

## Contents

List of Tables.....	ix
List of Figures.....	xi
1 Introduction .....	1
2 Broadband Infrastructure and Economic Growth – International Macro-Level Evidence ..	6
2.1 Broadband Infrastructure and Economic Growth – Related Literature .....	9
2.2 Model, Data and Descriptive Evidence.....	11
2.2.1 A Simple Growth Regression Framework .....	11
2.2.2 Data for OECD Countries .....	12
2.2.3 The Association between Broadband Infrastructure and Economic Growth.....	14
2.3 The Causal Effect of Broadband Infrastructure on Economic Growth.....	17
2.3.1 Instrumental Variables Derived from a Technological Diffusion Model .....	17
2.3.2 Instrumental-Variable Results.....	19
2.3.3 Tests for Instrument Validity and Robustness .....	28
2.4 Conclusion.....	34
3 Broadband Infrastructure and Innovation – International Firm-Level Evidence.....	35
3.1 Networks and Collaborations as Determinants of Innovation .....	36
3.2 Data Sources and Descriptive Statistics .....	38
3.3 Model .....	43
3.4 The Effect of Broadband Infrastructure on Innovation.....	44
3.5 Conclusion.....	51
4 Broadband Infrastructure and Unemployment – Evidence for Germany .....	52
4.1 Internet and Unemployment – Related Literature.....	53
4.2 Data, Model and Descriptive Evidence.....	55
4.2.1 Data Sources and Descriptive Statistics .....	55
4.2.2 Model .....	57
4.2.3 The Association between Broadband Infrastructure and Unemployment .....	57
4.3 The Causal Effect of Broadband Infrastructure on Unemployment .....	62
4.3.1 Identification Strategy .....	62
4.3.2 Instrumental-Variable Results.....	65
4.3.3 Robustness Tests and Discussion.....	68

4.4	Conclusion.....	72
5	Broadband Infrastructure and Political Participation – Evidence for Germany.....	74
5.1	Media and Political Participation – Related Literature .....	75
5.2	Model, Data and Descriptive Evidence.....	77
5.2.1	Model and Data .....	77
5.2.2	The Association between Broadband Internet and Political Participation.....	78
5.3	Instrumental-Variable Results.....	83
5.4	Robustness Tests and Discussion.....	86
5.5	Conclusion.....	88
6	Downstream Market Structure and Incentives to Invest in Broadband Infrastructure.....	90
6.1	Related Literature.....	92
6.2	Structure of the Model: The Patent Licensing Framework .....	93
6.3	Solving the Model .....	95
6.3.1	Competition in the Service Market .....	95
6.3.2	Licensing of the New Technology .....	98
6.3.3	Investment Decision.....	100
6.4	Conclusion.....	100
6.5	Appendix .....	102
7	Conclusion.....	103
	References .....	105