

Roger E. A. Farmer

Expectations,  
Employment  
and Prices

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*To Roxanne, my inspiration.*

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## PREFACE

I HAVE LONG BELIEVED that modern interpreters of Keynes missed the main point of *The General Theory*; high unemployment is an equilibrium phenomenon that can persist for a very long time if nothing is done by a government to correct the problem. This was the point of my 1984 paper, which argued that the natural rate hypothesis is false. In the intervening years, I have had time to refine this idea. This book is the culmination of my thought process.

I began thinking about a book on Keynesian economics, based on a search theory of the labor market, in 2003. I have had many conversations with friends and colleagues along the way and the question I hear again and again is, Why write a book? It has become the norm for serious economists to convey their ideas in articles. There is a benefit to this approach since publishing an idea in a journal subjects it to a process of peer review. But there is also a downside to publishing in refereed journals, particularly when the goal is as ambitious as the project that I am engaged in. Even the very best journals (perhaps particularly the very best journals) are biased toward publishing very good articles that contribute to what Thomas Kuhn, in his 1962 book *The Structure of Scientific Revolutions*, called “normal science.” A successful article in a top journal takes an established paradigm and solves a puzzle that researchers can identify as a valid question. I have a more ambitious goal: I want to overturn a way of thinking that has been established among macroeconomists for twenty years. The rejection of several different core assumptions at the same time poses a problem if one wants to publish



journal articles since the pieces stand or fall together and there is no space in a twenty-page article to explain why.

I have always found in writing research papers that no idea is ever complete, and the same is true of a book, but more so. As this project developed, I added new pieces and changed old ones. The project gained new urgency when the world economy began to disintegrate at an alarming rate in the fall of 2008. I decided at that point that it was important to publish the ideas in whatever form they were currently in and to worry about polishing them later. The theory I develop here has direct relevance to the world economic crisis and it suggests a new and potentially important solution to the problem of maintaining global stability.

*Expectations, Employment and Prices* is aimed at economists in academia and policy institutions, and the general reader will find it abstract. It is full of equations, theorems, definitions, and proofs that may be intimidating to the nonspecialist. For better or worse, that is the way the language of academic articles has developed. The benefit of abstraction is that by phrasing arguments in this way, one is able to lay bare the logic that underlies one's conclusions. But the ideas are not so difficult as to be beyond the grasp of the average reader. For that reason, I have written a second book on the same topic that translates my arguments into English. This second book, *How the Economy Works: Confidence, Crashes and Self-Fulfilling Prophecies*, will appear shortly after *Expectations*, and I hope it will influence the policy debate on the development of new institutions to prevent economic crises of the kind we are witnessing as I write this Preface in December 2008.

Many people have helped me to develop my ideas. I am grateful to my brother-in-law Ray Barrell and my late sister Mary K. Farmer for nurturing my early love of and interest in economics. I have benefited tremendously from interactions with colleagues and students: Andy Atkeson, Arnold Harberger, Amy Brown, Ariel Burstein, Anton Chermukhin, Hal Cole, Matthias Doepke, Corey Garriott, Gary Hansen, Christian Hellwig, Andrew Hollenhorst, Masanori Kashiwagi, Axel Leijonhufvud, Hanno Lustig, Lee Ohanian, Paulina Restrepo, Karl Shell, Pierre-Olivier Weill, and Mark Wright have all, directly or indirectly, influenced the final product. I have worked with many coauthors over the past twenty-five years. Jess Benhabib, Rosalind Bennett, Andreas Beyer, Jang Ting Guo, Jerome Henry, Amartya Lahiri, Massimiliano Marcellino, Kazuo Nishimura, Daniel Waggoner, Ralph Winter, Michael Woodford, and Tao Zha have all influenced my thinking in one way or another and indirectly contributed to the ideas in this book. Thank you all. Alain Venditti and

Carine Nourry of the University of Aix-Marseilles worked with me on a stochastic model that influenced Chapter 9. I am grateful for their hospitality during a visit to Marseilles in the summer of 2008. Riccardo DiCecio from the St. Louis Fed, Marco Guerrazzi of the University of Pisa, and Colin Rogers of the University of Adelaide gave me comments and corrections on an earlier draft, and Masanori Kashiwagi has read and criticized the entire manuscript. I thank all of them for helping me to weed out mistakes, although I am sure that some remain. I thank Martin Wolf of the Financial Times for providing me with an important platform over the past several months that enabled me to reach a larger audience to seriously consider my ideas. Thanks to Dave Cass and Karl Shell, who introduced me to sunspots, an idea that they published in 1983 in the *Journal of Political Economy*, and to Costas Azariadis, who introduced me to the idea of a self-fulfilling prophecy both through personal discussions and in his 1981 *Journal of Economic Theory* article. The early 1980s was a wonderful time to be at the University of Pennsylvania. I am grateful to the National Science Foundation, which has supported my research for many years with a series of grants that gave me the freedom to think independently and to develop new ideas. Most recently, I was awarded grant #SBR 0720839, which helped to support the research developed in this book.

I thank Terry Vaughn and the entire team at Oxford University Press for their dedication and assistance throughout this project. My greatest debt is to my wife, Roxanne, and my son, Leland, for their loving support and encouragement for many years.

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## CONTENTS

### **PART I The Theory of Unemployment**

- 1 What This Book Is About 3
  - 1.1 *The Nature of the Enquiry* 5
  - 1.2 *The Theory Summarized* 7
  - 1.3 *The Theory of Aggregate Supply* 8
  - 1.4 *The Theory of Aggregate Demand* 10
  - 1.5 *A Road Map to the Book* 11
- 2 The Basic Model 15
  - 2.1 *Components of the Theory* 16
    - 2.1.1 Relationship to Keynes 16
    - 2.1.2 Households 17
    - 2.1.3 Firms 18
    - 2.1.4 Search and the Labor Market 20
  - 2.2 *Equilibrium and the Social Planner* 22
    - 2.2.1 The Planning Problem 22
    - 2.2.2 Aggregate Demand and Supply 23
    - 2.2.3 Effective Demand and the Multiplier 26
  - 2.3 *A Formal Definition of Equilibrium* 29
  - 2.4 *Concluding Comments* 30
- 3 An Extension to Multiple Goods 33
  - 3.1 *The Structure of the Model* 34
    - 3.1.1 Households 34
    - 3.1.2 Firms 36
    - 3.1.3 Search 37

3.2	<i>Equilibrium and the Social Planner</i>	38
3.2.1	The Social Planner	38
3.2.2	Aggregate Demand and Supply	40
3.2.3	Keynesian Equilibrium	43
3.3	<i>Equilibrium and the Planning Optimum Compared</i>	44
3.4	<i>Concluding Comments</i>	47
4	A Model with Investment and Saving	49
4.1	<i>The Model Structure and the Planning Solution</i>	50
4.1.1	Households	50
4.1.2	Firms	52
4.1.3	Search	53
4.1.4	The Social Planner	54
4.2	<i>Investment and the Keynesian Equilibrium</i>	55
4.2.1	How to Close the Model	55
4.2.2	The Definition of Equilibrium	56
4.3	<i>Analyzing Equilibria</i>	58
4.3.1	Aggregate Demand and Supply	58
4.3.2	Fiscal Policy in a Keynesian Model	60
4.4	<i>Concluding Comments</i>	62
4.5	<i>Appendix</i>	63

## **PART II Using the Theory to Understand Data**

5	A New Way to Understand Business Cycle Facts	69
5.1	<i>What's Wrong with the HP Filter?</i>	70
5.2	<i>Measuring Data in Wage Units</i>	73
5.3	<i>Interpreting Wage Units</i>	75
5.4	<i>The Components of GDP</i>	76
5.5	<i>Concluding Comments</i>	80
6	The Great Depression: Telling the Keynesian Story in a New Way	81
6.1	<i>Developing the Model</i>	83
6.1.1	Preferences	83
6.1.2	Labor Supply and Consumption	84
6.1.3	Technology	85
6.2	<i>Aggregate Supply</i>	87
6.2.1	Aggregation Across Firms	87
6.2.2	Search and the Labor Market	89

6.2.3	Selecting an Equilibrium with Long-Term Expectations	89
6.3	<i>Equilibrium and the Planner's Problem</i>	90
6.3.1	The Social Planner	90
6.3.2	Demand-Constrained (Keynesian) Equilibrium	92
6.3.3	An Existence Proof	93
6.3.4	Efficiency of Equilibrium	94
6.4	<i>Using the Model to Understand Data</i>	95
6.4.1	Keynes and the Great Depression—Theory	95
6.4.2	Keynes and the Great Depression—Data	96
6.5	<i>The Recovery from the Depression</i>	98
6.5.1	Adding Government	98
6.5.2	Consumption in a Model with Government	99
6.6	<i>Equilibrium with Government</i>	100
6.6.1	Some Definitions	100
6.6.2	Demand-Constrained Equilibrium with Government	101
6.6.3	An Important Result	103
6.7	<i>Concluding Comments</i>	105
6.8	<i>Appendix</i>	106
7	<i>The Wartime Recovery: A Dynamic Model Where Fiscal Policy Matters</i>	109
7.1	<i>The Structure of the Model</i>	110
7.1.1	Household Structure	110
7.1.2	The Asset Markets	112
7.1.3	Government Choices	113
7.1.4	The Household Problem	113
7.2	<i>The Aggregate Economy</i>	114
7.2.1	The Aggregate Consumption Function	114
7.2.2	Aggregate Equations of Motion	116
7.3	<i>Using the Model to Understand Data</i>	116
7.3.1	Steady-State Equilibria	117
7.3.2	Two Equations to Study Steady-State Equilibria	117

- 7.3.3 The Great Depression 118
- 7.3.4 The Wartime Recovery 119
- 7.3.5 A Quantitative Experiment 120
- 7.4 *Concluding Comments* 122
- 7.5 *Appendix* 123
- 8 The U.S. Economy from 1951 to 2000: Employment and GDP 127
  - 8.1 *Introduction* 127
  - 8.2 *The Impact of the Fed–Treasury Accord* 128
  - 8.3 *A Preview* 129
  - 8.4 *Unemployment and GDP* 132
  - 8.5 *Investment Is Not a Cause of Medium-Term Movements* 133
  - 8.6 *Other Possible Causes of Medium-Term Fluctuations* 135
  - 8.7 *Concluding Comments* 138

### **PART III The Theory of Prices**

- 9 Money and Uncertainty 143
  - 9.1 *The Structure of the Model* 143
    - 9.1.1 Money and Production 143
    - 9.1.2 Adding Uncertainty 145
    - 9.1.3 Households 146
    - 9.1.4 Government 147
    - 9.1.5 The Pricing Kernel and Asset Prices 148
  - 9.2 *The Complete Model* 149
  - 9.3 *Concluding Comments* 150
- 10 Money and Inflation Since 1951 151
  - 10.1 *A Complete Monetary Model* 152
  - 10.2 *Aggregate Supply and the Money Wage* 153
  - 10.3 *Theory and Data* 154
  - 10.4 *Modeling Monetary Policy* 159
    - 10.4.1 The Private Sector Equations Restated 159
    - 10.4.2 The Policy Rule 160
    - 10.4.3 A Linear Approximation 160
  - 10.5 *How Beliefs Influence the Unemployment Rate* 161
    - 10.5.1 The Steady State 162
    - 10.5.2 Active and Passive Monetary Policy 162

10.6	<i>Concluding Comments</i>	164
11	How to Fix the Economy	167
11.1	<i>Monetary Policy Cannot Hit Two Targets</i>	168
11.2	<i>Fiscal Policy Is Not the Most Effective Solution</i>	169
11.3	<i>What We Should Do Instead</i>	171
11.4	<i>A New Role for the Fed</i>	172
11.5	<i>Concluding Comments</i>	174
	Notes	177
	Bibliography	181
	Index	185



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## PART I

# THE THEORY OF UNEMPLOYMENT

**T**HE FIRST FOUR CHAPTERS of this book develop a theory of the macroeconomy that brings the central ideas of Keynesian economics up to date with modern macroeconomics. Chapter 1 presents an outline of the book. Chapters 2, 3, and 4 develop a model of the economy that explains why unregulated capitalist economies may deliver inefficient outcomes. Chapter 2 presents a basic model of the labor market, Chapter 3 extends this model to multiple goods, and Chapter 4 adds saving and investment.

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## CHAPTER 1 | What This Book Is About

*Those who cannot remember the past are condemned to repeat it.*

—George Santayana, *The Life of Reason* (1905)

**T**HIS BOOK IS ABOUT the business cycle and how to control it. I will explain why major recessions occur and how government policy can and should be used to maintain high and stable employment. The reasoning I will provide is inspired by Keynesian economics and is based on ideas from *The General Theory of Employment, Interest and Money* (1936). Importantly however, I go beyond the ideas in Keynes' book by providing a microfoundation to the concept that the equilibrium level of unemployment may be inefficient. I will argue that government can and should intervene in markets to maintain a high and stable level of employment. Some of the remedies I will propose are standard and part of the current arsenal of policies employed by the governments of all market economies. Some remedies are new and involve extensions of the institutions that were developed in the wake of the publication of *The General Theory*.

What is new in my assessment of standard remedies is a theory of individual behavior that explains why fiscal and monetary policies are appropriate and how they work. A byproduct of my extension of Keynesian models is an explanation of how inflation and unemployment