

Contents

List of figures	viii
List of tables	ix
List of boxes	x
List of selected acronyms and abbreviations	xi

1 Introduction	1
1.1 What is meant by economic regulation?	3
1.2 What is 'modern' about economic regulation?	5
1.3 New experience and analysis	7
1.4 Structure of the book	8

PART I

2 The recurring question: why regulate utilities?	13
2.1 Normative rationales for public utility regulation	14
2.2 Alternative explanations for public utility regulation	28
2.3 Implications of the different rationales for regulation	35
3 Alternatives to traditional regulation	37
3.1 Is economic regulation inevitable?	37
3.2 Competition <i>for</i> the market	37
3.3 Contestability and the threat of entry	40
3.4 State ownership of the utilities	44
3.5 Reliance on <i>ex post</i> competition law	48
3.6 'Deregulation' policies and a reliance on competition	51
3.7 Negotiated settlements	58
3.8 Other alternative approaches to public utility regulation	60
3.9 Conclusion	62

PART II

4	Principles of regulation for core network activities	65
4.1	Public utility industry structures	65
4.2	Pricing principles under full information	70
4.3	Pricing principles for the multi-product firm	78
4.4	Regulation in the context of imperfect information	86
4.5	Pricing in a multi-period context	91
4.6	Principles relating to quality and cost reduction	97
4.7	Conclusion	99
5	Forms of price regulation	103
5.1	Rate of return regulation	104
5.2	Price cap regulation	114
5.3	The relationship between rate of return and price cap	129
5.4	Hybrids and adaptations to traditional price regulation	133
5.5	Price regulation when competition is emerging	137
5.6	Conclusion	139
6	Regulation in the presence of competition	141
6.1	Access in the public utility industries	141
6.2	One-way access pricing	145
6.3	Two-way access pricing	160
6.4	Access pricing and investment	170
6.5	Vertical separation in the public utility industries	175
6.6	Conclusion	183

PART III

7	The institutions of regulation	189
7.1	The rationale for independent economic regulatory agencies	190
7.2	The evolution of independent regulatory agencies	201
7.3	Design of regulatory agencies and the scope of their power	209
7.4	Regulatory oversight: <i>quis custodiet ipsos custodes?</i>	217
7.5	Conclusion	221
8	Electricity regulation	223
8.1	Physical and economic characteristics of electricity	223
8.2	Approach to electricity regulation	235

8.3	Regulatory policy issues in the electricity industry	242
8.4	Conclusion	265
9	Gas regulation	267
9.1	Physical and economic characteristics of gas	268
9.2	Approach to gas regulation	281
9.3	Regulatory policy issues in the gas industry	292
9.4	Conclusion	309
10	Telecommunications regulation	311
10.1	Physical and economic characteristics of telecommunications networks and services	313
10.2	Approach to telecommunications regulation	325
10.3	Regulatory policy issues in the telecommunications industry	341
10.4	Conclusion	357
11	Water and wastewater regulation	359
11.1	Physical and economic characteristics of water and wastewater	360
11.2	Approach to water and wastewater regulation	372
11.3	Regulatory policy issues in the water and wastewater industry	383
11.4	Conclusion	405
12	Conclusions	407
12.1	Rationales for, and alternatives to, public utility regulation	407
12.2	The relationship between theoretical principles and regulatory practice	408
12.3	Regulation in practice	410
12.4	Evidence on the effects of restructuring policies in the public utility industries	411
12.5	Future challenges for regulation	413
	Cases and legislation	
	Europe	415
	UK	416
	USA	417
	Australia and New Zealand	418
	Bibliography	419
	Index	461