

Index

- act, 123
- act-dependent probability representation, 126
- Afriat inequalities, 40, 64, 84, 118, 123, 138, 139, 177
- Afriat's efficiency index, 72, 78
- Afriat's Theorem, 40, 139, 177, 178
- aggregate excess demand function, 130
- aggregation rule, 159
- Allais paradox, 115, 127
- allocation, 136
- atomic formula, 191
- axiom, 191
- axiom of revealed stochastic preference, 96
- axiomatization, 191
 - UNCAF, 191

- balanced, 118
 - doubly, 122
- bargaining
 - egalitarian, 150
 - Nash, 150
 - utilitarian, 150
- Bayesian environment, 148
- beliefs, 116
- binary relation, 1
 - acyclic, 5
 - antisymmetric, 1
 - asymmetric part, 1
 - completeness, 1
 - convex, 4
 - extension of, 1
 - irreflexive, 1
 - linear order, 2, 159
 - partial order, 2
 - quasitransitive, 1, 17, 18, 22, 27
 - reflexive, 1
 - strict extension of, 1
 - strict part, 1
 - strictly convex, 4
 - symmetric, 1
 - symmetric part, 1
 - transitive, 1
 - weak order, 2
- Birkhoff–von Neumann Theorem, 92
- bistochastic matrix, 92
- Block–Marschak polynomials, 97
- blocking pair, 154
- Bronars' index, 75

- canonical conjugate, 22
- certainty inclusive, 126
- chain, 2
- choice function, 143
- complementarity, 57, 58, 66
- complete markets, 117
- component, 2
- comprehensive set, 25, 87
- condition α , 20, 96, 144, 195
- condition β , 20, 144
- cone, 60, 110, 180
- congruence, 18, 179, 191, 194
 - partial, 28
- conic independence, 92
- constant act, 124
- constant returns to scale, 90
- consumption dataset, 35, 60
- convex cone, 110
- convex hull, 109
- core, 140
- correspondence, 3
- cost rationalization, 83
- Cournot oligopoly, 177
- critical cost efficiency index, 73, 81
- cycle, 154

216 **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
- \mathcal{L} -dataset, 188
 \mathcal{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

- majority rule, 159
- matching, 154
 - stable, 154
- maximal element, 2
- maxmin, 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

218 **Index**

- 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 preference
 - general budget sets, 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
- team rationalizable, 145
- 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