firm Dynamics and Financial Development," mimeo.

(*) D'Erasmus and Moscoso Boedo (2010) "Financial Structure, Informality and Development," mimeo.

Hopenhayn and Werning (2008) "Equilibrium Default".

Eraslan (2008) "Corporate Bankruptcy Reorganizations Estimates from a Bargaining Model," International Economic Review.

Corbae and D'Erasmus (2009) "Reorganization or Exit: Bankruptcy Decisions and Firm Dynamics," mimeo.

(b) Complete markets without commitment

(*) Albuquerque and Hopenhayn (2004) "Optimal Lending Contracts and Firm Dynamics," Review Economic Studies.

(*) Clementi and Hopenhayn (2006) "A Theory of Financing Constraints and Firm Dynamics," Quarterly Journal of Economics.

Jermann and Quadrini (2007) "Stock market boom and the productivity gains of the 1990s," Journal of Monetary Economics.

C- Adjustment Costs

(*) Cooper and Haltiwanger (2006) "On the Nature of Capital Adjustment costs," Review of Economic Studies.

(*) Bachmann, Caballero and Engel (2008) "Aggregate Implications of Lumpy Investment New Evidence and a DSGE Model," NBER Working Papers 12336.

(*) Khan and Thomas (2008) "Idiosyncratic shocks and the role of non-convexities in plant and aggregate dynamics," Econometrica.

D'Erasmus (2009) "Investment and Firm Dynamics," mimeo.

Veracierto (2002) "Plant-Level Irreversible Investment and Equilibrium Business Cycles," American Economic Review.

Thomas (2002) "Is Lumpy Investment relevant for Business Cycles?"
Journal of Political Economy.

D - Productivity and Resource Misallocation

Olley and Pakes (1996) "The Dynamics of Productivity in the Telecommunications Equipment Industry", *Econometrica*, 64(6), 1263-97.

(*) Hsieh and Klenow (2009) "Misallocation and Manufacturing TFP in China and India," *The Quarterly Journal of Economics*, 124(4), 1403-1448.

(*) Foster, Haltiwanger and Syverson (2008) "Reallocation, Firm Turnover, and Efficiency: Selection on Productivity or Profitability?" *American Economic Review*.

(*) Restuccia and Rogerson (2008) "Policy Distortions and Aggregate Productivity with Heterogeneous Plants," *Review of Economic Dynamics*, 11(4), 707-720.

Guner, Ventura and Yi (2008) "Macroeconomic Implications of Size-Dependent Policies," *Review of Economic Dynamics*, 11(4), 721-744.

(*) Midrigan and Xu (2010) " Finance and Misallocation: Evidence from plant level data," NBER working paper 15647.

Moll (2010) "Productivity losses from financial frictions: Can self-financing undo capital misallocation?," mimeo.

Petrin, Reiter and White (2011) "The Impact of Plant-level Resource Reallocations and Technical Progress on U.S. Macroeconomic Growth," *Review of Economic Dynamics*, 14(1), 3-26.

Banerjee and Moll (2010) "Why Does Misallocation Persist?," *American Economic Journal: Macroeconomics*, (2) 1, 189-206.

E – Aggregate Dynamics, Firm Distribution and Productivity Dispersion

(*) Khan and Thomas (2007) "Inventories and the Business Cycle: An Equilibrium Analysis of (S,s) Policies," *American Economic Review*.

Jaimovich and Floetotto (2008) "Firm dynamics, markup variations, and the business cycle," *Journal of Monetary Economics*, 55(7), 1238-1252.

Samaniego (2009) "Entry, Exit and Business Cycles in General Equilibrium Model," *Review of Economic Dynamics*.

Veracierto (2008) "Firing Costs and Business Cycles Fluctuations," International Economic Review.

Lee and Mukoyama (2008) "Entry, Exit and Plant-level Dynamics over the Business Cycle," mimeo.

(*) Bloom (2008) "Impact of Uncertainty shocks," Econometrica.

(*) Clementi and Palazzo (2010) "Entry, Exit, Firm Dynamics and Aggregate Fluctuations", mimeo.

(*) Arellano, Bai and Kehoe (2010) "Financial Markets and Fluctuations in Uncertainty," mimeo.

Bachmann and Bayer (2009) "Firm-specific productivity risk over the business cycle: facts and aggregate implications," working paper, University of Michigan.

Francois and Lloyd-Ellis (2009) "Schumpeterian Business Cycles with Pro-Cyclical R&D," Review of Economic Dynamics, 12(4), 567-591.

PART II (Taught by Dr. Aruoba)

1) Introduction (Reduced-Form Monetary Models, Dissatisfaction and Early Micro-Founded Solutions)

A - Money in the Utility Function

Sidrauski, Miguel (1967), "Rational Choice and Patterns of Growth in a Monetary Economy", *American Economic Review*, 57(2), 534-544

B - Transaction / Liquidity Cost and Shopping Time

Croushore, Dean (1993), "Money in the Utility Function: Functional Equivalence to a Shopping Time Model", *Journal of Macroeconomics*, 15, 175-182

Feenstra, Robert C. (1986), "Functional Equivalence Between Liquidity Costs and the Utility of Money", *Journal of Monetary Economics*, 17, 271-291

Baumol, William J. (1952), "The Transactions Demand for Cash: An Inventory Theoretic Approach", *Quarterly Journal of Economics*, 66(4), 545-556

Tobin, James (1956), "The Interest-Elasticity of Transactions Demand for Cash", *Review of Economics and Statistics*, 38(3), 241-247

C - Cash-in-Advance

Clower, Robert (1967), "A Reconsideration of the Microfoundations of Monetary Theory", *Western Economic Journal*, 6(1), 1-8

Lucas, Robert E., Jr. (1980), "Equilibrium in a Pure Currency Economy", in *Models of Monetary Economics*, eds. John H. Kareken and Neil Wallace, Federal Reserve Bank of Minneapolis

Svensson, Lars E.O. (1985), "Money and Asset Prices in a Cash-in-Advance Economy", *Journal of Political Economy*, 93(5), 919-944

Lucas, Robert E., Jr. and Nancy L. Stokey (1987), "Money and Interest in a Cash-in-Advance Economy", *Econometrica*, 55(3), 491-513

D - Dissatisfaction with Reduced-Form Models

(*) Kareken, John H. and Wallace, Neil (1980), "Introduction", in *Models of Monetary Economics*, eds. John H. Kareken and Neil Wallace, Federal Reserve Bank of Minneapolis

(*) Wallace, Neil (1998), "A Dictum for Monetary Theory", *Federal Reserve Bank of Minneapolis Quarterly Review*, 22(1), Winter, 20-26

E – Micro-foundations: Overlapping Generations Models and the Turnpike Model

(*) McCallum, Bennett T. (1983), "The Role of Overlapping Generations Models in Monetary Economics", *Carnegie-Rochester Conference Series on Public Policy*, 18, 9-44

Discussions by John Bryant and Neil Wallace and Response by Bennett T. McCallum

Wallace, Neil (1980), "The Overlapping Generations Model of Fiat Money", in *Models of Monetary Economics*, eds. John H. Kareken and Neil Wallace, Federal Reserve Bank of Minneapolis

Discussions by James Tobin and Jose Alexandre Scheinkman

Samuelson, Paul A. (1958), "An Exact Consumption-Loan Model of Interest with and without the Social Contrivance of Money", *Journal of Political Economy*, 66(6), 467-482

Townsend, Robert M. (1980), "Models of Money with Spatially Separated Agents" in *Models of Monetary Economics*, eds. John H. Kareken and Neil Wallace, Federal Reserve Bank of Minneapolis

2) Micro-foundations: Search-Based Models of Money

A - First Generation

(*) Kiyotaki, Nobuhiro and Randall Wright (1989), "On Money as a Medium of Exchange", *Journal of Political Economy*, 97, 927-954

(*) Kiyotaki, Nobuhiro and Randall Wright (1993), "A Search-Theoretic Approach to Monetary Economics", *American Economic Review*, 83, 63-77

(*) Rupert, Peter, Martin Schindler, Andrei Shevchenko and Randall Wright (2000), "The Search-Theoretic Approach to Monetary Economics: A Primer", *Federal Reserve Bank of Cleveland Economic Review*, Q4, 10-28

Kiyotaki, Nobuhiro and Randall Wright (1991), "A Contribution to the Pure Theory of Money", *Journal of Economic Theory*, 53, 215-235

B - Second Generation

(*) Trejos, Alberto and Randall Wright (1995), "Search, Bargaining, Money and Prices", *Journal of Political Economy*, 103, 118-141

Shi, Shouyong (1995), "Money and Prices: A Model of Search and Bargaining", *Journal of Economic Theory*, 67, 467-496

Nash, John F.(1950), "The Bargaining Problem", *Econometrica*, 18, 155-162

C - Third Generation and Beyond

(a) Pre-Lagos-and-Wright

(*) Molico, Miguel (2006), "The Distribution of Money and Prices in Search Equilibrium", *International Economic Review*, 47, 701-722

Shi, Shouyong (1997), "A Divisible Search Model of Fiat Money", *Econometrica*, 65, 75-102

Comment by Rauch (2000)

Camera, Gabriel and Dean Corbae (1999), "Money and Price Dispersion", *International Economic Review*, 40, 985-1008

(b) Lagos and Wright and Related Papers

(*) Lagos, Ricardo and Randall Wright (2005), "A Unified Framework for Monetary Theory and Policy Analysis", *Journal of Political Economy*, 113(3), 463-484

(*) Aruoba, S. Boragan and Randall Wright (2003), "Search Money and Capital: A Neoclassical Dichotomy", *Journal of Money, Credit and Banking*, 35(6), 1085-1105

Comments by C. J. Waller and P. Howitt.

(*) Aruoba, S. Boragan, Christopher J. Waller and Randall Wright (2011), "Money and Capital", *Journal of Monetary Economics*, forthcoming.

(*) Rocheteau, G. and R. Wright (2005), "Money in Search Equilibrium, in Competitive Equilibrium and in Competitive Search Equilibrium," *Econometrica*, 73(1), 175-202

Aruoba, S. Boragan, Rocheteau, G. And Christopher J. Waller (2007), "Bargaining and the Value of Money", *Journal of Monetary Economics*, 54, 2636-2655

Lagos, R. and G. Rocheteau (2008), "Money and Capital as Competing Media of Exchange," *Journal of Economic Theory*, 142, 247-258

Aruoba, S. Boragan (2011), "Money, Search and Business Cycles", *International Economic Review*, forthcoming.

Aruoba, S.B. and F. Schorfheide (2011), "Sticky Prices versus Monetary Frictions: An Estimation of Policy Trade-offs", *American Economic Journal: Macroeconomics*, 3(1), 60-90.

3) Positive Monetary Economics

A – What Happens After a Monetary Policy Shock?

(*) Christiano, L.J., M. Eichenbaum and C.L. Evans (1999), "Monetary Policy Shocks: What Have We Learned and to What End", *Handbook of Macroeconomics*, J.B. Taylor and M. Woodford eds., Volume 1, 66-145.

(*) Christiano, L.J., M. Eichenbaum and C.L. Evans (2005), "Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy," *Journal of Political Economy*, 113(1), 1-45

B – Menu Cost Models and the Effect of Monetary Policy

(*) Bills, M., and P. J. Klenow (2004): "Some Evidence on the Importance of Sticky Prices", *Journal of Political Economy*, 112(5), 947-985.

(*) Golosov, M. and R.E. Lucas, Jr. (2007), "Menu Costs and Phillips Curves", *Journal of Political Economy*, 115, 171-199.

(*) Eichenbaum, M., Jaimovich, N. and Rebelo, S. (2008), "Reference prices and nominal rigidities", Working paper 13829, *National Bureau of Economic Research*.

Midrigan, V. (2008), "Menu Costs, Multi-Product Firms, and Aggregate Fluctuations", *mimeo*.

Nakamura E., and J. Steinson (2008), "Five Facts About Prices: A Reevaluation of Menu Cost Models", *Quarterly Journal of Economics*, 123(4), 1415-1464.

Klenow, P. J., and O. Kryvtsov (2005): "State-Dependent or Time-Dependent Pricing: Does It Matter for Recent U.S. Inflation", *NBER Working Paper No. 11043*.

C – Information Frictions and the Effect of Monetary Policy

(*) Mackowiak, B. and M. Wiederholt (2009), "Optimal Sticky Prices under Rational Inattention", *American Economic Review*, 99(3), 769-803.

(*) Reis, R. (2010), "A Sticky-Information General-Equilibrium Model for Policy Analysis." In *Monetary Policy under Uncertainty and Learning*, edited by K. Schmidt-Heubel and C. Walsh, Central Bank of Chile.

4) DSGE Estimation

(*) Smets F. and R. Wouters (2007), "Shocks and Frictions in US Business Cycles: A Bayesian DSGE Approach", *American Economic Review*, 97(3), 586-606

(*) Schorfheide, F. (2008), "DSGE Model-Based Estimation of the New Keynesian Phillips Curve", *FRB Richmond Economic Quarterly*, 397-433.

Justiniano and Primiceri (2008), "The Time-Varying Volatility of Macroeconomic Fluctuations", *American Economic Review*, 98:3, 604-641.

Fernandez-Villaverde, J. and J. Rubio-Ramirez (2008), "How Structural are Structural Parameters?", *NBER Macro Annual 2007*

Fernandez-Villaverde, J. (2009), "The Econometrics of DSGE Models", *mimeo*.

5) Normative Monetary Economics

A – Welfare Cost of Inflation

(*) Lucas, Robert E., Jr., (2000), "Inflation and Welfare", *Econometrica*, 68(2), 247-274

(*) Cooley, Thomas F. and Gary D. Hansen (1989), "Inflation Tax in a Real Business Cycle Model", *American Economic Review*, 733-748

(*) Aruoba, S. Boragan, Christopher J. Waller and Randall Wright (2011), "Money and Capital", *Journal of Monetary Economics*, forthcoming.

(*) Craig, Ben and Guillaume Rocheteau (2008), "Inflation and Welfare: A Search Approach", *Journal of Money Credit and Banking*, 40, 89-120

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COURSE OUTLINE – PART I (Dr. D’Erasmus)

This outline will be revised during the semester. For the latest version, check the course webpage.

Lecture	Date	Topic
1	Jan 24	Income and Wealth Inequality: Some Facts and Basic Framework
2	Jan 26	A Different Income Process
3	Jan 31	Determinants of Wealth and Income Inequality
4	Feb 2	Determinants of Wealth and Income Inequality
5	Feb 7	Government Policy
6	Feb 9	Political Economy
7	Feb 14	Commitment I: Complete Markets
8	Feb 16	Commitment II: Incomplete Markets
9	Feb 21	Entrepreneurs
10	Feb 23	Firm Dynamics: Basic Models
11	Feb 28	Financial Frictions
12	Mar 2	Incomplete Markets
13	Mar 7	Productivity and Misallocation
14	Mar 9	Aggregate Fluctuations

COURSE OUTLINE – PART II (Dr. Aruoba)

This outline will be revised during the semester. For the latest version, check the course webpage.

Lecture	Date	Topic
1	Mar 14	Introduction to the Course Reduced-Form Models Dissatisfaction and Early Micro-Founded Solutions
2	Mar 16	Search-Based Models – First Generation
3	Mar 28	Search-Based Models – Second Generation
4 - 5	Mar 30 Apr 4, 6, 11, 13	Search-Based Models – Third Generation and Beyond
6	Apr 18, 20	Positive Monetary Economics
7	Apr 25, 27	DSGE Estimation
8	May 2,4	Normative Monetary Economics
	May 9	Review