Index

adaptive behaviour of firms 237, 247–8
and individualism 207–8
management 207–8
in production 207–8
sources (Intel) 247–8
Alchian, Armen A. 214, 229, 231
Ansoff, H. Igor 189
Aoki, Masahiko 4, 45
Aoki, Masanao 45
Arena, Richard 198–210
Arthur, W. Brian 12, 44–5, 47, 85, 131, 141, 230
Austrian school differences and similarities with old institutional economics 161–3, 164, 166–72, 173–4, 175, 176–8
entrepreneurship 168–9
evolutionary themes 198–210
market equilibrium 164–5, 166, 168–9, 176
market, meaning of 102, 160–80
barter economy 200–202, 206
Barth’s Law of Heavy Labouring 80
behaviourism bounded rationality 9–11
and economic behaviour 40
habit 3, 8–9, 10, 11, 12, 19, 29–30, 31, 57, 70, 169–71
path dependence 139
satisficing 20
and variational change 101
see also individualism; rationality
Belle Epoque 76, 83
Berry, B.J. 84
Best, Michael 218, 222
Boettke, Peter 160, 163, 164, 165, 168, 172, 180
bounded rationality bounded communication skills 22–3
calculation skills 23–5
contract incompleteness 21
and economizing behaviour 20–27, 31
emotional skills 26–7, 28
endogenous preferences and exogenous instincts 27–32
‘hyperbolic discounting’ problem 39
identity seeking 27
individual and aggregate behaviour 37–41, 42
infinite regress problem 24
information processing skills 23–4
and institutionalism 19–33
mainstream economics 20, 23
and markets 22, 39
neoclassical economics 22, 26, 28–9, 31, 32, 78, 184
and opportunism 55
optimization costs 23–5, 29
preference formation skills 25–6, 27, 36, 38, 39–40
program-based behaviour 9–11
and property rights 21, 22, 162
satisficing behaviour 20
transaction costs 20, 21
variation development 101
see also imagination; rationality
Bretton Woods system 92
business cycle theory 76–7, 78, 80–81, 196
business practice 185–6, 189, 192–3
and time 194–5
Campbell, Donald T. 215, 234, 235, 249
capitalism 80, 98–9, 102, 146, 162
chaos theory 126
childcare, male participation in 92
CIM (computer-integrated manufacturing) 87
Clark, John Maurice 1, 19, 29, 81–2
CNC (computer numerical control) 86, 87
Coase, Ronald H. 53, 188, 213, 214, 222, 225, 229, 230, 231
Cognitive psychology 6–7
collective action, in individualism 40, 91, 162, 170, 176
Commons, John R. 1, 54, 160, 162, 163, 166–7, 170, 176, 178
communication bounded 22–3
costs 22–3
information 3, 23, 24, 35–6, 47–8
information diffusion, speed of 47–8
information processing skills 23, 24
learning by using effects 22, 23
competition
competitive advantage 67, 222
Darwinian evolutionary principles 240, 248, 249
and evolutionary economics 102–4, 186
growth, endogenous 102–4
imperfect 11, 12, 13
and individual interaction 35–6, 226
and innovation 104, 110–11, 112, 243–4
and Intel 248
and market equilibrium 169
market failure 127, 128–9
perfect 11, 12, 13
pressure and trust 57, 62
and rationality 36
and resource allocation 222, 226, 244–5, 247, 249
and stock markets 146, 147–9, 150–51
unfair 170

see also markets; price system
computer technology 88, 91
see also ICT; Intel
cooperation
boundary definition 71
and continuity 70
and dissolution 66–8, 69, 71–2
egotistic 55–6, 62–3, 67
and experimental economics 10

in firms 216, 217–18
‘making attractive’ 68, 69, 70, 71–2
non-egotistic 55–6, 63, 67
shared language 70
sources 55–8
credit allocation 146, 153, 154–7
cultural heritage
common 3, 7, 8–9, 55, 161
emotional skills 26
habits 3, 8–9, 10, 11, 12, 19, 29–30, 31, 57, 70, 169–71
Cziko, Gary 234, 235

Darwinian evolutionary principles
adaptation sources (Intel) 247–8
biological analogies and economic theory 138–9, 161, 236–7
change pattern (Intel) 246
and competition 240, 248, 249
evolutionary theory of the firm 233–51
evolutionary theory of the firm, problems of application 235–7
evolutionary theory of the firm, prospective outlook 248–50
and Intel 241–6
Lamarckian mechanisms 236
natural selection versus structural constraints 239, 240
punctuated equilibria 238, 239, 247, 250
reproductive versus economic behaviour 240–41
selection unit (Intel) 247, 249
and self-interest 239
single level versus hierarchical theory 239, 249–50
Ultra- 237–41, 246–9
Universal 233–51
variation-selection-retention algorithm 235–6, 249
see also evolutionary economics
David, Paul A. 22, 47, 120–42, 171
decision-making 12
and cognition 7–8
and innovation 217
in institutional economics 102, 162
manageable and unmanageable 194–5
rationality 7–8
Index

and uncertainty 192, 193, 222, 223
work force participation 91
demand, evolution of 107, 113–17
Dennett, D. 234, 235
depression 80–81
developing countries, securities
markets 146
Dosi, Giovanni 79, 81, 85, 222, 230
DRAM products (Intel) 241–3, 244–5,
246, 247, 248
Drucker, Peter 188, 189
Dulbecco, Philippe 160–80
Dutraive, Véronique 160–80
econometrics, introduction of 127
economic power, and firm size 215,
216–17
economics
crises 92
efficiency 36–7
endogenous preferences in 7–9, 19
environmental 190
evolutionary see evolutionary
economics
experimental 5, 10, 36, 40
growth see growth
institutional see institutional
economics
mainstream see mainstream
economics
marginalism 166, 198, 199, 213
market economic development
145–59
market as economic process 163–72
modern theory, landscape of 11–13
neoclassical see neoclassical
economics
political economy of long wave see
long wave theories
standard theory 36–7
transaction costs see transaction
costs economics
welfare see welfare economics
education sector, and
telecommunications 95–6
efficiency
economics 36–7
and innovation 130
El Farol Bar problem 44–5
Eldredge, Niles 234, 238, 240
emotional skills
bounded rationality 26–7, 28
cultural heritage 26
employment
full 92
future growth of 93–7
ICT 93–5
and labour productivity 93–4
manufacturing industry evolution
104–5
and wage levels 97
see also unemployment
entrepreneurs, and Schumpeter, Joseph
A. 206–9
entrepreneurship
Austrian school 168–9
decision-making 208
imagination and possibility 191–4,
195–6
long wave theories 79
and management 206–9
and markets 168
and profit 168
selection process 208
see also firms; innovation;
management
environmental economics 190
equilibrium
general equilibrium theory 4, 42,
128–9, 145, 149, 154, 184, 185,
190–91
Nash 4, 62, 129, 132
stock market price 147–8, 150,
151–3
evolutionary economics
Austrian school 198–210
competition, markets and
innovation systems 102–4, 186
and demand 107, 113–17
dynamics of 47
in economic theory landscape 12, 13
endogenous growth see growth,
endogenous
evidence for 104–5
focus losses 190
game theory 41
and growth 100–101, 105, 212–13
ICT 84–94
and individual action 169, 177
Index

innovation 102–4, 106–7, 108–12, 136, 177
institutional economics 29–30, 102–4, 135–6, 174–8, 195
Intel 246–8, 249–50
manufacturing industries 90, 104–5 and markets 102–4, 160, 166, 167, 169, 171–2, 173
nihilism 187–91, 194, 196
structural change, sectoral and macroeconomic productivity growth 112–17
and technological change 135–7, 166, 177
uncertainty, intelligence and imagination 183–97
see also Darwinian evolutionary principles; path dependence
experimental economics 5, 10, 36, 40
see also game theory
fatalism 191
firms
adaptation 237, 247–8
aggregations 215
autonomy and integrity 214, 220
CIM (computer-integrated manufacturing) 87
cognitive processes 226–7
comparative advantage 193
competency access 54
competition see competition cooperation in 216, 217–18
corporate culture 219, 220
de-centralization 91
decision-making see decision-making
downsizing 91
dual agency relationship 162
evolutionary theory of 222, 225–6
financial groups as 215–16
and growth 106, 110, 211–32
growth, change dynamics 224–8
growth, economies of 220, 226
growth and intangible resources 218–24
individual intentional actions 214, 249, 250
industrial integration 216
and innovation 102, 107, 108–12, 214, 217, 245
knowledge dispersal 226, 227
labour, division of 106, 187, 223, 225
M-Form organization 216
management 162, 217, 218, 219, 227, 244–6, 250
management teamwork 224
market coordination 217–18
and market selection process 102, 236
Markov chain 124
MNCs 91, 216
nature and boundaries 213–18
networks 216
organization of 91, 95
Penrose Effect 217
planning and implementation 225, 227–8
policy criteria 215–16
price-setting 102, 213–14
productivity growth 108–9, 111–12
resources see resources
responsibility delegation 223–4
rivalry 102, 104, 130
routines 236–7, 248
scale economies 91
selection, hierarchical nature of 249–50
size and economic power 215, 216–17
as social organization 220
specialization 54, 186, 226
technical progress function 109–10, 111
and technology choice 85, 86–7, 95
and transaction cost economics 214, 218
transaction governance 53–71
trust 54, 55–6, 57, 62, 63, 67, 70
and uncertainty 220, 222, 223, 224
variation and retention sources 236
see also entrepreneurship; markets; price system; production
fish market example 41–4, 50, 51
Fisher, Franklin 129
Fisher, Ronald A. 119
Fordism 83, 84, 85, 86
Index

France
Paris Bourse 145, 147–8, 149
unemployment rates 77
Freeman, Christopher 75–97
Friesen, Peter H. 162, 180, 250

game theory
and equilibria 62
evolutionary 41
and individual interaction 5, 35–6
modern economic theory 11, 12
network evolution 51, 55, 58
pure coordination games 132
quantal response function 49
and rationality 4–5, 12, 184
repeated games 2, 70
strategic interaction in transaction
costs economics 66–8, 70
see also experimental economics
Garrouste, Pierre 172, 174, 175, 179, 180
general equilibrium theory 4, 42,
128–9, 145, 149, 154, 184, 185, 190–91
Germany
historicism 161, 209
joint-stock banks 157
unemployment rates 77
Gloria-Palermo, Sandye 169, 198–210
Gould, Stephen Jay 101, 234, 238, 239, 250
growth
as evolutionary theory 100–105, 105,
212–13
of firm (Penrose) 106, 110, 211–32
and fitness differences 101
future, and employment 93–7
and income distribution 80
and knowledge accumulation 99,
106
and microeconomics 99, 100, 101,
106, 107, 112, 113
social dimensions of 103
and structural change 106
growth, endogenous
competition 102–4
and increasing returns 98–119
and innovation 102–4, 107
macroeconomic models 98–9
and market coordination 102–4, 107
and productivity 105–6
technical progress functions 107, 109
habit 3, 8–9, 10, 11, 12, 19, 29–30, 31,
57, 70, 169–71
see also instinct
Hayek, Friedrich A. 1, 22, 31, 161,
164, 174–5, 177, 195, 226, 232
healthcare 96
hedonism 28, 29, 169, 207, 208–9
historical economics see evolutionary
economics; path dependency
Hodgson, Geoffrey M. 1–15
‘The approach of institutional
economies’ 24, 32, 169, 218
‘Darwinism in economics’ 234, 251
Economics and Evolution 54, 103,
233
Economics and Institutions 53, 54
The Evolution of Institutional
Economics 234
‘Is social evolution Lamarckian or
Darwinian?’ 236
‘The mystery of the routine’ 267
‘Organizational form and economic
evolution’ 33, 170
‘The return of institutional
economics’ 166, 177, 178
‘hyperbolic discounting’ problem 39
ICT
economic advantages of 84–6
and education sector 95–6
employment and productivity 93–5
evolution of 84–94
and healthcare 96
regulation 87
see also technology
imagination 191–4, 195–6
see also bounded rationality
imitation, and innovation 203, 205, 209
income distribution 80
individualism
adaptive behaviour 207–8
and aggregate behaviour 37–41, 42
bounded rationality see bounded
rationality
character moulding 185
cognitive psychology
299
collective action 40, 91, 162, 170, 176
and competition 35–6, 226
compulsion, forces of 204
criticism of 203–4
El Farol Bar problem 44
in firms 214, 249, 250
habit 3, 8–9, 10, 11, 12, 19, 29–30, 31, 57, 70, 169–71
information diffusion, speed of 47–8
and innovation 79
interaction, different forms of 45–6
interaction dynamics 47
interaction networks, local 47–51
language see language
leaders and masses, interaction between 203–6
and market equilibrium 164, 165, 166–7
and Markov chain 124
money, emergence of 200–203, 206
neighbourhood preferences 48
network structure and partner choice 48–50, 58–60, 62
public goods 44
pure coordination games 132
relationships life cycle 69–72
self-interest 161, 163, 200, 201, 203, 204–5, 239
and technology choice 85
transaction costs economics see transaction costs economics
value decisions 207
see also behaviouralism; institutional economics
inflation 92, 187
innovation
and competition 104, 110–11, 112, 243–4
correlate 81, 83
decision-making 217
and efficiency 130
everation economics 102–4, 106–7, 108–12, 136, 177
exogenous, and path dependency 132–3
and firms 102, 107, 108–12, 214, 217, 245
and growth, endogenous 102–4, 107
and habits 171
and imitation 203, 205, 209
and individualism 79
knowledge accumulation 79, 106–7
and markets 102
and nihilism 189
productivity growth 108–9, 116
and profit 79–80, 111, 214
selection within a sector 108–12
technical, interdependence of 81–2, 136–7
see also entrepreneurship; growth; Intel; R&D
instinct 9, 10, 19, 31
and bounded rationality 27–32
see also habit
institutional economics and bounded rationality see bounded rationality
and change 166, 173–8
cognitive rationality 8
coordination 103, 107
cultural heritage, common 3, 7, 8–9, 55, 161
cumulative causation 161, 166, 167
decision-making see decision-making
designed and undesigned institutions 175–6, 178
in economic theory landscape 12, 13
emergence of 1, 2–4, 198
evolution of 29–30, 102–4, 135–6, 174–8, 195
financial groups 215–16
and game theory see game theory
and habit 169–71
and ICT development 87
incomplete knowledge 195–6
individuals, influence of 2–3, 169, 171, 176–7, 200, 203–4, 205
information communication 3, 35–6, 173
instituted economic processes 98–119
and interaction 35–6
knowledge transfer 103, 163, 173
and language see language
leaders and masses, interaction between 203–6
and legal order 175–6, 178
Index

market equilibrium 166
market, meaning of 160–80
and markets 2, 166, 173–8, 202–3
new 2–4, 7, 19, 20–27, 32, 54–5, 174
and novelty 177
old 7, 19, 27–32, 54, 160–80
organic (spontaneous) institutions 200
permanency–flexibility dilemma 174, 176
and price determination 145–6, 149
private property see private property
rule-following behaviour 173
selection mechanism 175
social control 163
social reality 5, 13
and trust 54, 55–6, 57
see also firms; individualism; markets
insurance companies 156
Intel 241–6
adaptation sources 247–8
change pattern 246
and competition 248
evolutionary interpretation 246–8, 249–50
selection unit 247, 249–50
International Marketing and Purchasing Group (IMP) 54, 55
investment theory
and credit 146, 153, 154–7
fixed capital 78–9
and interest rates 195
investment surges and long wave theories 83–4
Keynesian 78
and time 194–5
Juglar cycles 76–7, 78
Kaldor, Nicholas 100, 107, 116, 117
Keynes, John Maynard 154, 157, 184, 187, 192, 196, 207
Keynesian resurgence 75–9, 92, 154, 185
Kirman, Alan P. 4, 5, 6, 34–52
Kirzner, Israel M. 164, 168, 231
Knight, Frank H. 4, 106, 191, 220, 222, 223, 225
knowledge
‘common knowledge’ problem 36
dispersal 226, 227
imagination and possibility 191–4
imperfect 186–7, 189, 195–6
information processing skills 23, 23–4
and innovation 79, 106–7
probabilistic approach 189–90
in stock markets, perfect and imperfect 151–2, 153
tacit 22, 227
transfer 103, 163, 173
Knudsen, Thorbjørn 8, 9, 12–13, 233, 234, 236, 249, 251
Kondratieff cycles see long wave theories
Kondratieff, Nikolai D. 76–7, 81, 93
Kregel, Jan 145–59
labour
division of 106, 187, 223, 225
work intensity 80
Lachmann, Ludwig M. 160, 163–4, 165, 168, 173, 174, 175–6, 177, 178
language
as institution 3
shared, and cooperation 70
leadership
and masses, interaction between 203–6
see also management
Leathers, Charles G. 161, 179
legal and political foundations of markets 162, 163, 167, 175–6, 178
Lewontin, Richard C. 234, 235, 251
Liebowitz, S. 126, 128, 130, 131, 133, 134
Loasby, Brian J. 167, 183–97, 225, 228, 230, 232, 236, 249
long wave theories 75–97
Belle Epoque 76, 83
and depression 80–81
economic structural change 83
employment growth prospects in fifth Kondratieff 93
and entrepreneurship 79
investment surges 83–4
Juglar cycles 76–7, 78
Keynesian resurgence 75–9
mainstream economics 77
new 81–4
and new technology assimilation 78, 81
post-war boom (fourth Kondratieff upswing) 76, 82
and profit 79–80
recession of 1990s 75–9
supply availability 82
techno-economic paradigm 81, 82–4, 242
techno-economic paradigm, emergence of new 84–93
loyalty 49–50
M-Form organization 216
Machlup, Fritz 213, 214, 230
macroeconomics 5, 12, 38, 42
and economic growth 106
and employment 92
productivity growth 112–17
and time 194–5
see also microeconomics
mainstream economics
and bounded rationality 20, 23
calculation, insufficiency of 186–7
changes in 4–6
general equilibrium theory 4, 42, 128–9, 145, 149, 154, 184, 185, 190–91
long wave theory 77
path dependency 126, 127, 138–9
rational choice 169, 186, 187
social preferences 10
management
absentee 146
adaptive behaviour 207–8
and entrepreneurship 206–9
of firms 162, 217, 218, 219, 227, 244–6, 250
flexible 91, 220
focus losses 190
as intangible resource 218–24
and nihilism 188–9
resources, and production 219, 220
and Schumpeter, Joseph A. 206–9
teamwork 224
and uncertainty 220, 223
see also entrepreneurship; leadership
manufacturing industries, evolution of 90, 104–5
marginalism 166, 198, 199, 213
Margolis, Stephen E. 126, 128, 129, 130, 131, 133, 134
markets
allocative mechanism 162, 186, 214
barter economy 200–202, 206
and bounded rationality 22, 39
continuous trading 150–52
coordination 102–4, 107, 217–18
credit allocation 146, 153, 154–7
decision-making see decision-making
discovery–arbitrage behaviour 168
double auction 36–7, 44
economic development 145–59
as economic process 163–72
entrepreneurial behaviour 168
equilibria 36–9, 44–6, 62, 102, 164–6, 168–9, 171, 174, 176
equity 154, 157
and evolutionary economics 102–4, 160, 166, 167, 169, 171–2, 173
in experimental economics 5
failure, and path dependency 127, 128–9, 130, 132, 137–8
failure, and public policy 137–8
fish market example 41–4, 50, 51
free 162–3
and growth, endogenous 102–4, 107
individual and aggregate behaviour 39, 41–6, 226
information dissemination 102
and innovation 102
and institutional change 166, 173–8
as institutions 2, 202–3
International Marketing and Purchasing Group (IMP) 54, 55
and interventionism 163
investment behaviour in new 78
law of demand 43
legal and political foundations 162, 163, 167, 175–6, 178
loyalty 49–50
meaning of, Austrian and institutional comparisons 160–80
money, emergence of 200–203, 206
network evolution 51, 164
new entrants 194
optimality 22
pattern coordination 165–6
price determination 145–9, 150, 154, 168
production without markets 202–3
resource allocation, efficient 149, 153, 156
securities 146, 155, 156, 157
selection process 102, 236
‘shopping around’ 49–50
stock see stock markets
transaction costs economics see transaction costs economics
United States historical experience 155–7
see also competition; firms; price system
Markov chain 124, 125
Marshall, Alfred 1, 42, 100, 103, 106, 118, 149, 150–53, 194, 196, 208
and Shackle, George 185–6
Marx, Karl 31–2, 79, 99
mass production 83, 84, 86
Golden Age of Growth 92
limits to growth 91
Menger, Carl 161, 162, 172, 174, 175, 198, 199–203, 206, 208–9
and Shackle, George 185–6
Metcalf, J. Stanley 98–119
microeconomics 38, 188
and economic growth 99, 100, 101, 106, 107, 112, 113
new 198
see also macroeconomics
Miller, Danny 162, 180, 250
MNCs 91, 216
money, emergence of 200–203, 206
monopoly 90
oligopolies 91, 184
simple 11–12, 13
natural selection see Darwin evolutionary principles
and S. Winter 81, 99, 173, 194, 222, 229, 233, 236–7, 249
neoclassical economics 4–5, 13, 214
and bounded rationality 22, 26, 28–9, 31, 32, 78, 184
costless maximization 29, 32
criticism of 163
and economic equilibrium 166, 167
firms in 216
and historical economics 121
human problem-solving 236
and path dependency 127–8, 129, 139
resource allocation 221–2
and specialization 54
transaction costs 54
and uncertainty 78
see also Menger, Carl; Schumpeter, Joseph A.; von Wieser, Friedrich
networks 51, 55, 58, 215
and game theory 51, 55, 58
local interaction 47–51
markets 51, 164
structure and partner choice 48–50, 58–60, 62
new economic history movement 127
nihilism 187–91, 194, 196
Nooteboom, Bart 6, 53–72, 249
North, Douglass 1, 2, 6–7
O’Driscoll, Gerald P. 160, 165, 171, 172, 173, 174, 175, 180
OECD
techno-economic paradigm 84–5, 88–92
unemployment rates 76, 77
oligopolies 91, 184
see also monopoly
opportunism 54, 55, 102, 138, 189
inclination towards 56–8, 59–60, 62, 63, 64–5, 66, 67
information asymmetry 59, 61, 67, 68, 70
Pagano, Ugo 13, 19–33
path dependence 120–42, 177
asymptotic distribution 125
behaviouralism 139
definitions of 123–8
deterministic chaos 126
ergodic systems 123, 124
and functionalism 138
historical analysis, counterfactual 134–40
and historicity 127–8, 130–34
and inefficiencies 128–30
and innovation 132–3
lock-in 130–34, 138–40
mainstream economics 126, 127, 138–9
and market failure 127, 128–9, 130, 132, 137–8
Markov chains 124, 125
negative definition 124–5
neoclassical economics 127–8, 129, 139
and net gain 131
path-constrained meliorating actions 134–8
positive definition 125–8
predictability 126, 127
pure coordination games 132
remediability test 129–30
‘seriousness’ 133
stochastic sequential processes 123–4, 126, 127
sunk cost hysteresis, overcoming 137, 138–40
transition probabilities 125
and welfare economics 134–5, 137
see also evolutionary economics
path independency 123–4, 129
Penrose, Edith 211–32, 236
Perez, Carlota 78, 81, 82–4, 85
Plotkin, Henry C. 9, 10, 234, 235, 251
political economy of long wave see long wave theories
preference formation skills, bounded rationality 25–6, 27, 36, 38, 39–40
price system
distribution 46
equilibrium price (stock market) 147–8, 150, 151–3
firms 102, 213–14
guaranteed price 55
individual and aggregate behaviour 39, 41–4
information 22, 37
market 145–9, 150, 154, 168
monotonicity property 43–4
price determination 102, 145–9, 150, 153, 206, 213–14, 222, 226
reservation price 46
and resource allocation 222
see also competition; firms; markets
privatization 157
privileged classes, emulation of 30
probability theory 189–90, 192–3
production
adaptive behaviour 207–8
discovery–arbitrage behaviour 168
inputs, cost structure of 82
joint 70
and management resources 219, 220
outsourcing 91
and resource allocation 222, 226, 244–5, 247, 249–50
scale economies 91
techno-economic paradigm 81, 82–4, 242
technology development (Intel) 242–4, 247–8
without markets 202–3
work intensity 80
see also firms
productivity growth 31–2, 112–17
demand, sorting and structural change 113–17
endogenous 105–6
firms 108–9, 111–12
ICT 93–5
and income growth 113
and innovation 108–9, 116
labour 93–4
profit
and capital investment 80
and entrepreneurial behaviour 168
and firm size 215, 216–17
and innovation 79–80, 111, 214
long wave theories 79–80
and resource allocation 247
property rights 21, 22, 162
psychology 9, 39–40, 207
R&D
collaborative 103
computer technology 88
Index

and probability theory 193
scale economies 91
service industries 90
telemcununications 89
see also innovation; Intel
rationality 170, 184, 187, 193
agent-based models 5, 36, 37–8, 40, 41–51
alternatives, lack of 41
bounded see bounded rationality
collective, and interaction 40, 44–5
and competition 36
context-independent 5, 8
continuity of preferences 38–9
decision-making 7–8
deliberative 13
El Farol Bar problem 44–5
energetic egoism 207, 208–9
expectations modelling 11, 12
and game theory 4–5, 12, 184
and habit 170
hedonic egoism 207, 208–9
and imperfect knowledge 187
and inertia 41
mainstream economics 169, 186, 187
optimal foraging theory 40–41
procedural 193
rationality-as-behaviour argument 10
rationality-as-consistency argument 10, 11
and scarcity 13
situated 5, 8
transitivity 39
unbounded 22, 26, 29
see also behaviouralism
recessions 91
resource allocation
and competition 222, 226, 244–5, 247, 249
markets 149, 153, 156
neoclassical economics 221–2
and price system 222
production 222, 226, 244–5, 247, 249–50
and profit 247
resources
coordination 215
intangible 218–24
potential services from 221–2
tangible 221
rivalry 102, 104, 130
Rizzo, Mario 160, 165, 171, 172, 173, 174, 175, 180
routines 236–7, 248
scarcity 13, 186
Schumpeter, Joseph 1, 76–7, 78, 84, 98, 99, 133, 154, 157, 191, 193, 195–6, 198, 199
entrepreneurs and managers 206–9
investment behaviour theory 79–81
science, knowledge accumulation 103, 106–7
securities markets 146, 155, 156, 157
self-employment 92
semiconductors 89
service industries, evolution of 90
Shackle, George L.S. 183–97, 220
economic coordination: success and failure 195–6
human progress guide 183–97
imagination and possibility 191–4, 195
insufficiency of calculation 186–7
legacy of 196–7
manageable and unmanageable decisions 194–5
and Marshall, Alfred 185–6
nihilism and practical wisdom 187–91, 194, 196
shareholders 162
see also stock markets
Shell 189–90
Simon, Herbert A. 10, 20, 195, 214, 217, 229, 231, 234
SMEs 88, 91
Smith, Adam 100, 106, 117, 184, 186, 188, 194, 196
social power 203–6
social security systems 76
specialization 54, 186, 226
types 194
stock markets
banks and development 154–7
and competition 146, 147–9, 150–51
equilibrium price 147–8, 150, 151–3
London Stock Exchange 150–53
Paris Bourse 145, 147–8, 149
perfect and imperfect knowledge 151–2, 153
shareholders 162
Stoelhorst, J.W. 233–51
subjectivism 163, 188
sunk cost hysteresis, overcoming 137, 138–40

technology
choice (of firms) 85, 86–7, 95
CIM (computer-integrated manufacturing) 87
CNC (computer numerical control) 86, 87
development (Intel) 242–4, 247–8
evolutionary development of 135–7, 166, 177
ICT see ICT
inferior 47
knowledge accumulation 103, 106–7
new technology assimilation 78, 81
technical progress function 109–10, 111
techno-economic paradigm, emergence of new 84–93, 242
telecommunications and education sector 95–6
and exogenous innovations 132–3
infrastructure 89
transaction costs economics adversarial strategy 65–70
asset specificity 222
bilateral private ordering 55
and bounded rationality 20, 21
cooperative strategy see cooperation
criticism of 218
and firms 214, 218
governance 53–72, 167, 170, 225
governance model, general 58–61
governance strategies 61–5
and guaranteed price 55
legal changes and political action 63, 69–70
material interest 56–7, 58
neoclassical economics 54
new institutionalist 54–5
opportunism see opportunism
relationships life cycle 69–72
risks 55
strategic interaction 65–9
transaction-specific assets 59
trilateral governance 55
trust 54, 55–6, 62, 63, 67, 70
and outside pressure 57
Turvani, Margherita 211–32
Tylecote, Andrew 78, 80, 84

UK
London Stock Exchange 150–53
unemployment rates 77
uncertainty
and decision-making 192, 193, 222, 223
and economic analysis 191
and firms 220, 222, 223, 224
and management 220, 223
neoclassical economics 78
and policy 189–90
and time 195
see also decision-making
unemployment 75, 76, 92, 187, 192
and uncertainty 196
see also employment
United States
banks and markets, historical experience of 76, 155–7
ICT employment 94
manufacturing industry evolution 104–5

Van Gelderen, Jan 76–7
Vanberg, Viktor J. 2, 11, 102, 172, 179
Veblen, Thorstein B. 54, 138, 161, 163, 167, 169–70, 172, 177
*The Instinct of Workmanship* 31–2
‘The limitations of marginal utility’ 176
*The Place of Science in Modern Civilization* 10, 12
*The Theory of Business Enterprise* 162
*The Theory of the Leisure Class* 1, 12, 13, 29, 30
‘Why is economics not an evolutionary science?’ 1, 19, 27–8, 166
von Wieser, Friedrich 198, 199, 203–6, 208–9
wage levels 97
Walras, Léon 81, 145–6, 147–9, 151, 152, 153, 161, 196, 198, 205, 207, 208
Watts, Duncan 51
Weisbuch, G. 48, 50
welfare economics 40, 45
market failure 127, 128, 130, 132
Williamson, Oliver E. 1, 2, 20–21, 27, 30–31, 53–4, 58, 129, 170, 216, 219, 222, 229
and S. Winter 213, 231
Winter, Sidney G. 1, 81, 99, 173, 194, 213, 215, 222, 229, 231, 233, 236–7, 249
work intensity 80
Young, Allyn A. 100, 106, 114, 117