## **Contents**

Ta	bles d	and Figures	i
Ac	knoi	vledgments	xii
	Inti	roduction	1
	RT ne Ec	I conomic Perspective on Multilingualism	9
1	Lar	nguage at Work: Identifying the Issue	11
	1.1	Enduring Concerns, Little-Known Processes	11
	1.2	The Economic Analysis of the Firm: A First Approach to the	
		Inclusion of Linguistic Diversity	17
2	On	the Linguistics of the Economy v. the Economics	
	of I	anguage	28
	2.1	A Tentative Mapping	28
	2.2	Bourdieu and His Heirs: A Glimpse at Some Sociolinguistic Perspectives	30
	2.3	Pragmatics-oriented Perspectives	34
	2.4	Ethnomethodology and Conversation Analysis	35
	2.5	Additional Perspectives on Language in the Economy	37
3	A G	Callery of Empirical Findings	39
	3.1	Descriptive Results	39
	3.2	Edging Closer to Economic Effects	45
	3.3	Different Paths to Estimation	48
	3.4	Drawing the Line: Absolute v. Contingent Multilingualism	52

	_
V1	Contents

4	Fore	eign Language Skills and Earnings	55
	4.1	Language Skills and the Creation of Value	55
	4.2	Defining Language for Labour Market Analysis	58
	4.3	The Changing Labour Market Value of Languages Over Time	59
	4.4	Factoring in Skills Levels	64
	4.5	The Value of Immigrants' Language Skills	69
	.RT I	II Language Skills, Foreign Language Use,	
		oduction	73
5	Lan	guage Use and the Production Process	75
	5.1	The Relevance of Language Use	75
	5.2	The Determinants of Language Use	78
	5.3	The Production Model Revisited	86
6	Fro	m Theory to Measurement	92
	6.1	On Modelling, Calibration and Data	92
	6.2	Data Collection: Dealing with Multi-faceted Labour	95
	6.3	Data Collection: Grouping Goods	100
	6.4	Prices at Firm Level	101
	6.5	Aggregation at Industry Level	102
7	The	e Contribution of Multilingualism to Value Creation	105
	7.1	Value Added and the Production Function	105
	7.2	The Data	106
	7.3	Application: Language Skills and Production Functions	110
	7.4	Extension to Cost and Profit Functions	115
	7.5	Peeking into the Black Box Again	119
8	For	eign Language Skills and Hiring Strategies	123
	8.1	A Neighbouring, Yet Crucial Issue	123
	8.2	Foreign Language Requirements and Use	124
	8.3	Modelling Recruitment	128
	8.4	Towards Linguistic Audits	131

		,	Contents	vii
				135
9	Po	licy Implications		137
	9.1	Bases for Policy Choice		137
	9.2	•		140
	9.3	B Language Policy Priorities and Proposals: Contingent Multilingualism		143
10	M	ultilingualism at Work: A Prospective Glance		152
	10	.1 Taking Stock		152
		~		156
	10	.3 New Avenues		159
$Ap_{j}$	реп	dix I: Language-Augmented Production Model		163
	1	The Core Model		163
	2	Derived Demand for Inputs and Derived Supply for Output		164
	3	Comparative Statics		165
	4	The Variable Profit Function		166
	5	Using the Translog Function		168
$Ap_i$	pen	dix II: Estimation Procedure and Results		171
	1	Databases Used		171
	2		tock	172
	3		n	173
	4	<del>-</del>		175
	5	Extracting Prices and Quantities of Goods and Services		175
	6	Estimation of the Production Function		177
	7	Estimation of the Cost Function		181
	8	Estimation of the Profit Function		184
PART III Policy Implications and Future Prospects  9 Policy Implications  9.1 Bases for Policy Choice  9.2 Link-up with Language Policy: The Role of the State  9.3 Language Policy Priorities and Proposals: Contingent Multilingualism  10 Multilingualism at Work: A Prospective Glance  10.1 Taking Stock  10.2 The Ideal Data Set  10.3 New Avenues  13  Appendix I: Language-Augmented Production Model  1 The Core Model  2 Derived Demand for Inputs and Derived Supply for Output  3 Comparative Statics  4 The Variable Profit Function  5 Using the Translog Function  Appendix II: Estimation Procedure and Results  1 Databases Used  2 Value Added, Labour Payment, Capital Payment, Capital Stock and Labour Quantity for Years 1995–2006  3 Using the CLES Database: Adjustments and Price Extraction  4 Extending CLES-drawn Prices and Quantities Beyond 1995  5 Extracting Prices and Quantities of Goods and Services  6 Estimation of the Production Function  7 Estimation of the Profit Function  8 Estimation of the Profit Function  18  Appendix III: A Simple Recruitment Model  1 The Context  2 Distribution of Speakers  3 Costs  4 The Firm's Programme	187			
	1	The Context		187
	2	Distribution of Speakers		187
	3	Costs		188
	4	The Firm's Programme		190
	5	Analysis of Results		191

## viii Contents

Notes	193
Bibliography	207
Author Index	221
Subject Index	225

## Tables and Figures

## **TABLES**

4.1	Gross Mean Yearly Earnings, Québec, Men and Women 1970 and 2000, Index Values Based on Current Canadian Dollars, Seven Sets of Language Skills	60
4.2	Net Impact on Earnings, Québec, Men and Women 1970 and 2000, Percentages, by Skills in Official Languages	62
4.3	Net Impact on Earnings, Québec, Men, 2000, Percentages, by Skills in Official Languages, with and without Industry Variable	63
4.4	Net Impact on Earnings, Québec, Men,2000, Percentages, by Skills in Official Languages, Eight Industrial Sectors	63
4.5	Gross and Net Impact on Earnings of Oral and Written Foreign Language Skills by Skills in Official Languages, Québec, Men, 1971, Percentages	64
4.6	Gross Earnings Differentials by Language Skills in National Languages, Switzerland, Men and Women, 1994–1995, Index Values Based on Current Swiss Francs	66
<b>4.</b> 7	Gross Earnings Differentials by Competence Level in English, Switzerland, Men and Women, 1994–1995, Index Values Based on Current Swiss Francs	67
4.8	Net Impact on Earnings of "Excellent" or "Good" Foreign Language Skills, Switzerland, Men 1994–1995, Percentages	68
4.9	Gross Earnings Differentials by Competence Level in Turkish, Switzerland, Men and Women, 1997–1998, Index Values Based on Current Swiss Francs	70

x Tables and Figu	ires
-------------------	------

5.1	Net Impact on the Use of French in the Workplace, Bilingual Francophones, Québec, 1971, 1979 and 1989, Percentage of Working Time	79
5.2	Net Impact on the Use of French at Work, Large Employers, Québec, 1977–1979, in Percentage of Working Time	80
5.3	Net Impact of Ownership by Language Groups on Productivity, Unit Costs and Exports, Manufacturing Establishments, Québec, 1978	82
5.4	Net Impact on the Use of English at Work, French- and German-speaking Switzerland, 1994–1995, Odds Ratios	84
5.5	Net Impact on the Use of English in Percentage of Working Time, Manufacturing Firms in French- and German-speaking Switzerland, 2008–2009 (N = 191), Percentages	85
6.1	Example of Relationship between Inputs and Output	94
7.1	Estimates of Stock of Language Competences Available to Swiss Firms, in Units per 100 Workers, 1995 Data	107
7.2	Changes in Price and Quantity of Language Skills and Labour from 1995 to 2004, Switzerland	108
7.3	Price Indexes for Sales and Purchases, by Language Used with External Trade Partners, Manufacturing Industries, Switzerland, Selected Years	109
7.4	Quantity Indexes for Sales and Purchases, by Language Used with the External Trade Partners, Sectors 'MET' and 'MAC', Switzerland, Selected Years	109
7.5	Elasticity of Value Added with Respect to the Stock of Language Skills, Switzerland	112
7.6	Percentage Change in Value Added as a Result of a 100% Drop in the Stock of Foreign Language Skills, Switzerland	114
7.7	Elasticities Derived from a Cost Function, Selected Results	117
7.8	Elasticities Derived from a Profit Function, Selected Results	118
7.9	Share of Communication Time in a Non-local Language, by Language Region and Department within the Firm, Switzerland	121

8.1	Foreign Language Skills Requirements at Hiring, Switzerland, 1994–1995, by Foreign Language and Language Region, Percentages	125
8.2	Use of Foreign Language Skills at Work, Switzerland, 1994–1995, by Foreign Language and Language Region, Percentages	125
8.3	Linguistic Skills Under-requirements (Differences between Foreign Language Use and Requirements), Switzerland, 1994–1995, by Foreign Language and Language Region, Percentages	126
8.4	English Language Skills Requirements and Use, by Type of Employment, Switzerland, 1994–1995, Odds Ratios	127
9.1	Calibrating and Sharing the Cost of Language Education Policy	150
10.1	The Ideal Data Set	157
A-II.1	List of Empirical Variables	178
A-II.2	Production Function: Estimation Results	180
A-II.3	Production Function: Scaling Factors	181
A-II.4	Elasticities from a Translog Cost Function	182
FIGUR	ES	
1.1	Multilingualism at work: general analytic framework.	20
4.1	Foreign language (FL) skills and the production process.	57
5.1	Language-augmented production model.	90
6.1	Breakdown of labour by skills levels.	98
8.1	Distribution of speakers by competence level in language $F$ .	128
8.2	Targeted v. necessary foreign language skills.	130
A-III.1	Distribution of L2 speakers.	188
A-III.2	Distribution of job applicants' language skills.	189