B r i e f  T a b l e  o f  C o n t e n t s

Chapter 1. Introduction

Part I. CAPITAL ACCUMULATION AND ECONOMIC GROWTH

Chapter 2. Neoclassical Growth Models
Chapter 3. Endogenous Growth Models
Chapter 4. Some Other Growth Models

Part II. NEOCLASSICAL MODELING

Chapter 5. Consumption
Chapter 6. Investment
Chapter 7. Government Expenditure and Fiscal Policy
Chapter 8. The Current Account

Part III. MONEY, GROWTH, AND INFLATION

Chapter 9. Demand for Money
Chapter 10. Money and Growth
Chapter 11. Inflationary Finance

Part IV. BUSINESS CYCLES

Chapter 12. Standard Keynesian Theory
Chapter 13. Rational Expectations
Chapter 14. Real Business Cycles
Chapter 15. A New Keynesian Model
Chapter 16. Unemployment

Part V. STABILIZATION POLICY UNDER UNCERTAINTY

Chapter 17. Keynesians and Monetarists
Chapter 18. The Importance of Expectations
Chapter 19. Dynamic Inconsistency
Chapter 20. Some Other Useful Models

APPENDICES

Appendix 1. Stability of Equilibrium
Appendix 2. Dynamic Optimization
# Table of Contents

1. INTRODUCTION  
   1.1. A Two-Period Problem  1-1  
   1.2. An Infinite Horizon Problem  1-7  
   Readings  1-10  

Part I. CAPITAL ACCUMULATION AND ECONOMIC GROWTH  

2. NEOCLASSICAL GROWTH MODELS  
   2.1. Some Stylized Facts About Growth  2-1  
   2.2. The Solow Model  2-2  
      2.2.1. Comparative Statics  2-6  
      2.2.2. The Golden Rule  2-8  
      2.2.3. The Model with Technological Growth  2-9  
   2.3. The Ramsey Model  2-10  
      2.3.1. The Centralized Economy  2-11  
      2.3.2. The Decentralized Economy  2-16  
   2.4. A Neoclassical Model with Exogenous Productivity Growth  2-18  
   Readings  2-21  

3. ENDOGENOUS GROWTH MODELS  
   3.1. The Rebelo Model  3-1  
   3.2. A Two-Period Model with Externalities  3-3  
      3.2.1. The Decentralized Solution  3-4  
      3.2.2. The Centralized Solution  3-5  
   3.3. Endogenous Technological Growth  3-8  
      3.3.1. The Market (Decentralized) Solution  3-9  
      3.3.2. The Centralized Solution  3-11  
   3.4. Human Capital and Growth  3-14  
      3.4.1. The Lucas Growth Model  3-15  
   Readings  3-20  

4. SOME OTHER GROWTH MODELS  
   4.1. Overlapping Generations  4-1  
      4.1.1. The Decentralized Economy  4-2  
      4.1.2. The Centralized Economy  4-5  
      4.1.3. Dynastic Concerns  4-7  
      4.1.4. Social Security  4-9  
   4.2. The Aghion-Howitt Model of Economic Growth  4-12  
   4.3. Poverty Traps and Stagnation  4-17  
      4.3.1. Multiple Steady States in the Solow Model  4-17  
      4.3.2. Threshold Effects  4-20  
      4.3.3. Stagnation at the Subsistence Level  4-20
Readings 4-24

Part II. NEOCLASSICAL MODELING

5. CONSUMPTION
   5.1. The Basic Model 5-1
   5.2. The Permanent Income Hypothesis 5-5
   5.3. Liquidity Constraints 5-9
   5.4. Precautionary Saving 5-10
   5.5. Durables and Nondurables 5-14
       5.5.1. Consumption of Durables 5-14
       5.5.2. Durables and Nondurables 5-15
   5.6. Habit Formation 5-17
   Readings 5-17

6. INVESTMENT
   6.1. The Basic Model 6-1
   6.2. Three Special Models 6-4
       6.2.1. The Neoclassical (Jorgenson) Model 6-4
       6.2.2. The Accelerator Model 6-5
       6.2.3. Tobin's q Model 6-5
   6.3. Investment Taxes, Subsidies, and Inflation 6-6
   6.4. Investment and Uncertainty 6-8
   Readings 6-8

7. FISCAL POLICY
   7.1. Taxes and Growth 7-1
       7.1.1. Lum-Sum Taxes 7-1
       7.1.2. Income Taxes 7-3
       7.1.3. Consumption Taxes 7-6
   7.2. Distortionary Taxes and Laffer Curves 7-6
       7.2.1. Distortionary Taxes on Capital 7-7
       7.2.2. Distortionary Taxes on Labor 7-9
   7.3. Tax Smoothing 7-11
   7.4. The Optimal Government Size 7-13
   Readings 7-16

8. THE CURRENT ACCOUNT
   8.1. A Simple Model of the Open Economy 8-1
   8.2. A Production Model of The Open Economy 8-6
   8.3. The Case of the Large Open Economy 8-11
   8.4. An Infinite Horizon Model 8-12
   Readings 8-16
Part III. MONEY, GROWTH, AND INFLATION

9. DEMAND FOR MONEY
   9.1. Money as a Store of Value 9-1
      9.1.2. Constant Money Growth 9-6
   9.2. Transactions Demand for Money 9-7
      9.2.1. The Baumol-Tobin Model 9-7
      9.2.2. The “Shopping” Model 9-8
   9.3. Precautionary Demand for Money 9-12
   Readings 9-13

10. MONEY AND GROWTH
    10.1. The Tobin Model 10-1
    10.2. The Sidrauski Model 10-5
    10.3. Superneutrality Revisited 10-8
      10.3.1. Money in the Production Function 10-8
      10.3.2. Leisure in the Utility Function 10-9
      10.3.3. Technological Growth 10-10
    10.4. A Cash-in-Advance Model and Interest-Rate Smoothing 10-12
      10.4.1. The Real Economy 10-12
      10.4.2. The Monetary Economy 10-13
    Readings 10-15

11. INFLATIONARY FINANCE
    11.1. Welfare Costs of Inflation 11-1
    11.2. Hyperinflations 11-4
      11.2.1. The Cagan Model 11-4
      11.2.2. Seignorage 11-6
      11.2.3. Seignorage and Hyperinflation 11-8
    11.3. Optimal Seignorage 11-11
      11.3.1. Seignorage as the Only Source of Revenue 11-11
      11.3.2. Income Tax and Seignorage 11-12
    Readings 11-13
Part IV. BUSINESS CYCLES

12. THE STANDARD KEYNESIAN MODEL
   12.1. Aggregate Demand  12-1
   12.3. The Friedman-Phelps Supply Function  12-7
   Readings  12-9

13. RATIONAL EXPECTATIONS
   13.1. The Muth Model  13-3
   13.2. The Sargent-Wallace Model of Inflation  13-5
   13.3. The Lucas Supply Function  13-7
   13.4. Some Business Cycle Implications  13-10
   Readings  13-11

14. REAL BUSINESS CYCLES
   14.1. A Stochastic Solow Model  14-1
   14.2. A Stochastic Ramsey Model  14-4
   14.3. A Multi-Sector Model  14-8
   Readings  14-15

15. A NEW KEYNESIAN MODEL
   15.1. A New Keynesian Phillips Curve  15-1
   15.2. A New Keynesian IS Curve  15-3
   15.3. Some Monetary Policy Implications  15-5
      15.3.1. No Built-In Inflationary Bias  15-6
      15.3.2. Built-In Inflationary Bias  15-9
   Readings  15-11

16. UNEMPLOYMENT
   16.1. Indivisible Labor Models  16-1
      16.1.1. A Simple Model  16-1
      16.1.2. The Model with a Union  16-4
   16.2. The Efficiency Wage Model  16-6
   16.3. The Persistence of Unemployment  16-8
      16.3.1. A Separation-Finding Model  16-8
      16.3.2. The Hysteresis Theory  16-10
   16.4. The “Insiders- Outsiders” Theory  16-13
   Readings  16-16
Part V. STABILIZATION POLICY UNDER UNCERTAINTY

17. KEYNESIANS AND MONETARISTS
   17.1. Uncertainty About the Effects of Policy Variables  17-1
       17.1.1 The Theil Model  17-2
       17.1.2. The Brainard Model  17-3
   17.2. Policy Errors and Lags  17-5
   17.3. Asymmetric Effects  17-9
   17.4. Optimal Targeting (The Poole Model)  17-11
       17.4.1. A Monetarist Central Bank  17-11
       17.4.2. A Keynesian Central Bank  17-13
       17.4.3. Comparison of the Keynesian and Monetarist Strategies  17-13
       17.4.4. A Combination Policy  17-16
   17.5. Fixed vs. Flexible Exchange Rates  17-16
       17.5.1. Flexible Exchange Rate  17-18
       17.5.2. Fixed Exchange Rate  17-18
       17.5.3. Comparison of Fixed and Flexible Regimes  17-19
Readings  17-21

18. THE IMPORTANCE OF EXPECTATIONS
   18.1. No Role for Expectations  18-1
   18.2. Adaptive Expectations  18-2
   18.3. Rational Expectations  18-3
   18.4. Keynesians vs Monetarists vs Rational Expectationists  18-4
       18.4.1. Keynesians and Monetarists Revisited  18-4
       18.4.2. Rational Expectations  18-6
   18.5. A Complete Rational Expectations Model  18-8
Readings  18-11

19. DYNAMIC INCONSISTENCY
   19.1. The General Problem  19-1
   19.2. Output and Inflation  19-4
       19.2.1. A Rule  19-4
       19.2.2. Cheating  19-5
       19.2.3. Discretion  19-6
   19.3. Reputation  19-8
   19.4. Conservative Central Bankers and Indexation  19-10
       19.4.1. Output Uncertainty and the Optimal Conservative  19-11
       19.4.2. Optimal Contracts for Central Bankers  19-14
       19.4.3. Inflation Uncertainty and Optimal Inflation Protection  19-15
   19.5. Macroeconomics and Politics  19-17
Readings  19-20
20. SOME USEFUL MODELS
20.1. Wage Indexation  20-1
  20.1.1. The Frictionless Equilibrium  20-1
  20.1.2. Fixed Nominal Wages  20-3
  20.1.3. Indexation  20-4
20.2. Monetary Unions and Dollarization  20-7
  20.2.1. A Simple Model  20-8
  20.2.2. A New Keynesian Model  20-10
20.3. A Unified Model of Business Cycles  20-14
  20.3.1. The Walrasian Economy  20-15
  20.3.2. Wage Contracts  20-18
20.4. The Barro Model of Fiscal Policy  20-22
  20.4.1. Exogenous Labor Supply  20-22
  20.4.2. Endogenous Labor Supply  20-27

Readings  20-29

Appendices

A1. STABILITY OF EQUILIBRIUM
  A1.1 Stability of Linear Systems  A1-1
  A1.2 Stability of Non-Linear Systems  A1-3

A2. DYNAMIC OPTIMIZATION
  A2.1 Lagrangeans and Hamiltonians: An Example  A2-1
  A2.2 Dynamic Optimization with Bellman Equations  A2-3