

Monetary Economics

Course Syllabus

Central European University

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Grading

Course attendance is mandatory, and good attendance will be taken into account for course grades on the margin. Homework sets will count for 40% of the grade with the exam counting for 60%. Homework will be graded as satisfactory (check), unsatisfactory (check minus), and excellent (check plus).

Course Reading Material

The main textbook is the

Max Gillman, 2010, *Modern Macroeconomics*, draft Chapter excerpts, Forthcoming, Pearson Education, London.

Max Gillman, 2009, *Inflation Theory in Economics: Welfare, Velocity, Growth and Business Cycles*; International Series in Money and Banking, Routledge, London.

The tertiary draft text is

Max Gillman and Michal Kejak, *Monetary Economics: A General Equilibrium Banking Approach*, draft Chapter fragments, forthcoming, Palgrave, London.

Outline

A. Risk, Banking, Asset Pricing Section 1. Uncertainty, Complete and Incomplete Markets

1 Complete Versus Incomplete Markets

- 1.1 Focus on People: Arrow Debreu
- 1.2 Two State Analysis in General Equilibrium
- 1.3 General Production Technology
- 1.4 Linear Production Technology
- 1.5 Representative Agent Problem
- 1.6 Complete Consumption Smoothing
- 1.7 Example 1: Log-utility and Linear Production.
- 1.8 Calibration with $A_F=1$
- 1.9 Consumption Tilting with $A_F < 1$

2 Consumer and Firm Decentralized Problems

- 2.1 Consumer problem
- 2.2 Firm Problem
- 2.3 Market Clearing Equilibrium

3 Applications: Unemployment, Health Insurance, Sovereign Risk,

4 Spanning, Options and Derivatives

Section 2 Banking and Aggregate Risk

5 The Financial Intermediation Approach

6 Savings-Investment Intermediation

6.1 Consumer Problem

6.2 Goods Producer Problem

6.3 Bank Maximization Problem

6.4 Linear Technology Example

7 Banking Across States of Nature

7.1 General Equilibrium Banking Problem of Insurance

7.2 Log-utility Example

7.3 Consumer Problem of Buying Bank-Issued Insurance

7.4 Bank Problem of Supply Insurance

7.5 Market Clearing

7.6 Examples

7.6.1 Equal Probabilities of States

7.6.2 Good State More Probable

7.6.3 Rare Bad State

7.7 Applications:

8 Aggregate Risk: Falling Bank Productivity in the Bad State

9 Crashes of 1929 and 2008

10 Policy: Bank Insurance

10.1 Deposit Insurance with Risk-Based Premiums.

10.2 Policy for Global Bank Failure, Aggregate Risk and Moral Hazard

10.3 International Bank Policy Appraisal: Using Analysis

10.4 International Bank Reform as Primary Policy Tool

10.4.1 Eastern Europe after 1989

10.4.2 Japan after 1990

Section 3 Asset Prices and Finance

11 Modeling the Return on Bonds

11.1 Extended Baseline Dynamic Model

11.2 New Equilibrium Conditions from Bonds

11.3 Alternative Bond Pricing

12 Decentralization of the Capital Asset Market

12.1 The Equity Premium

12.2 A Model of Asset Prices under Certainty

12.2.1 Consumer Problem

12.2.2 Goods Producer Problem

13 Under Uncertainty

13.1 Asset Pricing

14 Asset Pricing Applications

14.1 Price Earnings Ratios and the Business Cycle

14.2 Wars and Price-Earnings

14.3 News, Asset Prices and the Real Economy

14.4 Stock Bubbles, Tranversality and Behavioural Finance:

14.5 Covariance and the Finance Beta

14.6 Efficient Markets

14.7 Focus on Lucas and Fama

15 Deriving the Equity Premium

16 Bank Crises and the Equity Premium

B Fiscal and Monetary Policy

Section 4 Ricardian Equivalence

- 17 Government Budget and Wealth Constraints**
 - 17.1 Budget Constraints
 - 17.2 Wealth Constraint
 - 17.3 Ricardian Equivalence and the Wealth Constraint
- 18 BGP Equilibrium Government Spending**
 - 18.1 Tax Component
 - 18.2 Government Bonds Component
 - 18.3 Money Printing Component
- 19 Impossibility Theorem of Non-Ricardian Equivalence**
 - 19.1 Application: EU Debt Limits and the Transversality Condition on Debt
 - 19.2 Periods of Local Non-Ricardian Equivalence
- 20 Optimal Public Finance**
 - 20.1 Government Spending as a constant fraction of Output
 - 20.2 First Best Policy
 - 20.3 Second-Best Tax Policy
- 21 Application: International Flat Tax Reform Movement**
- 22 Spending: Social Insurance and Public Capital**

Section 5 Monetary Theory and Policy

23 The Fisher Equation: Linking Nominal and Real

23.1 The Separation of Real from Nominal Factors

23.2 The Nominal Interest Rate and the Fisher Equation

23.3 Deriving the Fisher Equation

23.4 Understanding the Fisher Equation

24 Unexpected Inflation and the Phillips Curve

24.1 Interpreting the Phillips Curve Relation

25 Money supply, Inflation and Government Expenditure

25.1 Money Supply Growth and Government Spending

25.2 Money Supply and the Inflation Rate

25.3 Zero Growth Inflation Rate Determination

25.4 The Inflation Tax

25.5 Inflation and Growth

26 Inflation Tax Dynamics and Hyperinflation

26.1 Inflation Dynamics

26.2 Increase in Government Spending and Money Supply Growth Rate

26.3 Hyperinflation in Europe and across the World

27 Application: Inflation, Stagflation, and Oil Prices

28 Supply-Side Shocks, Monopoly Mark-ups, and No Money

29 Inflation, Unemployment and Growth

29.1 The Monetary Economy

29.2 The Inflation Tax Defined Mathematically

29.3 The Negative Effect of Inflation on Growth

29.4 Stagflation and De-Stagflation Periods

30 Money, Banking, and Velocity

30.1 Velocity Historical Experience

30.2 Banking Crises and Velocity

31 Money Demand from Banking

32 Monetary Policy

32.1 Inflation Targeting

32.2 A Focus on Milton Friedman

32.3 Money Supply Rules for Inflation Targeting

32.4 Keynes 1923 and McCallum 1990

32.5 Interest Rate Rules in Practice: Taylor Rule

32.6 Taylor Rule: Fisher Plus Intertemporal Substitution

Part I

C Growth Theory

Section 6 Endogenous Growth

- 33 Who Made it Happen: Human Capital Theory**
- 34 Human Capital Investment**
 - 34.1 Relation to Exogenous Growth
 - 34.2 Second Sector and Endogenous Growth
 - 34.3 Augmentation of Time
- 35 Growth with Human and Physical Capital**
- 36 AS-AD with Human Capital**
 - 36.1 Aggregate Demand AD
 - 36.2 Aggregate Supply AS
 - 36.3 Example Calibration
 - 36.4 Example Alternative Calibration $\gamma = 0.667$.
 - 36.5 Increase in Goods Sector Productivity
 - 36.6 Increase in Human Capital Sector Productivity
 - 36.7 Equalization of Capital Rates of Return
 - 36.8 Ah Endogenous Growth: Human Capital Only
 - 36.9 Example 1. Log-utility and Linear Goods and Human Capital Production Functions
 - 36.10 Full Solution of Human Capital Economy
 - 36.11 Ak Economy
 - 36.12 Comparison of Ah and Ak Economies
- 37 Growth Theory Empirical Testing**
- 38 Capacity Utilization Rates**
 - 38.1 Allowing Leisure Use to Decrease Human Capital Depreciation

39 Tax Policy and Growth

39.1 Capital Tax

39.2 Labor Tax

39.3 Consumption Tax: VAT

39.4 The Financial Intermediation of Tax Avoidance

39.5 Inflation Tax

D Inflation and Growth