**Index**

<table>
<thead>
<tr>
<th>Term</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>act, 123</td>
<td></td>
</tr>
<tr>
<td>act-dependent probability representation,</td>
<td>126</td>
</tr>
<tr>
<td>Afriat inequalities, 40, 64, 84, 118, 123,</td>
<td></td>
</tr>
<tr>
<td>138, 139, 177</td>
<td></td>
</tr>
<tr>
<td>Afriat’s efficiency index, 72, 78</td>
<td></td>
</tr>
<tr>
<td>Afriat’s Theorem, 40, 139, 177, 178</td>
<td></td>
</tr>
<tr>
<td>aggregate excess demand function, 130</td>
<td></td>
</tr>
<tr>
<td>aggregation rule, 159</td>
<td></td>
</tr>
<tr>
<td>Allais paradox, 115, 127</td>
<td></td>
</tr>
<tr>
<td>allocation, 136</td>
<td></td>
</tr>
<tr>
<td>atomic formula, 191</td>
<td></td>
</tr>
<tr>
<td>axiom, 191</td>
<td></td>
</tr>
<tr>
<td>axiom of revealed stochastic preference,</td>
<td></td>
</tr>
<tr>
<td>96 axiomatization, 191</td>
<td></td>
</tr>
<tr>
<td>balanced, 118</td>
<td></td>
</tr>
<tr>
<td>doubly, 122</td>
<td></td>
</tr>
<tr>
<td>bargaining</td>
<td></td>
</tr>
<tr>
<td>egalitarian, 150</td>
<td></td>
</tr>
<tr>
<td>Nash, 150</td>
<td></td>
</tr>
<tr>
<td>utilitarian, 150</td>
<td></td>
</tr>
<tr>
<td>Bayesian environment, 148</td>
<td></td>
</tr>
<tr>
<td>beliefs, 116</td>
<td></td>
</tr>
<tr>
<td>binary relation, 1</td>
<td></td>
</tr>
<tr>
<td>acyclic, 5</td>
<td></td>
</tr>
<tr>
<td>antisymmetric, 1</td>
<td></td>
</tr>
<tr>
<td>asymmetric part, 1</td>
<td></td>
</tr>
<tr>
<td>completeness, 1</td>
<td></td>
</tr>
<tr>
<td>convex, 4</td>
<td></td>
</tr>
<tr>
<td>extension of, 1</td>
<td></td>
</tr>
<tr>
<td>irreflexive, 1</td>
<td></td>
</tr>
<tr>
<td>linear order, 2</td>
<td>159</td>
</tr>
<tr>
<td>partial order, 2</td>
<td></td>
</tr>
<tr>
<td>quasitransitive, 1, 17, 18, 22, 27</td>
<td></td>
</tr>
<tr>
<td>reflexive, 1</td>
<td></td>
</tr>
<tr>
<td>strict extension of, 1</td>
<td></td>
</tr>
<tr>
<td>strict part, 1</td>
<td></td>
</tr>
<tr>
<td>strictly convex, 4</td>
<td></td>
</tr>
<tr>
<td>symmetric, 1</td>
<td></td>
</tr>
<tr>
<td>symmetric part, 1</td>
<td></td>
</tr>
<tr>
<td>transitive, 1</td>
<td></td>
</tr>
<tr>
<td>weak order, 2</td>
<td></td>
</tr>
<tr>
<td>Birkhoff–von Neumann Theorem, 92</td>
<td></td>
</tr>
<tr>
<td>bistochastic matrix, 92</td>
<td></td>
</tr>
<tr>
<td>Block–Marshall polynomials, 97</td>
<td></td>
</tr>
<tr>
<td>blocking pair, 154</td>
<td></td>
</tr>
<tr>
<td>Bronars’ index, 75</td>
<td></td>
</tr>
<tr>
<td>canonical conjugate, 22</td>
<td></td>
</tr>
<tr>
<td>certainty inclusive, 126</td>
<td></td>
</tr>
<tr>
<td>chain, 2</td>
<td></td>
</tr>
<tr>
<td>choice function, 143</td>
<td></td>
</tr>
<tr>
<td>complementarity, 57, 58, 66</td>
<td></td>
</tr>
<tr>
<td>complete markets, 117</td>
<td></td>
</tr>
<tr>
<td>component, 2</td>
<td></td>
</tr>
<tr>
<td>comprehensive set, 25, 87</td>
<td></td>
</tr>
<tr>
<td>condition α, 20, 96, 144, 195</td>
<td></td>
</tr>
<tr>
<td>condition β, 20, 144</td>
<td></td>
</tr>
<tr>
<td>cone, 60, 110, 180</td>
<td></td>
</tr>
<tr>
<td>congruence, 18, 179, 191, 194</td>
<td></td>
</tr>
<tr>
<td>partial, 28</td>
<td></td>
</tr>
<tr>
<td>conic independence, 92</td>
<td></td>
</tr>
<tr>
<td>constant act, 124</td>
<td></td>
</tr>
<tr>
<td>constant returns to scale, 90</td>
<td></td>
</tr>
<tr>
<td>consumption dataset, 35, 60</td>
<td></td>
</tr>
<tr>
<td>convex cone, 110</td>
<td></td>
</tr>
<tr>
<td>convex hull, 109</td>
<td></td>
</tr>
<tr>
<td>core, 140</td>
<td></td>
</tr>
<tr>
<td>correspondence, 3</td>
<td></td>
</tr>
<tr>
<td>cost rationalization, 83</td>
<td></td>
</tr>
<tr>
<td>Cournot oligopoly, 177</td>
<td></td>
</tr>
<tr>
<td>critical cost efficiency index, 73, 81</td>
<td></td>
</tr>
<tr>
<td>cycle, 154</td>
<td></td>
</tr>
</tbody>
</table>
Index

cyclic monotonicity, 9, 41, 65
cylinder, 99
data envelopment analysis, 94
dataset
  bargaining, 150
  consumption, 35, 60
  cross-country, 78
  cross-section, 78
  discrete, 58
  economy-wide, 136
  experimental, 79
  input–output, 83
  panel, 77
  partial production, 91
  partially observed, 51, 52
  production, 87
  time series, 79
  voting record, 168
demand correspondence, 34
demand function, 35, 130
dictator game, 80
direct revealed preference, 37
  strict, 37
  direct revelation mechanism, 147
disagreement point, 149
discipline, 16
downward-sloping demand, 117

edge, 154
election, 172
empirical content, 190
endowment vector, 129
Engel curve, 75
envy-free, 91
Epstein test, 121
equivalence relation, 2
Euclidean norm, 3
Euclidean space, 2
excess demand function, 130
exchange economy, 129
existential, see existential axiom
existential axiom, 139, 175, 180, 184, 186
expected utility, 115, 116
extension lemma, 6
extreme point, 109, 169

falsification, 176, 189
Farkas' Lemma, see Theorem of the Alternative
first-order stochastic dominance, 121
game, 143
game form, 143
GARP, see generalized axiom of revealed preference
generalized axiom of revealed preference, 26, 37, 46, 139, 176, 177, 187, 191
gradient, 3
graph, 154
gross complements, 66
Hal Varian, 55, 61, 73, 78
HARP, see homothetic axiom of revealed preference
Herbert Simon, 23
homothetic, 60
homothetic axiom of revealed preference, 61
homothetic revealed preference pair, 61
ideal, 180
ideal point, 164
idempotence, 133
IIA, 103
Inada conditions, 150
inclusion–exclusion principle, 98
independence axiom, 109, 115
indicator function, 3
indicator vector, 3
indifference relation, 1
indirect revealed preference, 37
inner product, 2
interchangeable, 147
interior, 3
isomorphism, 189
join, 2, 144
joint choice function, 143

Karl Popper, 184, 186

L-dataset, 188
L-structure, 189
language, 188
lattice, 2, 144
linear order, 2, 159
logit model, 106
lottery, 114
lower bound, 2
lower contour set, 4
lower production set, 88
Luce independence of irrelevant alternatives, 103
Luce model, 104
# Index

majority rule, 159
matching, 154
stable, 154
maximal element, 2
maximin, 150
mechanism design, 147
meet, 2, 144
Möbius inversion, 98
monetary act, 116
money pump index, 74
monotonic, 109
monotonicity, 9
multiplicative monoid, 181

*n*-ary relation, 2
*N*-congruence, 146
Nash bargaining, 150, 182
Nash equilibrium, 143
no arbitrage, 117
normal-form game, 143
null state, 124	numeraire, 65

objective probability, 114
observation, 188
order pair, 5
acyclic, 5, 179
asymmetric, 9
extension, 5, 17
quasi-acyclic, 8, 22

Pareto rationalizable, 145
partial observability, 187
partial order, 2
path, 10, 154
permutation matrix, 92
persistence, 140
persistence under contraction, 144
persistence under expansion, 144
polyhedral cone, 110
polynomial, 180
polynomial inequality, 138
Positivstellensatz, 181
preference
additive separability, 64
additively separable, 64
homothetic, 60
separable, 64
preference relation
objective expected utility, 115, 117
probabilistically sophisticated, 121
strict, 3, 96
subjective expected utility, 122, 124

preference profile, 154
preference relation
continuous, 3
Euclidean, 164
locally nonsatiated, 3, 37, 51
monotonic, 3, 25, 124
monotonic with respect to order pair, 25
rational, 3
representation, 4
smooth utility representation, 4
strict, 144
strictly monotonic, 3
uniformly monotonic, 126
prior, 116
probabilistically sophisticated, 121
production function, 83
production set, 87
profit function, 90
psychiatric patients, 79

quantifier elimination, 138, 175
quasiconcave, 4
quasilinear utility, 65

random decision selection, 32, 79
random utility, 96
rate of violation of GARP, 78
rationalizable, 91, 189
additively separable, 64
convex, 168
egalitarian (maxmin), 150
Euclidean, 164
expected utility, 109, 115, 117
g, 150
majority rule, 159
*n*-unanimity, 160
Nash bargaining, 150
Pareto, 145, 159
probabilistic sophistication weakly, 121
production dataset, 87
quasilinear, 65
random utility, 96
satisficing, 23
stable matching, 154
strongly, 15, 47
strongly Nash, 143
strongly pair, 168
subjective expected utility, 122
team, 145
unanimity rule, 159
utilitarian, 150, 162
Walras, 136
rationalizable (cont.)
  weakly, 16, 35
  weakly Nash, 144
  zero sum, 147
real closed field, 138
regular, 109
regularity, 96, 109
relation symbols, 188
relative theory, 192
revealed preferencelinear space, 46
  order pair, 16, 36, 54, 115
  order pair (strong), 48, 58
revealed preference graph, 53
rich, 195
risk aversion, 117
risk-neutral prices, 117
SARP, see strong axiom of revealed preference
semidefinite programming, 181
separating hyperplane theorem, 11
states of the world, 116
status quo, 192
stochastic frontier analysis, 94
strategy profile, 143
strict preference, see preference relation
strictly quasiconcave, 4
strong rationalization, 15
strong axiom of revealed objective expected
  utility, 118
strong axiom of revealed subjective expected
  utility, 122
strong axiom of revealed preference, 48, 51,
  58, 130, 176
strong rationalization, 47
structuralism, 197
subjective expected utility, 122
subjective probability, 121
submodular, 2, 57
subrationalizable, 28
substitutability, 58, 68
superdifferential, 12
supergradient, 11, 182
supermodular, 2, 57
Szpilrajn’s Theorem, 7
Tarski–Seidenberg Theorem, 138, 175
Theorem of the Alternative, 12, 42, 43, 47, 86,
  87, 91, 102, 116, 148, 156, 167, 170, 171,
  175
theory, 189
transitive closure, 5, 24, 37, 78, 146, 160
type space, 147
unanimity rule, 159
UNCAF, see universal negation of conjunction
  of atomic formulas
uniform monotonicity, 126
unit vector, 3
universal, see universal axiom
universal axiom, 180, 184, 186
universal negation of conjunction of atomic
  formulas, 187, 191
unordered, 1
upper bound, 2
  greatest, 2
  least, 2
upper contour set, 4
  strict, 4
upper production set, 89
utilitarianism, 150
utility function, 4
  separable, 64
  smooth, 50
V-axiom, 17
Varian’s efficiency index, 73
vector, 2
verification, 176
vertex, 154
Walras’ Law, 130
Walrasian equilibrium, 136
Walrasian equilibrium price, 130
WARP, see weak axiom of revealed preference
weak axiom of production, 88
weak axiom of profit maximization, 88
weak axiom of revealed preference, 19, 35, 36,
  38, 46, 60, 61, 67, 73, 74, 76, 137, 179,
  191, 195
weak order, 2
weak rationalization, 16
  demand, 35
  in choice, 16
weakened weak axiom of revealed preference,
  24
weakly rationalizable, 35
well-ordering, 29
Zorn’s Lemma, 2, 8, 30