

Contents

1	Introduction	1
	References	6
2	Balanced Growth in Decentralized Economies	7
2.1	Model Description	8
2.2	Planning Based on Profit Maximization	15
2.3	Payment Balances of Sectors	20
2.4	Counteracting Decreases in Profit	23
2.5	Personalized Prices for Consumers	26
2.6	Average Prices and Personalized Discounts	33
2.7	Generalized Price Formula	36
	References	40
3	Transition to Balanced Growth	41
3.1	Basic Algorithm for Transition to Balanced Growth	42
3.2	Dynamics of Dual Variables	51
3.3	Autonomous Estimates of the Expansion Rate	54
3.4	Demand-Based Planning	57
3.5	Forward and Current Planning	59
3.6	Unbalanced Supply of Resources	61
3.7	Agreeing on Estimates of the Expansion Rate	68
3.8	The Basic Transition Algorithm and the MIM Model	72
	References	78
4	The Finance of the Transition Phase	81
4.1	Transition to Balanced Growth Based on Financial Indicators	82
4.2	The Dynamics of Base Prices	86
4.3	The Asymptotic Behavior of Payment Balances	90
4.4	Payment Balances and Self-Financing	95
	References	98

- 5 Production Capacities in Decentralized Economies** 99
 - 5.1 The Modified Model 100
 - 5.2 Profit Maximization 105
 - 5.3 The Asymptotic Behavior of Physical Indicators 108
 - 5.4 Owners and Tenants 110
 - 5.5 A Model of Production that Captures Labor Resources 114
 - References 117
- 6 Models of Technological Progress in Decentralized Economies** 119
 - 6.1 The Dynamics of Technological Matrices 120
 - 6.2 The Effect of Technology Changes 124
 - 6.3 Technology Changes in Centralized Economies 131
 - 6.4 Investment Decision Making 134
 - 6.5 Radically New Technologies 137
 - References 139
- 7 Cyclical Growth in Decentralized Economies** 141
 - 7.1 A Planning Algorithm that Leads to Cyclical Dynamics 142
 - 7.2 Expansion Rate per Cycle 148
 - 7.3 The Trend of Indicators and Limit Points 153
 - 7.4 Limit Points and the von Neumann Ray 157
 - 7.5 Cyclicity and Dual Variables 161
 - 7.6 The Dynamics of Production Capacities and the Cyclicity
of Production 164
 - References 168
- 8 Final Consumption** 169
 - 8.1 A Model of Final Consumption 170
 - 8.2 Final Consumption and Production Hierarchies 175
 - References 178
- A Nonnegative Matrices** 181
 - References 189
- Index** 191



<http://www.springer.com/978-3-319-07916-5>

Balanced and Cyclical Growth in Models of
Decentralized Economy

Abramov, A.P.

2014, XII, 194 p., Softcover

ISBN: 978-3-319-07916-5