

ECON 559: Current Monetary Theory and Policy

Topics in Macroeconomics, Monetary Economics, and International Finance

SPRING 2015

Monday 2:30-5:15 PM, 320 Kern

Instructor: Alessandro Dovis

Office: 615 Kern

Office Hours: After Class

In this class we will cover several topics that are active areas of research. Along the way we will develop/review useful tools. A tentative list of topics I plan to cover is the following:

1. Tools: How to think about (optimal) policy in macro models
2. Exchange Rates and Monetary Unions
3. Transmission Mechanism of Monetary Policy: Monetary policy and risk premia
4. Theories of Recession
5. Fiscal consolidation and stabilization episodes: Data searching for a theory
6. Normative and Positive Theories of Government Debt
7. Credit Market Frictions: Basics
8. Sovereign Default and Debt Crisis
9. Asset Pricing
10. Miscellaneous

Almost surely there won't be time to cover all of them in details. The list may be updated during the course of the class (also based on students interests).

A useful reference for the class is Ljungqvist and Sargent, "Recursive Macroeconomic Theory" (LS henceforth). Also Stokey, Lucas and Prescott, "Recursive Methods in Economic Dynamics" (SLP henceforth) is a classic that you should have to consult for technical

details.

Students will be required to make at least one class presentation (more if class size is not too large). In each class, I will ask for volunteers to present a paper, find and discuss some data, replicate/update results from a paper in the next class ... If there is no volunteer, I will assign the task to a student (or a group of students). In almost every class there will be a presentation by a student, say for 30 minutes or so.

In addition to students presentations, you will be notified in advance about which paper(s) I am going to cover in class. I expect that you read in advance the paper(s) we are going to discuss in class.

There is no final exam for this class. Your final grade will be based on:

1. Class presentation(s): 40%
2. Problem sets: 30%
3. Class participation: 30%

Here is a list of paper we may look at with some questions we will try to answer:

1 Tools: How to think about policy in macro models

1.1 Primal Approach to Policy and Implementation

- Ramsey, F. P. (1927). A Contribution to the Theory of Taxation. *The Economic Journal*, 47-61.
- Atkeson, A., Chari, V. V., & Kehoe, P. J. (2010). Sophisticated Monetary Policies*. *The Quarterly journal of economics*, 125(1), 47-89.
- Chari, V. V., & Kehoe, P. J. (1999). Optimal fiscal and monetary policy. *Handbook of macroeconomics*, 1, 1671-1745.
- Bassetto, M. (2005). Equilibrium and government commitment. *Journal of Economic Theory*, 124(1), 79-105.
- LS chapter 16

Different applications: think about forward guidance, bailout policies, pecuniary externality and asset prices I will try to develop a general treatment here

1.2 Lack of Commitment and Policy Games

- Kydland, F. E., & Prescott, E. C. (1977). Rules rather than discretion: The inconsistency of optimal plans. *The Journal of Political Economy*, 473-491.
- Abreu, D. (1988). On the theory of infinitely repeated games with discounting. *Econometrica: Journal of the Econometric Society*, 383-396.
- Abreu, D., Pearce, D., & Stacchetti, E. (1986). Optimal cartel equilibria with imperfect monitoring. *Journal of Economic Theory*, 39(1), 251-269.
- Abreu, D., Pearce, D., & Stacchetti, E. (1990). Toward a theory of discounted repeated games with imperfect monitoring. *Econometrica: Journal of the Econometric Society*, 1041-1063.
- Sustainable plans "trilogy":
 - Chari, V. V., & Kehoe, P. J. (1990). Sustainable plans. *Journal of Political Economy*, 783-802.
 - Chari, V. V., & Kehoe, P. J. (1993). Sustainable plans and mutual default. *The Review of Economic Studies*, 60(1), 175-195.
 - Chari, V. V., & Kehoe, P. J. (1993). Sustainable plans and debt. *Journal of Economic Theory*, 61(2), 230-261.
- Phelan, C., & Stacchetti, E. (2001). Sequential equilibria in a Ramsey tax model. *Econometrica*, 69(6), 1491-1518.
- Stokey, N. L. (2003). "Rules vs. discretion" after twenty-five years. In *NBER Macroeconomics Annual 2002, Volume 17* (pp. 9-64). MIT Press.
- Phelan, C. (2006). Public trust and government betrayal. *Journal of Economic Theory*, 130(1), 27-43.
- LS chapters 23, 24, 25

We will see plenty of examples later on.

Question: How to set up the problem when private claims are contingent also on gov't actions (such as cds on government debt). Off-path the price is zero but holdings affect incentives.

1.3 Markov Equilibrium and GEE

- Klein, P., Krusell, P., & Rios-Rull, J. V. (2008). Time-consistent public policy. *The Review of Economic Studies*, 75(3), 789-808.

Compare with regular primal approach: what is the difference? For instance look at:

- Alvarez, F., Kehoe, P. J., & Neumeyer, P. A. (2004). The time consistency of optimal monetary and fiscal policies. *Econometrica*, 72(2), 541-567.
- Chari, V.V., A. DAVIS, & P.J. Kehoe (2014) On the optimality of financial repression

see also LS chapter 12

2 Exchange Rates and Monetary Unions

2.1 New take on OCA and exchange rates regimes

- Werning, I., & Farhi, E. (2012). Fiscal unions (No. w18280). National Bureau of Economic Research.
- Farhi, E., & Werning, I. (2013). Dilemma not trilemma? Capital controls and exchange rates with volatile capital flows. In International Monetary Fund 14th Jacques Polak Annual Research Conference, Washington, DC.
- Farhi, E., & Werning, I. (2013). A theory of macroprudential policies in the presence of nominal rigidities (No. w19313). National Bureau of Economic Research.
- Gali, J., & Monacelli, T. (2005). Monetary policy and exchange rate volatility in a small open economy. *The Review of Economic Studies*, 72(3), 707-734.
- Adao, Correia and Teles (see also Correia, Nicolini, and Teles and Correia, Farhi, Nicolini and Teles)
- Farhi, E., Gopinath, G., & Itskhoki, O. (2014). Fiscal devaluations. *The Review of Economic Studies*, 81(2), 725-760.
- Alesina, A., & Barro, R. J. (2002). Currency Unions. *The Quarterly Journal of Economics*, 117(2), 409-436.
- Alesina, A., Barro, R. J., & Tenreyro, S. (2003). Optimal currency areas. In NBER Macroeconomics Annual 2002, Volume 17 (pp. 301-356). MIT Press.

- Giavazzi, F., & Pagano, M. (1988). The advantage of tying one's hands: EMS discipline and central bank credibility. *European Economic Review*, 32(5), 1055-1075.
- Chari, Davig and Kehoe (2013) Rethinking optimal currency areas
- Fuchs, W., & Lippi, F. (2006). Monetary union with voluntary participation. *The Review of Economic Studies*, 73(2), 437-457.
- Aguiar, M., Amador, M., Farhi, E., & Gopinath, G. (2014). Coordination and crisis in monetary unions (No. 165301).
- Hassan, T. A. (2013). Country size, currency unions, and international asset returns. *The Journal of Finance*, 68(6), 2269-2308.
- Atkeson, A., & Kehoe, P. J. (2006). The advantage of transparency in monetary policy instruments. Federal Reserve Bank of Minneapolis, Research Department.

2.2 Pass-through, Trade, Real Appreciation and Current Account Dynamics

Question: Pass-through of exchange rates and Friedman case for flexible exchange rates. Inconsistent?

Facts about Europe, real appreciation and labor market reforms. Comparison with Latin America.

- Burstein, A., & Gopinath, G. (2013). International Prices and Exchange Rates. In *Handbook of International Economics*.
- Atkeson, A., & Burstein, A. (2008). Pricing-to-market, trade costs, and international relative prices. *The American Economic Review*, 98(5), 1998-2031.
- Devereux, M. B., & Engel, C. (2003). Monetary policy in the open economy revisited: Price setting and exchange-rate flexibility. *The Review of Economic Studies*, 70(4), 765-783.
- Duarte, M., & Obstfeld, M. (2008). Monetary policy in the open economy revisited: The case for exchange-rate flexibility restored. *Journal of International Money and Finance*, 27(6), 949-957.
- Papers on trade on monetary unions/fixed exchange rates
- Cavallo, A., B. Neiman, and R. Rigobon (2014): Currency Unions, Product Introductions, and the Real Exchange Rate, *The Quarterly Journal of Economics*.

- Cavallo, A., Neiman, B., & Rigobon, R. (2014). The price impact of joining a currency union: evidence from Latvia (No. w20225). National Bureau of Economic Research.
- Schmitt-Grohé, S., & Uribe, M. (2013). Downward nominal wage rigidity, currency pegs, and involuntary unemployment.
See also: http://www.columbia.edu/~mu2166/dnwr_pegs_iu/dnwr_pegs_iu.html
- Parallel with literature on stabilization policies in Latin America:
Rebelo and Vegh NBER macro-annual
Calvo handbook chapter
- Lorenzoni, G. (2013). International Financial Crises. In Handbook of International Economics.

See http://www.ecb.europa.eu/home/html/researcher_compnet.en.html

2.3 Banking Union

- Farhi, E., & Tirole, J. (2014). Deadly Embrace: Sovereign and Financial Balance Sheets Doom Loops (No. 164191).
- Farhi, E., & Tirole, J. (2012). Collective Moral Hazard, Maturity Mismatch, and Systemic Bailouts. *American Economic Review*, 102(1), 60-93.
- Uhlig, H. (2014). Sovereign Default Risk and Banks in a Monetary Union. *German Economic Review*, 15(1), 23-41.

3 Transmission Mechanism of Monetary Policy: Monetary Policy and Risk Premia

- Atkeson, A., & Kehoe, P. J. (2009). On the need for a new approach to analyzing monetary policy. In *NBER Macroeconomics Annual 2008, Volume 23* (pp. 389-425). University of Chicago Press.
(and Cochrane comment)
- Gertler, M., & Karadi, P. (2014). Monetary policy surprises, credit costs and economic activity.
- Chodorow-Reich, G. (2014). Effects of Unconventional Monetary Policy on Financial Institutions. In *Brookings Panel on Economic Activity Conference Draft*.

- Alvarez, F., Atkeson, A., & Kehoe, P. J. (2009). Time-varying risk, interest rates, and exchange rates in general equilibrium. *The Review of Economic Studies*, 76(3), 851-878.
- Alvarez, F., Atkeson, A., & Kehoe, P. J. (2002). Money, interest rates, and exchange rates with endogenously segmented markets. *Journal of political economy*, 110(1), 73-112.
- Drechsler, I., Savov, A., & Schnabl, P. (2014). A Model of Monetary Policy and Risk Premia (No. w20141). National Bureau of Economic Research.
- Gertler, M., & Karadi, P. (2011). A model of unconventional monetary policy. *Journal of monetary Economics*, 58(1), 17-34.
- Gertler, M., & Karadi, P. (2013). Qe 1 vs. 2 vs. 3...: A framework for analyzing large-scale asset purchases as a monetary policy tool. *International Journal of Central Banking*, 9(1), 5-53.
- Bianchi, J., & Bigio, S. (2013). Liquidity Management and Monetary Policy.
- Williamson, S. D. (2012). Liquidity, monetary policy, and the financial crisis: A new monetarist approach. *The American Economic Review*, 102(6), 2570-2605.
- Gomes, J., Jermann, U., & Schmid, L. (2013). Sticky leverage. *The Wharton School Research Paper*, (52).
- Krishnamurthy and Vissing-Jorgensen

4 Theories of Recession

- Krugman, P. (1998). It's baaack: Japan's slump and the return of the liquidity trap. *Brookings Papers on Economic Activity*, 137-205.
- Eggertsson, G. B., & Krugman, P. (2012). Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach*. *The Quarterly Journal of Economics*, 127(3), 1469-1513.
- Chamley, C. (2013). When demand creates its own supply: saving traps. *The Review of Economic Studies*, rdt041.
- Angeletos, G. M., & La'O, J. (2013). Sentiments. *Econometrica*, 81(2), 739-779.

5 Fiscal Consolidations and Stabilization Episodes: Data Searching for a Theory

- Giavazzi, F., & Pagano, M. (1990). Can severe fiscal contractions be expansionary? Tales of two small european countries. In NBER Macroeconomics Annual 1990, Volume 5 (pp. 75-122). MIT Press.
- Alesina, A. F., & Ardagna, S. (2012). The design of fiscal adjustments (No. w18423). National Bureau of Economic Research.
- Perotti, R. (2011). The "austerity myth": gain without pain? (No. w17571). National Bureau of Economic Research.

6 Normative and Positive Theories of Government Debt

- Lucas Jr, R. E., & Stokey, N. L. (1983). Optimal fiscal and monetary policy in an economy without capital. *Journal of monetary Economics*, 12(1), 55-93.
- Barro, R. J. (1979). On the determination of the public debt. *The Journal of Political Economy*, 940-971.
- Chari, V. V., Christiano, L. J., & Kehoe, P. J. (1994). Optimal Fiscal Policy in a Business Cycle Model. *Journal of Political Economy*, 102(4).
- Mankiw, N. G. (2000). The Savers-Spenders Theory of Fiscal Policy. *American Economic Review*, 120-125.
- Aiyagari, S. R., Marcet, A., Sargent, T. J., & Seppälä, J. (2002). Optimal Taxation without State - Contingent Debt. *Journal of Political Economy*, 110(6), 1220-1254.
- Werning, I. (2007). Optimal fiscal policy with redistribution. *The Quarterly Journal of Economics*, 122(3), 925-967.
- Bhandari, A., Evans, D., Golosov, M., & Sargent, T. J. (2013). Taxes, debts, and redistributions with aggregate shocks (No. w19470). National Bureau of Economic Research.
- Battaglini, M., & Coate, S. (2008). A Dynamic Theory of Public Spending, Taxation, and Debt. *The American economic review*, 98(1), 201-236.
- Song, Z., Storesletten, K., & Zilibotti, F. (2012). Rotten Parents and Disciplined Chil-

dren: A Politico? Economic Theory of Public Expenditure and Debt. *Econometrica*, 80(6), 2785-2803.

- Angeletos, G. M., Collard, F., Dellas, H., & Diba, B. (2013). Optimal public debt management and liquidity provision (No. w18800). National Bureau of Economic Research.
- Krishnamurthy, A., & Vissing-Jorgensen, A. (2012). The aggregate demand for treasury debt. *Journal of Political Economy*, 120(2), 233-267.
- Aiyagari, S. R., & McGrattan, E. R. (1998). The optimum quantity of debt. *Journal of Monetary Economics*, 42(3), 447-469.
- Yared, P. (2010). Politicians, taxes and debt. *The Review of Economic Studies*, 77(2), 806-840.
- LS Chapter 26: Fiscal-Monetary Theories of Inflation

Think about government debt and income inequality (link to Dovis, Golosov and Shourideh)
History and facts: (look at references in Andy's course)

7 Credit Market Friction: Basics

We probably won't have time to cover this in class, but you should know these papers.

7.1 Lack of Commitment

- Kehoe and Levine
- Alvarez and Jermann
- Kocherlakota
- Thomas and Worrall
- Hellwig and Lorenzoni

Multiplicity in AJ implementation, pecuniary externality (talk about Prescott and Townsend too)

7.2 Private Information and Hidden Action

- Green

- Thomas and Worrall
- Atkeson and Lucas JET and RESTUD
- Cole and Kocherlakota
- LS chapter 20, 21, 22

7.3 Incomplete Market Models

- Ayagari
- Rios-Rull et al ECMA

8 Sovereign Default and Debt Crisis

Facts from Atkeson's class

See also: <http://conference.nber.org/confer/2014/SDf14/SDf14prg.html>

Data project: correlation primary surplus and GDP, "public current account" and GDP for different countries. Contrast this evidence with quantitative SD model. Is emphasis on counter-cyclical NX wrong when we consider public flows?

- Aguiar, M., & Amador, M. (2013). Sovereign debt. Handbook of International Economics, 4.
- Tomz, M., & Wright, M. L. (2013). Empirical Research on Sovereign Debt and Default. Annu. Rev. Econ., 5(1), 247-272.

8.1 Quantitative Incomplete Market Models

- Eaton, J., & Gersovitz, M. (1981). Debt with potential repudiation: Theoretical and empirical analysis. The Review of Economic Studies, 289-309.
- Aguiar, M., & Gopinath, G. (2006). Defaultable debt, interest rates and the current account. Journal of international Economics, 69(1), 64-83.
- Arellano, C. (2008). Default risk and income fluctuations in emerging economies. The American Economic Review, 690-712.
- Chatterjee, S., & Eyigungor, B. (2012). Maturity, Indebtedness, and Default Risk. The American Economic Review, 102(6), 2674-2699.

- Mendoza, E. G., & Yue, V. Z. (2012). A General Equilibrium Model of Sovereign Default and Business Cycles. *The Quarterly Journal of Economics*, 127, 889-946.

8.2 Complete Market models

- Thomas and Worall
- Atkeson, A. (1991). International lending with moral hazard and risk of repudiation. *Econometrica: Journal of the Econometric Society*, 1069-1089.
- Aguiar, M., Amador, M., & Gopinath, G. (2009). Investment cycles and sovereign debt overhang. *The Review of economic studies*, 76(1), 1-31.
- Kehoe, P. J., & Perri, F. (2004). Competitive equilibria with limited enforcement. *Journal of Economic Theory*, 119(1), 184-206.
- Kehoe, P. J., & Perri, F. (2002). International business cycles with endogenous incomplete markets. *Econometrica*, 70(3), 907-928.
- Dovis, A. (2014) Efficient sovereign default
- Broner, F. A., Lorenzoni, G., & Schukler, S. L. (2013). Why do emerging economies borrow short term?. *Journal of the European Economic Association*, 11(s1), 67-100.

8.3 Debt Dilution and Long Term Debt

- Bizer and DeMarzo
- Chatterjee, S., & Eyigungor, B. (2012). Debt dilution and seniority in a model of defaultable sovereign debt.
- Arellano, C., & Ramanarayanan, A. (2012). Default and the maturity structure in sovereign bonds. *Journal of Political Economy*, 120(2), 187-232.
- Aguiar, M., & Amador, M. (2013). Take the Short Route: How to Repay and Restructure Sovereign Debt with Multiple Maturities (No. w19717). National Bureau of Economic Research.
- Dovis, A. (2014) Efficient sovereign default

8.4 Multiplicity and Coordination Problems

- Cole, H. L., & Kehoe, T. J. (2000). Self-fulfilling debt crises. *The Review of Economic Studies*, 67(1), 91-116.
- Calvo, G. A. (1988). Servicing the public debt: The role of expectations. *The American Economic Review*, 647-661.
- Aguiar, M., Amador, M., Farhi, E., & Gopinath, G. (2013). Crisis and commitment: Inflation credibility and the vulnerability to sovereign debt crises (No. w19516). National Bureau of Economic Research.
- Conesa, J. C., & Kehoe, T. J. (2012). Gambling for redemption and self-fulfilling debt crises (No. 465). Federal Reserve Bank of Minneapolis.
- Roch, F., & Uhlig, H. (2012). The dynamics of sovereign debt crises and bailouts. draft, University of Chicago.
- Corsetti, G., & Dedola, L. (2014). The "Mystery of the Printing Press" Monetary Policy and Self-fulfilling Debt Crises (No. 1424).
- Lorenzoni, G., & Werning, I. (2013). Slow moving debt crises (No. w19228). National Bureau of Economic Research.
- Bocola and Dovis (2014) in progress
- Phelan, C. (2004). On the irrelevance of the maturity structure of government debt without commitment. *Games and Economic Behavior*, 46(1), 115-128.
- Cooper, R., & Nikolov, K. (2013). Government Debt and Banking Fragility: The Spreading of Strategic Uncertainty (No. w19278). National Bureau of Economic Research.

8.5 Other Topics

Financial repression

Redistribution: Dovis, Golosov, Shourideh and D'Erasmus and Mendoza

9 Asset Pricing

- Chien, Y., Cole, H., & Lustig, H. (2011). A multiplier approach to understanding the macro implications of household finance. *The Review of Economic Studies*, 78(1), 199-234.
- Alvarez, F., & Jermann, U. J. (2005). Using asset prices to measure the persistence of the marginal utility of wealth. *Econometrica*, 73(6), 1977-2016.
- Alvarez, F., & Jermann, U. J. (2004). Using Asset Prices to Measure the Cost of Business Cycles. *Journal of Political Economy*, 112(6), 1223-1256.
- Krueger, D., & Lustig, H. (2010). When is Market Incompleteness Irrelevant for the Price of Aggregate Risk (and when is it not)?. *Journal of Economic Theory*, 145(1), 1-41.
- More to come

10 Miscellaneous

- Food for thought:
<http://www.imf.org/external/np/res/seminars/2013/arc/>
<http://www.imf.org/external/np/res/seminars/2014/arc/>
- Chari, V., Kehoe, P. J., & McGrattan, E. R. (2009). New Keynesian Models: Not Yet Useful for Policy Analysis. *American economic journal. Macroeconomics*, 1(1), 242-266.
- More to come

Policies Regarding Disability, Academic Integrity, and Absences Disability

The Pennsylvania State University encourages qualified people with disabilities to participate in its programs and activities and is committed to the policy that all people shall have equal access to programs, facilities, and admissions without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. If you anticipate needing any type of accommodation in this course or have questions about physical access, please tell the instructor as soon as possible.

Academic Integrity The ability of the University to achieve its purposes depends upon the quality and integrity of the academic work that its faculty, staff and students perform. Academic freedom can flourish only in a community of scholars which recognizes that intellectual integrity, with its accompanying rights and responsibilities, lies at the heart of its mission. Observing basic honesty in one's work, words, ideas, and actions is a principle to which all members of the community are required to subscribe.

All course work by students is to be done on an individual basis unless an instructor clearly states that an alternative is acceptable. Any reference materials used in the preparation of any assignment must be explicitly cited. In an examination setting, unless the instructor gives explicit prior instructions to the contrary, whether the examination is in-class or take-home, violations of academic integrity shall consist of any attempt to receive assistance from written or printed aids, or from any person or papers or electronic devices, or of any attempt to give assistance, whether the one so doing has completed his or her own work or not. Other violations include, but are not limited to, any attempt to gain an unfair advantage in regard to an examination, such as tampering with a graded exam or claiming another's work to be one's own.

Violations shall also consist of obtaining or attempting to obtain, previous to any examinations, copies of the examination papers or the questions to appear thereon, or to obtain any illegal knowledge of these questions.

Lying to the instructor or purposely misleading any Penn State administrator shall also constitute a violation of academic integrity.

In cases of a violation of academic integrity it is the policy of the Department of Economics to impose the most severe penalties that are consistent with University guidelines.

Valid Excuses and Missed Evaluative Events

During the course many possible situations may arise that would result in your inability to attend class, attend exams, or perform at a minimally acceptable level during an examination. Illness or injury, family emergencies, certain University- approved curricular and extra-curricular activities, and religious holidays can be legitimate reasons to miss class or to be excused from a scheduled examination.

In the case of your own illness or injury, confirmation from a physician, physician's assistant, a nurse-practitioner, or a nurse is required. Be advised that University Health Services cannot provide such verification unless they have provided treatment and the student authorizes release of information to the instructor. Further, barring extraordinary circumstances, the confirmation must be available to the instructor prior to the missed course event.

With regard to family emergencies, you must provide verifiable documentation of the emergency. Given the vast array of family emergencies the instructor will provide precise guidance as to what constitutes adequate documentation. Unless the emergency is critical you should notify the instructor in advance of your absence from the scheduled course event. In cases of critical emergencies, you must notify the instructor within one week of your absence.

For University-approved curricular and extra-curricular activities, verifiable documentation is also required. The student should obtain from the unit or department sponsoring the activity a letter (or class absence form) indicating the anticipated absence(s). The letter must be presented to the instructor at least one week prior to the first absence. In the case of religious holidays, the student should notify the instructor by the third week of the course of any potential conflicts.

If a student misses a class during which an evaluative event (e.g., a quiz or an exam) takes place, and the student has a valid excuse, it is the policy of the Economics Department that the missed event may be made up in one of two ways that are to be decided by the instructor:

1. the student will take a make-up version for the missed evaluative event; or
2. the student will be excused from the missed event, and the weight of that event in the overall course grade will be reassigned to either the course final exam or to a subset of the subsequent evaluative events in the course.