ECONOMIC STABILIZATION POLICY: METHODS IN OPTIMIZATION

BENJAMIN M. FRIEDMAN

Harvard University

With a Foreword by Professor H. Theil.





NORTH-HOLLAND PUBLISHING COMPANY
AMSTERDAM-OXFORD
AMERICAN ELSEVIER PUBLISHING COMPANY, INC.
NEW YORK

CONTENTS

Introduction to the	ie Serie	S	•			•	•	•		v
Foreword .	٠									ix
Preface .					•	•				xi
Note on Notation										xiii
CHAPTER 1. Introduc	ction									1
1. Background of the The Tinbergen-Tl	neil liter	ature	, The		ern op	otimiz:	ation	literat	ure,	2
2. Outline of the boo The two parallel m Chapters 9 and 1	ok's con nain thru	itents ists o	f the b		Chapto	ers 2–:	5, Cha	pters (6–8,	6
CHAPTER 2. The econ	nometrio	: mod	lel							11
1. Criteria for choos Basic properties: orientation, Degr nonlinearity.	numbe	r of	equat	ions a						11
2 The Wharton mod	lel			•		٠	•			14
General propertie market supply, L accounting, Incom	abor ma	arket	quan	tities,	Price	s and				
CHAPTER 3. Point lin	earizati	on								35
1. Linear models and The problem, A s			conor	nies				•	•	35
2. Deriving the poin The basic techniq Two examples. Ty	ue, For	ms of	nonli				Vharto	on mo	del,	37

xvi CONTENTS

3. Analysis of the linearized coefficients	. 49
Chapter 4. Subinterval linearization	. 61
1. Deriving the subinterval linearizations	. 61
2. Analysis of the subinterval linearizations	. 63
Chapter 5. The dynamic policy multipliers	. 85
 Solving for the dynamic multipliers	. 85 c
2. Dynamic multipliers for the Wharton model	t
3. Linear and nonlinear dynamic multipliers	. 126
4. Problems with the Wharton model dynamic multipliers Instability in the linearized model, Further problems.	. 136
Chapter 6. Quadratic optimization—The level I problem	. 147
1. A conceptual framework Classification of variables, The Tinbergen solution, Dynamic generalization of the economic system.	. 147 c
2. Quadratic optimization The quadratic criterion function, The Theil solution, First-period certainty equivalence, Treatment of vector s for historical analysis. Treatment of vector s for applied policy analysis.	
3. Relationship to other optimization methods	

	CONTENTS	xvi
1.	The piecewise quadratic optimization—The level II problem The piecewise quadratic criterion function	183 183
	Structure of the solution, The nonsingularity restriction, Convergence properties.	
Cı	HAPTER 8. Endogenous time horizon optimization—The level III problem	197
l.	The endogenous time horizon	197
2.	Solution of the level III problem	204
C1	HRPTER 9. Applications to economic stabilization policy	211
١.	The 1957–1958 policy interval	212
	The historical experience, The structure of the policy interval.	
2.	The organization of the exercises	223
	The basic set of exercises, The five basic patterns for real output and prices, Other variables in exercise set 1.	
3.	Optimal solutions for the basic set of exercises Exercise 1-A, Post-termination effects, Exercises 1-B, 1-C, 1-D and 1-E.	233
	Tax policy and the federal budget position	245
5.	Transfer payments and residential construction	259
j.	More flexible monetary policy	292

xviii CONTENTS

CHAPTER 10. Retrospective and prospective						309
1. Specific research questions						309
Questions based on optimization, Quest	ions ba	ised o	n line	arizati	on.	
2. Broader areas for research						312
The time dimension of economic policy, tainty.	The in	nplica	tions (of unc	er-	
Appendix A. List of Wharton model variable	symbo	ols .	•	٠	•	317
Appendix B. Linearized coefficient values for the Wharton model.						
Appendix C. Proof of piecewise quadratic convergence in the scalar case						
APPENDIX D. The TRIOPT algorithm .		•			•	341
APPENDIX E. Card input guide for TRIOPT	•				•	351
REFERENCES AND SELECTIVE BIBLIOGRAPHY		•			•	359
INDEV						360