

Course Objective:

This course goes into more depth in the analysis of monetary theory and policy introduced in the basic course of macroeconomics. The main objective of the course is to allow students to understand the behavior of central banks and the effects of monetary policy on the economy. We start by discussing the importance of banks in the economy. The Diamond-Dybvig model is used to illustrate the importance of the maturity transformation role of the financial intermediaries as well as the importance of deposit insurance. Next, we define money. The transaction role of money is explained using the Kiyotaki-Wright model. After that we discuss the conduct of monetary policy, describe the money supply process and the tools of monetary policy of central banks. We then study the theory and empirical evidence related to the effects of monetary policy in the economy and its transmission mechanisms. We look in depth to the process through which the central bank controls inflation and analyze the importance of central bank independence. If time permits, we will discuss further topics, or in more detail others: optimal monetary policy, the relationship between inflation and inequality, the connection between fiscal and monetary policy, and the time-inconsistency of monetary policy.

Course Content:

1. Financial intermediation

- Transform assets
- Bank-run
- Deposit insurance

Diamond, D. and Dybvig, P., 1983, "Bank runs, deposit insurance, and liquidity", *Journal of Political Economy*, 91 (3): 401–419

Tirole, J., *The Theory of Corporate Finance*, Princeton University Press, 2010.

Adão, B., and T. Temzelides, 1998, Sequential Equilibrium and Competition in a Diamond-Dybvig Banking Model, *Review of Economic Dynamics*, 1, 859-877

2. What is money?

- The functions of money
- The types of money
- The evolution of money
- The model of Kiyotaki-Wright

Mishkin, *The Economics of Money, Banking and Financial Markets*, Addison Wesley, 10th edition, Chapter 3

Kiyotaki and Wright, 1993, "A Search-Theoretic Approach to Monetary Economics," *American Economic Review* 83 (1), section I

3. The conduct of monetary policy

- The money supply process
- \* The deposit multiplier
- \* The determinants of money supply
- Central banking and tools of monetary policy
- \* Tools of monetary policy

Mishkin, Chapters 14, 15 and 16

ECB, "The Monetary Policy of the ECB", 2011

ECB, "The ECB, The Eurosystem, The European System of Central Banks", 2011

ECB, "The Implementation of Monetary Policy in the Euro Area", 2011

#### 4. The effects of monetary policy on the economy

- Empirical evidence on money and economic activity
- The transmission mechanisms of monetary policy
- Monetary policy, output and inflation in the short run, Mishkin, Chapter 26

G. McCandless and W. Weber, "Some Monetary Facts," FRBN *Quarterly Review* 19, 2005

G. Mankiw, *Macroeconomics*, 7th edition, Chapter 13 and 14

Jordi Gali, *Monetary Policy, Inflation, and the Business Cycle*, Princeton University Press, 2008, Chapters 1, 2 and 3

#### 5. The design of monetary policy

- Goals, strategies and tactics of monetary policy
- Inflation targeting
- Taylor interest rate rules
- Time inconsistency of monetary policy and inflationary bias
- Central bank independence and credibility of monetary policy
- Optimal response to shocks and stabilization bias
- Discretion and commitment in the conduct of monetary policy
- Inflation targeting in the PC-MPR model

Adão, B., 2019, "Why is price stability a key goal of central banks?", Banco de Portugal Economic Studies, Volume V

G. Mankiw, *Macroeconomics*, 7th edition, Chapter 15

C. Walsh, "The Science (and Art) of Monetary Policy", FRBN Economic Letter, 2001

L. Svensson, "Inflation Targeting," New Palgrave Dictionary of Economics, 2nd ed.

A. Orphanides, "Taylor Rules," New Palgrave Dictionary of Economics, 2nd ed.

S. Potter, "The Failure to Forecast the Great Recession", *Liberty Street Economics*, November 25<sup>th</sup>, 2011

C. Walsh, 2002, "Teaching Inflation Targeting: An Analysis for Intermediate Macro", *Journal of Economic Education*

Mishkin, Chapter 17

#### 6. Financial and debt crises, monetary policy and unconventional monetary policy tools

- 2007-2009 financial crisis: causes and consequences
- Monetary policy during the financial crisis
- \* Monetary policy and the zero bound
- \* Unconventional monetary policy measures during the crisis

- The sovereign debt crisis in Europe and monetary policy

S. Cecchetti, 2009, "Crisis and Responses: The Federal Reserve in the Early Stages of the Financial Crisis", *Journal of Economic Perspectives*, 23(1)

P. Lane, 2012, "The European Sovereign Debt Crisis", *Journal of Economic Perspectives*, 26(3)

F. Mishkin, "Monetary Policy Strategy: Lessons from the Crisis"

G. Rudebusch, 2009, "The Fed's Monetary Policy Response to the Current Crisis", *FRBSF Economic Letter*

U. Soderstrom and A. Westermarck, 2009, "Monetary Policy When the Interest Rate is Zero", *Riksbank Economic Review*

J. Taylor, 2010, "Getting Back on Track: Macroeconomic Policy Lessons from the Financial Crisis", *FRBSL Review*

J. C. Trichet, 2009, "The ECB enhanced credit support", Keynote address at the University of Munich

J. M. Gonzales-Paramo, 2011, "The ECB monetary policy during the crisis", Closing speech at the tenth Economic Policy Conference, Malaga

M. Draghi, 2012, "The monetary policy of the ECB and its transmission in the euro area", Speech at Università Bocconi, Opening of the academic year 2012-2013, Milano

#### 7. Controlling Inflation

- Determinacy
- Effectiveness
- Deviations in 2021-23

Laura Castillo-Martinez and Ricardo Reis, 2023, How do central banks control inflation? A guide for the perplexed, mimeo

## 8. Fiscal Support and Central Bank Independence

- The Fiscal Theory of the Price Level
- Fiscal interactions and the FTPL
- Quantitative easing

## 9. Monetary policy in the long run

- The optimum quantity of money
- A monetary model with cash and credit goods
- The Friedman rule.

Correia, I. and P. Teles, 1996, Is the Friedman Rule optimal when money is an intermediate good?, *Journal of Monetary Economics*, 38

Ljungqvist and Sargent, *Recursive Macroeconomic Theory*, MIT Press, 2000. Cap 17.

Chari, V. V., and Patrick J. Kehoe, Optimal Fiscal and Monetary Policy, 1999, *Handbook of Macroeconomics*, Vol. 1C, ed. John B. Taylor and Michael Woodford, Elsevier Science.

## 10. Equity and efficiency

- Redistributive effects of inflation
- Regressivity of inflation

Adão, B. and I. Correia, 2015, Inequality and Policy Changes: The Case of a Decline in Inflation, *Mimeo*

Atkin, Faber, Fally, and Gonzalez-Navarro, 2024, "Measuring Welfare and Inequality with Incomplete Price Information," *Quarterly Journal of Economics*, Vol. 139 (1), 419–475

## 11. Monetary and fiscal policy: fiscal devaluation

- Devaluation of a currency in a Monetary Union

Adão, B., I. Correia and P. Teles, 2009, On the Relevance of Exchange Rate Regimes for Stabilization Policy, *Journal of Economic Theory*, 144, 4, 2009, p. 1468-1488

### Additional readings:

Adão, B. and A. Lopez, 2023, "Risk Reallocation under Central Bank's Large-Scale Asset Purchases", *Banco de Portugal Economic Studies*, Vol. IX, No. 3

Adão, B. and A. Silva, 2021, "Government Financing, Inflation, and the Financial Sector", *Economic Theory*, Vol. 71, p. 1357-1396

Adão, B. and A. Silva, 2020, "The Effect of Firm Cash Holdings on Monetary Policy", *European Economic Review*, Volume 128

Adão, B. and A. Silva, 2019, "Real Transfers and the Friedman Rule", *Economic Theory*, Vol. 67

Adão, B., I. Correia and P. Teles, 2014, "Short and Long Interest Rate Targets", *Journal of Monetary Economics*, Vol. 66, p. 55-107

Adão, B. and I. Correia, 2013, "Labor Immobility and the Transmission Mechanism of Monetary Policy in a Monetary Union", *European Economic Review*, Vol. 63, p. 28-48

Adão, B., I. Correia and P. Teles, 2011, "Unique Monetary Equilibria with Interest Rate Rules", *Review of Economic Dynamics*, Vol. 14, Issue 3, p. 432–442

Adão, B., I. Correia and P. Teles, 2010, "Wage and Price Rigidity in a Monetary Union", *Open Economies Review*, 21, 1, p.109-126

Adão, B., 2010, A Model of a Small Open Economy Integrated in a Monetary Union, *Portuguese Economic Journal*, vol. 9, p. 195-209

Adão, B., I. Correia and P. Teles, 2004, "The Monetary Transmission Mechanism: Is It Relevant for Policy?", *Journal of the European Economic Association*, 2, (2-3), p. 310-319.

Adão, B., I. Correia and P. Teles, 2003, "Gaps and Triangles", *Review of Economic Studies*, October, Vol.70 (4), pag. 699-713.

Atkinson, A. B., and Stiglitz, J. E., 1972, "The Structure of Indirect Taxation and Economic Efficiency, " *Journal of Public Economics* 1, 97-119.

Benhabib, J., Schmitt-Grohe, S., Uribe, M., 2001. "The Perils of Taylor Rules," *Journal of Economic Theory* 96, 40-69.

Brito, J. M. B., and P. Teles, Simple Guidelines for Interest Rate Policy, *Banco de Portugal Economic Bulletin*, Spring 2005.

Calvo, G., 1988, Servicing the Public Debt: The Role of Expectations, *American Economic Review*, Vol. 78, No. 4, pp. 647-661

Correia, I., E. Fahri, J. P. Nicolini and P. Teles, 2013, Unconventional Fiscal Policy at the Zero Bound, *American Economic Review*, 103, pp. 1172-1211.

Correia, I., J. P. Nicolini and P. Teles, 2008, Optimal Fiscal and Monetary Policy: Equivalence Results, *Journal of Political Economy*, 116 (1), p. 141-170

Correia, I., and P. Teles, Principles of Optimal Stabilization Policy, *Banco de Portugal Economic Bulletin*, Summer 2008.

Diamond, Peter A., and James A. Mirrlees. 1971a. "Optimal Taxation and Public Production I: Production Efficiency." *American Economic Review* 61 (1): 8--27.

Diamond, Peter A., and James A. Mirrlees. 1971b. "Optimal Taxation and Public Production II: Tax Rules." *American Economic Review* 61 (3): 261-78.

Eggertsson, G., Woodford, M., 2003. "The Zero Bound on Interest Rates and Optimal Monetary Policy," *Brookings Papers on Economic Activity* 1, 139-211.

Friedman, Milton, "The Optimum Quantity of Money" In *The Optimum Quantity of Money and other Essays* edited by M. Friedman, pp. 1-50, Aldine, Chicago, IL., 1969.

Krugman, Paul R. 1998. "It's Baaack: Japan's Slump and the Return of the Liquidity Trap." *Brookings Papers on Economic Activity* 29 (2): 137-206.

Lucas, Robert E., Jr. and Nancy L. Stokey. 1983. "Optimal Fiscal and Monetary Policy in an Economy without Capital." *Journal of Monetary Economics* 12 (1): 55-93.

McCallum, B., 1981. "Price Level Determinacy with an Interest Rate Policy Rule and Rational Expectations," *Journal of Monetary Economics* 8, 319-329.

Sargent, T. J., Wallace, N., 1975. "Rational Expectations, the Optimal Monetary Instrument, and the Optimal Money Supply Rule," *Journal of Political Economy* 83, 241-254.

Woodford, M., 2003. *Interest and Prices*, Princeton University Press.

Suggestion:

Have the first class starting at 18:10 and ending at 19:30. After a 15-minute break, the second class starts, at 19:45, and ends at 21:05.

Grading:

A written partial exam (35%) and a general exam (65%) at the end of the course