

This course shall build on the macroeconomic theory courses (Economics 309, 419, and 429) and the survey course in monetary theory and policy (Economics 346). Nevertheless, some students may not have taken Economics 346. Thus, Economics 346 is not a prerequisite for this course. The coverage focuses on a number of important topics in monetary theory and policy.

**Course Grading Procedure:**

We shall have a mid-term and final exam. In addition, you will be asked to write a paper and to do several homework assignments. Your grade will be an average of the exams, paper, and homework assignments.

**Text:**

The text for the course is *Monetary Theory and Policy* by Carl E. Walsh, MIT Press, 1998. The Co-op has ordered copies for your convenience.

**Reference Books: (On reserve in the library)**

1. Commission on Money and Credit, Stabilization Policies.
2. Dornbusch, R., Open Economy Macroeconomics.
3. Friedman, B., and Hahn, F., The Handbook of Monetary Economics.
4. Friedman, M., Studies in the Quantity Theory of Money.
5. Fry, M., Money, Interest and Banking in Economic Development.
6. Keeton, W., Equilibrium Credit Rationing.
7. Laidler, D., The Demand for Money: Theories and Evidence.
8. McKinnon, R., Money and Capital in Economic Development
9. Persson, T., and Tabellini, G., Macroeconomic Policy, Credibility and Politics.
10. Sargent, T., Rational Expectations and Inflation.
11. Shaw, E., Financial Deepening in Economic Development.
12. Simpson, T., Money, Banking and Economic Analysis.
13. Taylor, J., and Woodford, M., Handbook of Macroeconomics.

**Course Outline and Bibliography:**

**I. Introduction and Basics**

**A. Basic IS-LM-AS Model**

**B. Basic Empirical Regularities**

**1. Inflation, Money Growth, and Output Growth**

**C. Government Budget Constraint Basics**

**1. Linkage between Monetary and Fiscal Policy**

**a. Closed Economy**

**b. Open Economy**

**2. Government Deficit and Inflation**

**a. Seigniorage Revenue**

**b. Monetary Policy Reaction Functions**

**D. Is Government Debt Wealth?**

- 1. Government Bonds**
- 2. Government Money**

**E. Relative Importance of Monetary and Fiscal Policy**

- 1. Ando/Modigliani and Friedman/Meiselman Debate**
- 2. St. Louis Equation**
- 3. VAR Models**

**Readings:**

1. Walsh, C., Chapter 1
2. Dornbusch, R., Chapter 2.
3. Mankiw, G., "The Growth of Nations," BPEA, (1) 1995.
4. McCandles, G., and Weber, W., "Some Monetary Facts," FRBM Quarterly Review, Summer 1995.
5. Sargent, T., and Wallace, N., "Some Unpleasant Monetarist Arithmetic," FRBM Quarterly Review, Fall 1981.
6. Miller, P., "Higher Deficit Policies Lead to Higher Inflation," FRBM Quarterly Review, Winter 1983.
7. Miller, P., "Budget Deficit Mythology," FRBM Quarterly Review, Fall 1983.
8. Wallace, N., "A Legal Restrictions Theory of the Demand for 'Money' and the Role of Monetary Policy," FRBM Quarterly Review, Winter 1983.
9. Friedlander, A., "Macro Policy Goals and Revealed Preference," QJE, February 1973.
10. Havrilesky, T., Snapp, R., and Schwertzer, R., "Test of the Federal Reserve's Reaction to the State of the Economy," SSQ, March 1975.
11. Abrams, R., Froyen, R., and Waud, R., "Monetary Policy Reaction Functions, Consistent Expectations, and the Burns Era," JMCB, February 1980.
12. Demopoulos, G., Katsimbris, G., and Miller, S., "Monetary Policy and Central Bank Financing of Government Budget Deficits," EER, July 1987.
13. Abrams, R., Froyen, R., and Waud, R., "The State of the Federal Budget and the State of the Economy," EJ, October 1983.
14. Bradley, M., and Potter, S., "The State of the Federal Budget and the State of the Economy: Further Evidence," EJ, January 1986.
15. Miller, S., and Velz, O., "The Influence of U.S. Presidential Administrations on Monetary Policy," JPM (2) 1992.
16. Barro, R., "Are Government Bonds Net Wealth?" JPE, November 1974.
17. Feldstein, M., "Perceived Wealth in Bonds and Social Security," JPE, April 1976.
18. Buchanan, J., "Barro on the Ricardian Equivalence Theorem," JPE, April 1976.
19. Barro, R., "Reply to Feldstein and Buchanan," JPE, April 1976.
20. Chiang, A., and Miller, S., "The Perception of Government Bonds and Money as Net Wealth: An Integrated Approach," EEJ, Fall 1998.
21. Friedman, M., and Meiselman, D., "The Relative Stability of Monetary Velocity and the Investment Multiplier in the United States," in Commission on Money and Credit, Stabilization Policies, 1963.
22. Ando, A., and Modigliani, F., "Velocity and the Investment Multiplier," AER, September 1965.
23. Friedman, M., and Meiselman, D., "Reply," AER, September 1965.

24. Anderson, L., and Jordan, J., "Monetary and Fiscal Actions: A Test of Their Relative Importance in Economic Stabilization," FRBStL Review, November 1968.
25. Batten, D., and Hafer, R., "The Relative Impact of Monetary and Fiscal Actions on Economic Activity: A Cross-Country Comparison," FRBStL Review, January 1983.
26. Cooley, T., and Leroy, S., "Atheoretical Macroeconomics: A Critique," JME, November 1985.
27. Sims, C., "Money, Income, and Causality," AER, September 1972.
28. Elliot, J., "The Influence of Monetary and Fiscal Actions on Total Spending: The St. Louis Equation Revisited," JMCB, May 1975.
29. Ahking, F. and Miller, S., "The Relationship Between Government Deficits, Money Growth, and Inflation," JMACRO, Fall 1985.

## II. Monetary Conundrum: Why Does the Private Sector Simultaneously Hold (Use) Government Bonds and Government Money?

### A. What Is Money and Why Is It Held (Used)?

1. Functions of Money
  - a. Medium of Exchange
  - b. Store of Value
2. Legal Restrictions

### A. Introduction of Money into a General Equilibrium Model

1. Tobin Model/Tobin Effect
2. Criticisms of Tobin Model
  - a. Positive Correlation between Inflation and Output
  - b. No Role for Money in Model
  - c. No Micro Foundations for Money

### A. Solutions to Criticisms of Tobin Model

1. Money in the Utility Function: Ad Hoc Solution
2. Transactions Approaches: Medium of Exchange Function
  - a. Shopping Time
  - b. Cash In Advance
  - c. Search
1. Public Finance Approaches: Store of Value Function

### E. Short-Run IS-LM-AS Model Again

1. Price and/or Inflation Stickiness

### Readings:

1. Walsh, C., Chapters 2, 3, 4, and 5.
2. Simpson, T., Chapter 2.
3. Solow, R., "A Contribution to the Theory of Economic Growth," QJE, February 1956.
4. Tobin, J., "Money and Economic Growth," Econ, October 1965.
5. Sidrauski, M., "Rational Choice and Patterns of Growth in a Monetary Economy," AER, May 1967.

6. Samuelson, P., "An Exact Consumption-Loan Model of Interest With or Without the Social Contrivance of Money," IPE, December 1958.
7. Cooley, T., and Hansen, G., "The Inflation Tax in a Real Business Cycle Model," AER, September 1989.
8. Lucas, R., and Stokey, N., "Money and Interest in a Cash-In-Advance Economy," Econ, May 1987.
9. Svensson, L., "Money and Asset Prices in a Cash-In-Advance Economy," IPE, October 1985.
10. Clower, R., "A Reconsideration of the Microfoundations of Monetary Theory," WEJ, December 1967.
11. Lucas, R., "Money in a Theory of Finance," Carnegie-Rochester Conference Series, Autumn 1984.
12. Kiyotaki, N., and Wright, R., "On Money as a Medium of Exchange," IPE, August 1989.
13. Kiyotaki, N., and Wright, R., "A Search-Theoretic Approach to Monetary Economics," AER, March 1993.
14. Trejos, A., and Wright, R., "Search, Bargaining, Money and Prices: Recent Results and Policy Implications," JMCB, August 1993.
15. Sargent, T., and Wallace, N., "Some Unpleasant Monetarist Arithmetic," FRBM Quarterly Review, (3) 1981.
16. Aiyagari, R., and Gertler, M., "The Backing of Government Bonds and Monetarism," JME, July 1985.
17. Cagan, P., "The Monetary Dynamics of Hyperinflation," In M. Friedman, Studies in the Quantity Theory of Money, University of Chicago Press, 1956.
18. Bruno, M., and Fischer, S., "Seigniorage, Operating Rules, and the High Inflation Trap," QJE, May 1990.
19. Sargent, T., "The Ends of Four Big Inflations," In Sargent, Rational Expectations and Inflation, Harper and Row, 1986.
20. Phelps, E., "Inflation and the Theory of Public Finance," SJE, March 1973.
21. Mankiw, G., "The Optimal Collection of Seigniorage: Theory and Evidence," JME, September 1987.
22. Calvo, G., and Leiderman, L., "Optimal Inflation Tax Under Precommitment: Theory and Evidence," AER, March 1992.
23. Friedman, M., "The Role of Monetary Policy," AER, March 1968.
24. Phelps, E., "Money-Wage Dynamics and Labor Market Equilibrium," IPE, August 1968.
25. Lucas, R., "Expectations and the Neutrality of Money," IET, April 1972.
26. Barro, R., "Unanticipated Money Growth and Unemployment in the United States," AER, March 1977.
27. Barro, R., "Unanticipated Money, Output, and the Price Level in the United States," IPE, August 1978.
28. Lucas, R., "Some International Evidence on Output-Inflation Tradeoffs," AER, June 1973.
29. Sargent, T., and Wallace, N., "Rational Expectations, the Optimal Monetary Instrument, and the Optimal Money Supply Rule," IPE, April 1975.
30. Taylor, J., "Staggered Wage Setting in a Macro Model," AER, May 1979.
31. Taylor, J., "Aggregate Dynamics and Staggered Contracts," IPE, February 1980.
32. Calvo, G., "Staggered Prices in a Utility-maximizing Framework," JME, September 1983.
33. McCallum, B., "A Semi-Classical Model of Price Level Adjustment," CRCS (41) December 1994.
34. Furher, J., and Moore, G., "Inflation Persistence," QJE, February 1995.

### III. Monetary Policy Implementation

#### A. Monetary Policy Implementation Basics

1. Instruments
2. Immediate and Intermediate Targets
3. Ultimate Objectives

#### B. Timing Problems

1. Inside and Outside Lag
  - a. Policy Instability

#### C. Uncertainty Problems

1. Optimal Choice of Monetary Policy Instruments
  - a. Closed Economy
  - b. Open Economy

#### A. Rules Versus Discretion

1. Money Base Rules
2. Interest Rate Rules
3. Monetary Policy Reaction Functions Again

#### Readings:

1. Walsh, C., Chapters 9 and 10.
2. Simpson, T., Chapters 10, 11, 12, and 13.
3. Hamburger, M., "The Lag in the Effect of Monetary Policy: A Survey of Recent Literature," FRBNY Monthly Review, December 1971.
4. Holbrook, R., "Optimal Economic Policy and the Problems of Instrument Instability," AER, March 1972.
5. Poole, W., "Optimal Choice of Monetary Policy Instruments in a Simple Macro Model," QJE, May 1970.
6. Bernanke, B., and Mihov, I., "Measuring Monetary Policy" CEPR/FRBSF Conference, March 1996.
7. Friedman, B., "Empirical Issues in Monetary Policy: A Review of Monetary Aggregates and Monetary Policy," JME, January 1977.
8. Friedman, M., "Monetary Policy: Theory and Practice," JMCB, February 1982.
9. Friedman, B., "Targets and Instruments of Monetary Policy," In Friedman and Hahn, The Handbook of Monetary Economics, North-Holland, Vol. 2, 1990.
10. McCallum, B., "The Case for Rules in the Conduct of Monetary Policy: A Concrete Example," FRBR Economic Review, September/October 1987.
11. McCallum, B., "Robustness Properties of a Rule for Monetary Policy," CRCS Autumn 1988.
12. McCallum, B., "Could a Monetary Base Rule Have Prevented the Great Depression?" JME, August 1990.

13. Frankel, J. and Chinn, M., "The Stability Properties of a Nominal GDP Rule," JMCB, May 1995.
14. Fair, R. and Howry, P., "Evaluating Alternative Monetary Policy Rules," IME, Oct. 1996.
15. McCallum, B., "Some Issues Concerning Interest Rate Pegging, Price Level Determinancy, and the Real Bills Doctrine," IME, January 1986.
16. Goodfriend, M., "Interest-Rate Smoothing and Price Level Trend-Stationarity," IME, May 1987.

## **I. Credit Channel for Monetary Policy**

### **A. Imperfect Information and Credit Markets**

1. **Adverse Selection**
2. **Moral Hazard**
3. **Monitoring Costs**
4. **Agency Costs**

### **B. Credit Rationing and Macroeconomic Policy**

#### **Readings:**

1. Walsh, C., Chapter 7.
2. Jaffee, D., and Russell, T., "Imperfect Information, Uncertainty, and Credit Rationing," QJE, November 1976.
3. Keeton, W., Equilibrium Credit Rationing, Garland Press, 1979
4. Stiglitz, J., and Weiss, A., "Credit Rationing in Markets with Imperfect Information," AER, June 1981.
5. Jaffee, D., and Stiglitz, J., "Credit Rationing," In Friedman and Hahn, The Handbook of Monetary Economics, North-Holland, Vol 2, 1990.
6. Bernanke, B., and Blinder, A., "Credit, Money, and Aggregate Demand," AER, May 1988.

## **I. Central Banking and Institutional Design**

### **A. Discretionary Policy and Time Inconsistency**

1. **Inflationary Bias**

### **A. Solutions to Inflationary Bias**

1. **Conservative Central Banker**
2. **Inflation (Money Growth) Targets**
3. **Performance Contracts**

#### **Readings:**

1. Walsh, C., Chapter 8.
2. Kydland, F., and Prescott, E., "Rules Rather Than Discretion: The Inconsistency of Optimal Plans," JPE, June 1977.
3. Cukierman, A., "Central Bank Behavior and Credibility: Some Recent Theoretical Developments," FRBStL Review, May 1986.

4. Persson, T., "Credibility of Macroeconomic Policy: An Introduction and A Broad Survey," EER, March 1988.
5. Blackburn, K., and Christensen, M., "Monetary Policy and Policy Credibility," IEL, March 1989.
6. Calvo, G., "On the Time Consistency of Optimal Policy in a Monetary Economy," Econ, November 1978.
7. Persson, T., and Tabellini, G., Macroeconomic Policy, Credibility, and Politics, Harwood Academic Publishers, 1990.
8. Persson, T., and Tabellini, G., "Political Economics and Macroeconomic Policy," In Taylor and Woodford, Handbook of Macroeconomics, 1997.
9. Barro, R., and Gordon, D., "A Positive Theory of Monetary Policy in a Natural-Rate Model," JPE, August 1983.
10. Barro, R., and Gordon, D., "Rules, Discretion, and Reputation in a Model of Monetary Policy," JME, July 1983.
11. Canzoneri, M., "Monetary Policy Games and the Role of Private Information," AER, September 1985.
12. Rogoff, K., "The Optimal Commitment to an Intermediate Target," QJE, November 1985.
13. Walsh, C., "Optimal Contracts for Central Bankers," AER, March 1995.
14. Walsh, C., "Is New Zealand's Reserve Bank Act of 1989 an Optimal Central Bank Contract," JMCB, November 1995.
15. Persson, T., and Tabellini, G., "Designing Institutions for Monetary Stability," CRCS, (39) December 1993.
16. Svensson, L., "Optimal Inflation Contracts, 'Conservative' Central banks, and Linear Inflation Contracts," AER, March 1997.
17. Muscatelli, A., "Optimal Inflation Contracts and Inflation Targets under Uncertain Central Bank Preferences: Accountability Through Independence?" EJ, March 1998.
18. Beetsma, R., and Jensen, H., "Inflation Targets and Contracts with Uncertain Central Bank Preferences," JMCB, (Part 1) August 1998.
19. Chortareas, G., and Miller, S., "Monetary Policy Delegation, Contract Costs, and Contract Targets," manuscript, University of Connecticut, January 2000.
20. Chortareas, G., and Miller, S., "Optimal Central Bank Contracts and Common Agency," manuscript, University of Connecticut, January 2000.
21. Chortareas, G., and Miller, S., "Central Bank Contracts with 'Selfish' and 'Benevolent' Central Bankers," manuscript, University of Connecticut, February 2000.

## **VI. Empirical Evidence on Money Demand**

### **A. Long-Run and Short-Run Money Demand**

### **B. Money Demand Instability**

### **C. Money Demand as a Buffer Stock**

#### **Readings:**

1. Laidler, D., Chapters 1-12.
2. McCallum, B., and Goodfriend, M., "Theoretical Analysis of the Demand for Money," FRBR Economic Review, January/February 1988.
3. Friedman, M., "The Demand for Money -- Some Theoretical and Empirical Results," JPE, June 1959.
4. Laidler, D., "Some Evidence on the Demand for Money," JPE, February 1966.

5. Meltzer, A., "The Demand for Money: The Evidence from the Time Series," IPE, June 1963.
6. Chow, G., "On the Long-run and Short-Run Demand for Money," IPE, April 1966.
7. Goldfeld, S., "The Demand for Money Revisited," BPEA, 3 1973.
8. Goldfeld, S., "The Case of the Missing Money," BPEA, 3 1976.
9. Garcia, G. and Pak, S., "Some Clues in the Case of the Missing Money," AER, May 1979.
10. Hafer, R., and Hein, S., "Evidence on the Temporal Stability of the Demand for Money Relationship in the United States," FRBStL Review, December 1979.
11. Judd, J., and Scadding, J., "The Search for a Stable Money Demand Function: A Survey of the Post-1973 Literature," JEL, September 1982.
12. Miller, S., "Financial Innovation, Depository-Institution Deregulation, and the Demand for Money," IMACRO, Summer 1986.
13. Miller, S., "Money Demand Instability: Has It Ended?" EL, 30 1989.
14. Miller, S., "Disequilibrium Macroeconomics, Money as a Buffer Stock, and the Estimation of Money Demand," IMACRO, Fall 1990.
15. Miller, S., "Monetary Dynamics: An Application of Cointegration and Error-Correction Modeling," IMCB, May 1991.
16. Miyao, R., "Does a Cointegrating Relation Really Exist in the United States," IMCB, Aug. 1996.
17. Hoffman, D., Rasche, R., and Tieslan, M., "The Stability of Long-Run Money Demand in Five Industrial Countries," IME, April 1995.
18. Katsimbris, G., and Miller, S., "Velocity Instability: Directly An Interest-Rate Driven Phenomenon," QREF, Winter 1993.
19. Friedman, B., and Kuttner, K., "Money, Income, Prices and Interest Rates," BPEA, (1) 1996.

## VII. Special Topics in Monetary Theory

- A. Financially Repressed Developing Countries
- B. Inflation Uncertainty
- C. Banks as Firms

### Readings:

1. McKinnon, R., Money and Capital in Economic Development, Brookings, 1973.
2. Shaw, E., Financial Deepening in Economic Development, Oxford, 1973.
3. Fry, M., "Models of Financially Repressed Developing Economies," World Development, 10 1982.
4. Fry, M., Money, Interest and Banking in Economic Development.
5. Karapatakis, A., Financial Liberalization and Inflation in a Small Open Financially Repressed Economy: Theory and Evidence from Cyprus, Ph.D. Dissertation, UConn, 1992.
6. Okun, A., "The Mirage of Steady Inflation," BPEA, 1971.
7. Gordon, R., "Steady Anticipated Inflation: Mirage or Oasis?" BPEA, 1971.
8. Logue, D., and Willett, T., "A Note on the Relation Between the Rate and Variability of Inflation," Economica, May 1976.
9. Katsimbris, G., and Miller, S., "The Relation Between the Rate and Variability of Inflation: Further Comments," Kyklos (3) 1982.

10. Evans, M., and Wachtel P., "Inflation Regimes and the Sources of Inflation Uncertainty." JMCB, August 1993, Part 2.
11. Clark, J., "Economies of Scale and Scope at Depository Financial Institutions: A Review of The Literature," FRBK Economic Review, September/October 1988.
12. Berger, A., Hunter, W., and Timme, S., "The Efficiency of Financial Institutions: A Review and Preview of Research Past, Present, and Future," JB, April 1993.
13. Noulas, A., Ray, S., and Miller, S., "Returns to Scale and Input Substitution for Large U.S. Banks," JMCB, February 1990.
14. Noulas, A., Miller, S., and Ray, S., "Economies and Diseconomies of Scope in Large-Sized U.S. Banks," JFSR, September 1993.
15. Kaparakis, E., Miller, S., and Noulas, A., "Short-run Cost Inefficiency of Commercial Banks: A Flexible Stochastic Frontier Approach," JMCB, November 1994.
16. Miller, S., and Noulas, A., "The Technical Efficiency of Large Bank Production," JB, April 1996.

**List of Abbreviations:**

<u>AER</u>	--	American Economic Review
<u>BPEA</u>	--	Brookings Papers on Economic Activity
<u>CRCS</u>	--	Carnegie-Rochester Conference Series on Public Policy
<u>Econ</u>	--	Econometrica
<u>EEJ</u>	--	Eastern Economics Journal
<u>EER</u>	--	European Economic Review
<u>EI</u>	--	Economic Inquiry
<u>EJ</u>	--	Economic Journal
<u>EL</u>	--	Economics Letters
FRBB	--	Federal Reserve Bank of Boston
FRBC	--	Federal Reserve Bank of Cleveland
FRBK	--	Federal Reserve Bank of Kansas City
FRBM	--	Federal Reserve Bank of Minneapolis
FRBNY	--	Federal Reserve Bank of New York
FRBR	--	Federal Reserve Bank of Richmond
FRBStL	--	Federal Reserve Bank of St. Louis
FRBSF	--	Federal Reserve Bank of San Francisco
<u>JB</u>	--	Journal of Banking and Finance
<u>JEL</u>	--	Journal of Economic Literature
<u>JEP</u>	--	Journal of Economic Perspectives
<u>JET</u>	--	Journal of Economic Theory
<u>JFSR</u>	--	Journal of Financial Services Research
<u>JMACRO</u>	--	Journal of Macroeconomics
<u>JMCB</u>	--	Journal of Money, Credit and Banking
<u>JME</u>	--	Journal of Monetary Economics
<u>JPM</u>	--	Journal of Policy Modeling
<u>JPE</u>	--	Journal of Political Economy
<u>QJE</u>	--	Quarterly Journal of Economics
<u>QREF</u>	--	Quarterly Review of Economics and Finance
<u>SJE</u>	--	Swedish Journal of Economics
<u>SSQ</u>	--	Social Science Quarterly
<u>WEJ</u>	--	Western Economic Journal