

Course on “Monetary and Fiscal Policy Interactions”

Prepared by Professor Todd Walker

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Course Description: The course aims to provide some of the background necessary to understand and conduct research at the frontier of monetary, fiscal and financial policy interactions. Although much research studies monetary policy in isolation from fiscal and macroprudential policy, and vice versa, doing so implicitly imposes strong maintained assumptions on policy behavior that may not hold in practice. When those assumptions do not hold, the resulting equilibria can look very different. This course uses a variety of dynamic stochastic general equilibrium models to develop the economic reasoning behind this logic. Models will range from simple “toy” models whose solutions can be derived analytically to more complex models that must be solved numerically.

So-called “unconventional” monetary policy operations that many central banks undertook are, in fact, fiscal policy in the sense that the assets the central banks acquired are ultimately backed by the government’s taxing authority. In addition, many governments implemented substantial fiscal stimulus plans in response to the worldwide recession. Those plans, coupled with aging populations in many advanced economies, portend substantial fiscal stress in the future.

Fiscal stress can undermine the ability of central banks—even inflation targeting central banks who are firmly committed to achieving their targets—to control inflation and to anchor inflation expectations. One well-understood mechanism is Sargent and Wallace’s “Unpleasant Arithmetic:” if net-of-interest surpluses do not adjust to back the value of debt, then money creation must do the adjusting. But Unpleasant Arithmetic is only one mechanism by which fiscal stress can produce inflation. Whereas Sargent and Wallace’s mechanism leads to high and growing inflation, a second mechanism—sometimes called the “fiscal theory”—need not generate high or even especially volatile inflation. The fiscal theory mechanism does, however, imply that inflation is no longer under the control of the central bank.

The mini-course will address several questions. Under what conditions might the fiscal theory mechanism become operative? What kind of fiscal behavior is necessary for the central bank to successfully target inflation? How should we model “unconventional” monetary policy? How do macroprudential policy goals interfere with the implementation of monetary policy? Are there observable implications that identify how fiscal policy can be inflationary? How do policy interactions change when fiscal instruments distort behavior? If monetary and fiscal policies undergo periodic shifts in the rules they obey, how do equilibria change? How do monetary and fiscal policies interact in open economies or in a monetary union? How can we model and analyze the uncertainty intrinsic to future monetary and fiscal behavior?

Meeting Times: There will be 10 lectures beginning Monday July 18 at 10AM US EST. Each lecture will last 120 minutes.

Software: Several Matlab programs used to solve and analyze dynamic economies will be provided.

Course Outline:

- Monday July 18: Importance of Policy Interactions

Brief Description: I will introduce the topic of policy interactions and provide context within the current economic environment.

- Tuesday July 19: Solving Linear dynamic stochastic models

Readings: Sims (2002), Campbell (1994)

Code: WalkerGensys.zip

Brief Description: An introduction into solving and analyzing a linearized DSGE models following Sims (2002).

Problem Set One: Solving Campbell (1994).

- Wednesday July 20: Monetary Doctrines

Readings: Ljungqvist and Sargent (2004, chapter 23), Leeper (1991)

Brief Description: Lecture 3 will establish several well-known monetary doctrines.

- Thursday July 21: Monetary-Fiscal Interactions

Brief Description: Monetary and fiscal interactions are studied in an endowment economy.

Readings: Leeper (1991), Leeper and Walker (2011)

Code: WalkerNominalRigidities.zip

Problem Set: Introducing Nominal Rigidities.

- Friday July 22: Monetary-Fiscal Interactions in Extended Environments

Brief Description: I will extend the simple endowment economy of Lecture 3 to monetary unions, open economies, longer-maturity structures, and models with nominal frictions. The emphasis will be on developing intuition for how fiscal inflations operate in various settings.

Readings: Leeper and Walker (2011).

- Monday July 25: Monetary-Fiscal Interactions with Government Spending

Brief Description: The importance of monetary-fiscal interactions in assessing the size of the fiscal multiplier will be studied.

Readings: Leeper, Traum, and Walker (2011), Christiano, Eichenbaum, and Rebelo (2011).

- Tuesday July 26: Macroprudential Policy

Brief Description: Macroprudential policy refers to a set of regulatory policies imposed mainly on financial institutions for macroeconomic purposes. Using a DSGE model which features dual (business and household) credit markets and bank capital functioning as a buffer stock, Lecture 7 will evaluate the effects of market-universal (capital requirement ratio regulation) and market-specific (LTV regulation) countercyclical macroprudential policy.

Readings: Suh and Walker (2013).

- Wednesday July 27: Fiscal Limits

Readings: Bi (2011), Bi, Leeper, and Leith (2010)

Code: Bi.zip

Brief Description: Lectures 8 and 9 demonstrate the importance of fiscal limits in modeling sovereign debt default. As a country approaches its fiscal limit, the probability of default and therefore the interest rate spread on sovereign debt can non-monotonically increase. It is shown that the fiscal limit is a crucial state variable in understanding debt dynamics of small open economies.

Problem Set: Calculating Fiscal Limits.

- Thursday July 28: Fiscal Limits and the Banking Sector

Readings: Bi (2011), Bi, Leeper, and Leith (2010)

Code: Bi.zip

Brief Description: Lecture 9 will study the interaction between fiscal and macroprudential policy by introducing a banking sector subject to value-at-risk constraints where sovereign debt enters with a zero-risk weight. The zero-risk weight policy assumes sovereign debt is riskless, which is distortionary when fiscal policy is subject to fiscal limits.

- Friday July 29: Exchange Rate and Capital Flows in Small Open Economies

Brief Description: Policy interaction will be extended to include exchange rate policy and capital flows.

Readings: TBA.

References

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Bi, H., E. M. Leeper, and C. Leith (2010): "Stabilization versus Sustainability: Macroeconomic Policy Tradeoffs," Manuscript, Indiana University, November.

Campbell, J. Y. (1994): "Inspecting the Mechanism: An Analytical Approach to the Stochastic Growth Model," *Journal of Monetary Economics*, 33(June), 463–506.

Christiano, L., M. Eichenbaum, and S. Rebelo (2011): "When Is the Government Spending Multiplier Large?," *Journal of Political Economy*, 119(1), 78–121.

Leeper, E. M. (1991): "Equilibria Under 'Active' and 'Passive' Monetary and Fiscal Policies," *Journal of Monetary Economics*, 27(1), 129–147.

Leeper, E. M., N. Traum, and T. B. Walker (2011): "Clearing Up the Fiscal Multiplier Morass," *NBER Working Paper No. 17444*, September.

Leeper, E. M., and T. B. Walker (2011): "Perceptions and Misperceptions of Fiscal Inflation," Manuscript, Indiana University, June.

Ljungqvist, L., and T. J. Sargent (2004): *Recursive Macroeconomic Theory*. MIT Press, Cambridge, MA, 2nd edn.

Sims, C. A. (2002): "Solving Linear Rational Expectations Models," *Computational Economics*, 20(1), 1–20.

Suh, H., and T. B. Walker (2013): "Dissecting the Financial Frictions in the 2007-2009 Financial Crisis," Manuscript, Indiana University.