

# **Disequilibrium foundations of equilibrium economics**

FRANKLIN M. FISHER

*Massachusetts Institute of Technology*

CAMBRIDGE UNIVERSITY PRESS

*Cambridge*

*London New York New Rochelle*

*Melbourne Sydney*

# Contents

---

Acknowledgments	<i>page</i> xi
Chapter 1. Introduction: Disequilibrium analysis and the theory of value	1
1.1 Introduction	1
1.2 The importance of disequilibrium analysis	3
1.3 An alternative possibility: Always-clearing markets	5
1.4 Why study the stability of general equilibrium?	7
1.5 Toward a satisfactory dynamic theory	9
1.6 Path-dependence, hysteresis, and comparative statics	14
PART I. METHODS AND PROBLEMS OF THE GENERAL EQUILIBRIUM STABILITY LITERATURE	
Chapter 2. The development of the stability literature	19
2.1 Introduction	19
2.2 Tâtonnement: Local stability	19
2.3 Tâtonnement: Global stability	24
2.4 Trading processes: Pure exchange	27
2.5 The Hahn Process	31
2.6 Firms (but no production) in the Hahn Process	36
2.7 Consumption and production out of equilibrium: Commodity dating, nonperformance, and the Present Action Postulate	41
2.8 Individual price adjustment	47
Chapter 3.* Hahn Process models: Formal treatment	51
3.1 Introduction	51

\* Contains technical material and may be omitted without loss of continuity.

viii	<b>Contents</b>	
3.2	Pure exchange and no money: Notation and model	52
3.3	The behavior of target utilities	55
3.4	Compactness	56
3.5	Global stability	58
3.6	Firms (but no production)	62
3.7	Households, money, and firm ownership	65
3.8	Walras' Law and equilibrium	66
3.9	The dynamics of the model: Money and trade	68
3.10	Target profits, target utilities, and quasi-stability	70
3.11	Compactness again	73
3.12	Global stability again	78
	<b>PART II. A MODEL OF DISEQUILIBRIUM WITH ARBITRAGING AGENTS</b>	
	<b>Chapter 4. Allowing disequilibrium awareness</b>	85
4.1	Toward a more sensible model	85
4.2	The appearance of new opportunities: No Favorable Surprise	86
4.3	The timing of optimal programs	94
4.4	The Dated Commodities problem and individual price adjustment	97
4.5	Nonperformance and bankruptcy	98
4.6	The nature of equilibrium and the role of money	100
	<b>Chapter 5. The theory of the individual agent</b>	102
5.1	Introduction	102
5.2	Money, bonds, and relative prices	103
5.3*	Instantaneous discount rates and topology	105
5.4	The arbitrating firm: Assumptions	109
5.5	The arbitrating firm: Optimal production and optimal arbitrage	112
5.6*	The arbitrating firm: Formal treatment	116
5.7	The arbitrating household: Assumptions	123
5.8	The arbitrating household: Results	126
5.9*	The arbitrating household: Formal treatment	129
	<b>Chapter 6. Transaction difficulties, individual price offers, and monopoly power</b>	138
6.1	Introduction	138
6.2	Smooth transaction costs	140
6.3*	Smooth transaction costs: Formal treatment	148
6.4	Transaction constraints and individual price offers	151
6.5*	Transaction constraints: Formal analysis	156
	<b>Chapter 7. Walras' Law and the properties of equilibrium</b>	158
7.1	Walras' Law	158

7.2*	Walras' Law: Formal treatment	159
7.3	Momentary personal equilibrium	160
7.4	Equilibrium: The behavior of prices	164
7.5	The equilibrium role of money	171
7.6*	Equilibrium: Formal statement	176
Chapter 8.	Dynamics and stability	179
8.1	Introduction	179
8.2	No Favorable Surprise	180
8.3	Individual price adjustment and orderly markets	188
8.4	Nonperformance and bankruptcy	191
8.5	Other rules of motion	195
8.6	The nature of stability	195
8.7*	Equations of motion	200
8.8*	Quasi-stability	202
8.9*	Boundedness	202
8.10*	Limiting assumptions	204
8.11*	The treatment of free goods and the indecomposability of equilibrium	207
8.12*	Proof of essential global stability	209
Chapter 9.	Concluding thoughts	212
Appendix:	Mathematics of stability	219
A.1	Processes and rest points	219
A.2	Global stability and quasi-stability	220
A.3	Lyapounov's Second Method	224
References		229
Index		233