## **Contents**

1	Set	ting, A	im and Scope of the Study	1
2	Eas	stern G	erman Transition and Government Policy	5
	2.1	The	Challenges of the Transition Process	5
	2.2		Framework of Policy Objectives in the Context of	_
			sition and Structural Change	11
		2.2.1	Constitutional Framework	12
		2.2.2	Economic Foundation	13
		2.2.3	Social Objectives	15
		2.2.4	A Scheme of Policy Objectives: Guidelines, Targets and	
			Instruments	16
	2.3	Polic	y Instruments	17
		2.3.1	The Extent of Government Interventions in Eastern	
			Germany	17
		2.3.2		
			of Government Policy	21
	2.4	An O	verview over Possible Effects of Investment Subsidies	34
		2.4.1	Theoretical Considerations	35
		2.4.2	Some Empirical Evidence on Capital, Employment and	
			Productivity in Eastern German Industries	39
	2.5	Other	Strategic Variables in the Transition Process	44
		2.5.1	Wages and the Labour Market	45
		2.5.2	Consumptive Transfers and Compensations	50
	2.6	Brief	Summary of the Status Quo: A Tale of a Patient, a Therapy	
		and It	s Side Effects	57
3			the Impact of Investment Subsidies on Factor Demand	
	and	Produ	ction in the Eastern German Industrial Sector	59
	3.1	Prelin	ninaries	59
		3.1.1	The Impact of Subsidies: Methodology of Analysis	59
		3.1.2	The Impact of Subsidies: Survey of Empirical Studies	62

#### VIII Contents

	3.2	3.2 The Theoretical Model		69
			Factor Demand and Substitution	
			The Concept of the User Cost of Capital	70
		3.2.3	Modelling Output	79
			Summary: Substitution and Output Effects in a Cost	85
			Minimizing Model of Factor Demand	87
4	En	pirical	Implementation	89
	4.1	The I	Data Control of the C	89
	4.2 The Basic Empirical Model		Basic Empirical Model	93
	4.3			
			Panel Heterogeneity	98
			Unit Roots and Cointegration	100
			Dynamic Models and Small Sample Bias	103 110
		4.3.4	Summary: Estimation Method	110
	4.4		ation Results	117
		4.4.1	Effects of Investment Subsidies and Other Variables on Structural Change and Competitiveness	
		4.4.2	Effects of Investment Subsidies and Wages on	128
			Investment and Employment	131
		4.4.3	Effects of Investment Subsidies on Productivity and	151
			Growth	137
	4.5	Looki	ng beyond Factor Cost Relations: What the Model Reveals Efficiency	
	4.6		-	141
	1.0	Julili	ary and Critique of the Empirical Results	150
5	Con		Remarks and Implications for Economic Policy	152
	5.1	212 Substitution in Eastern German Transition Achieve its		
		Objectives?		152
	5.2		Follows for Economic Policy after 2004?	156
			Subsidization: Reducing Distortions	156
			Infrastructure: Closing Gaps	159
			Labour Market: Differentiating Wages	161
	5.3	What A	Are the Perspectives?	163

	Content	s IX
Appendix 1	The Derivation of the First-Order Conditions in a Two- Stage CES Model of Factor Demand	165
Appendix 2	The Derivation of the Elasticities of Substitution in a Two-Stage CES Function	167
Appendix 3	Definitions of the Wage and Salary Categories of Blue-Collar Workers and White-Collar Employees	170
Appendix 4	Panel Cointegration Statistics	171
Appendix 5	Tables	173
References		185
Index		204

## **List of Tables**

T.11 1.00	
Table 1: Structure of Transfers to Eastern Germany, 1991–1999	18
Table 2: Purpose of Transfers (Gross) to Eastern Germany, 1991–1999	21
Table 3: Sectoral Structure of Investment and Selected Subsidies to Eastern German Firms, 1990–2000	23
Table 4: Intensity of Subsidization in Eastern and Western Germany, 1991–1999	25
Table 5: Subsidies to Eastern German Firms, 1990-2000	25
Table 6: Investment Grant Means for Commercial Enterprises and for Business-Related Infrastructure, 1991–2000	27
Table 7: Selected Programmes of the German Federal Government to Support R&D and Innovation in Eastern German Firms, 1990–1998	29
Table 8: Selected Support Programmes (ERP and Government Banks) for Eastern German Firms, 1990–2000	31
Table 9: Conditions of Selected Subsidized Loans, 1991-2000	32
Table 10: Structure of Investment in the Manufacturing Sector in Eastern and Western Germany According to Industry Aggregates, 1991–1999	41
Table 11: Capital Stock in Eastern and Western German Manufacturing, 1999	41
Table 12: Shares in Employment in the Eastern German Manufacturing Sector by Industry Aggregates, 1991 and 1999	42
Table 13: Shares in Value Added (Constant Prices) in the Eastern German Manufacturing Sector by Industry Aggregates, 1991 and 1999	43
Table 14: Productivity and Unit Labour Costs in Eastern Germany, 1991–1999	47
Table 15: Persons Engaged (Domestic Concept) and Underemployment in Eastern Germany, 1991–2000	49
Table 16: Shares of Manufacturing and of the Non-Tradables Sector in Gross Value Added and Employment for Eastern and Western Germany, 1990–1998	56
	56

	List of Lables	ΧI
Table 17: Studies Analyzing the Effects of Subsidies on Ec Aggregates	onomic	67
Table 18: Factor Intensity of Manufacturing Industries in W Germany, 1994	/estern	99
Table 19: Results of F-Tests for Heterogeneous Intercepts		103
Table 20: Results of ADF Tests		106
Table 21: Likelihood-Ratio Statistics for Model Equations without Long-Run Relationship	with and	108
Table 22: Results of the Cointegration Tests		110
Table 23: Asymptotic Values for $\hat{\rho}$		112
Table 24: Estimation Results: Unskilled-Labour Demand		118
Table 25: Estimation Results: Skilled-Labour Demand		119
Table 26: Estimation Results: Output		120
Table 27: Substitution Effects, Output Effects, Total Effects ductivity Effects in Eastern German Capital-Intensive Indus		125
Table 28: Substitution Effects, Output Effects, Total Effects ductivity Effects in Eastern German Skilled-Labour-Intensive		126
Table 29: Substitution Effects, Output Effects, Total Effects Productivity Effects in Eastern German Labour-Intensive In		127
Table 30: Effects of Investment Subsidization on Output, 19	91–1998	129
Table 31: Effects of Investment Subsidization on Investment Employment, 1991–1998	t and	133
Table 32: Wage Increases and Consequent Job Reduction in Germany According to Labour and Industry Aggregates, 19		134
Table 33: Firms Lacking Specialists in Eastern Germany Ac Sectors, 1997	ecording to	136
Table 34: Industry-Specific Dummy Variables and Technica in Eastern German Manufacturing	al Inefficiency	145
Table 35: Determinants of Technical Efficiency in Eastern C Industries	German	148

#### XII List of Tables

Table A5.1: Structure of Employment in the Manufacturing Sector in the GDR and in the Federal Republic of Germany, 1989	173
<i>Table A5.2:</i> Structure of Production in Eastern German Manufacturing, 1991–1999	173
Table A5.3: Structure of Transfers to Eastern Germany According to a Calculation by Boss and Rosenschon, 1991–1996	174
Table A5.4: Investment in Eastern German Manufacturing, 1991–1999	175
Table A5.5: Share of Eastern Germany in Overall-German Manufacturing Employment, 1991 and 1999	176
Table A5.6: Relative Capital Intensity and Labour Productivity in Eastern German Manufacturing by Industries, 1999	177
Table A5.7: User Cost of Capital in Eastern German Industries Including Investment Subsidies, 1991–1998	178
Table A5.8: Reduction of User Cost of Capital due to Investment Subsidies, 1991–1998	179
Table A5.9: Shares of Eastern German Manufacturing Firms Making Profits or Losses, 1991–1998	180
Table A5.10: Unweighted Average of Factor Cost Shares in the Industry Aggregates	180
Table A5.11: Selected Critical Values for ADF Tests according to Levin and Lin	180
Table A5.12: Corrections for the Nickell Bias: Unskilled-Labour Demand	181
Table A5.13: Corrections for the Nickell Bias: Skilled-Labour Demand	182
Table A5.14: Corrections for the Nickell Bias: Output	183
Table A5.15: AES and "Own" Elasticities of Substitution in Eastern German Industries	184
Table A5.16: Firms Lacking Specialists in Eastern Germany According to Different Characteristics, 1997	184

# **List of Figures**

Figure 1: Industrial Production in Eastern Germany, 1989–1991	6
Figure 2: Growth Rates of Gross Value Added (National Accounts) in Eastern and Western German Manufacturing, 1992–1999	10
Figure 3: The Framework of Government Policy in Eastern German Transition: Guidelines, Targets and Instruments	16
Figure 4: Output and Substitution Effect of a Change in Relative Factor Prices	37
Figure 5: Capital Stock per Employee and Labour Productivity in Eastern German Manufacturing, 1991–1999	44
Figure 6: The Effect of Rising Wages on Labour and Capital	48
Figure 7: Changes of Relative Prices and Structural Change in the Eastern German Economy after Unification	52
Figure 8: GDP Deflator of Selected Tradables and Non-Tradables in Eastern and in Western Germany, 1991–1999	55
Figure 9: Methods of Analysis of Economic Policy Effects	60
Figure 10: Output per Capita in the Capital-Intensive Industries, 1991–1998	138
Figure 11: Output per Capita in the Skilled-Labour-Intensive Industries, 1991–1998	138
Figure 12: Output per Capita in the Labour-Intensive Industries, 1991–1998	139
Figure 13: Technical and Allocative Efficiency	142