Contents

List of figures x
List of tables xi
Acknowledgements xiii

Introduction 1
Opening Pandora’s jar 1
Overview of the nature and structure of the book 2

Part I A sketch of the argument 7
1 The limits to growth in organic economies 9
The views of the classical economists 10
The energy constraint 13
Production and reproduction 17
Conclusion 21

2 The transition from an organic to an energy-rich economy 26
Agricultural growth, industrial growth, and transport improvements 28
Manpower productivity in agriculture 33
The energy revolution 36
Conclusion 47

Part II Favourable developments 53
3 Agricultural change and urbanisation 55
Urban growth 58
The consumer revolution 68
The agricultural system 73
The rise in agricultural output 78
The London effect 88
Conclusion 90

4 Energy and transport 91
The history of energy consumption 91
Coal production and transport provision 101
Other improvements in transport facilities 108
Conclusion 110

5 Occupational structure, aggregate income, and migration 113
Occupational structure and migration 113
Occupational change and aggregate income 127
Aggregate income trends and migration 135
Conclusion 138

6 Production and reproduction 140
The components of population change 144
England in a wider setting: the concomitants of faster population growth 152
Regional diversity 163
Conclusion 172
Retrospect of Part II as a whole 175

Part III What set England apart from her neighbours 179

7 The timing and nature of change in the industrial revolution 181
Preliminary considerations 181
Relative growth rates 187
The escape from the constraints of an organic economy 193
The changing character of the growth surge 196
Why the growth surge continued 198
A summary of the character and timing of the changes which took place 205

8 Modernisation and the industrial revolution 211
Introductory comment 211
England and the Netherlands 216
Contents

The relationship between industrialisation and modernisation 225
National entities and lopsided growth 228
Conclusion 232

Part IV Retrospective 237

9 The industrial revolution and energy 239
  The energy revolution 239
  Pandora’s jar again 245

Appendix 251
Bibliography 258
Index 268