

SUBJECT INDEX

- a planned economy 1, 4, 92, 232, 438, 452, 475
- A pragmatic social choice approach 144, 146
- adaptive control 24, 64, 85, 107, 193, 371, 397, 402, 461, 477
- adaptive optimal control 354, 379
- agenda for future research 478
- algorithms 8, 10, 12, 15, 22, 68, 86, 90, 94, 104-105, 110-113, 117-118, 179, 184, 478
- An ideal model 461, 474, 476
- an intertemporal allocation of resources 1, 148, 152-153
- an optimal growth program 1-6, 10-11, 15, 23, 25, 28, 31-32, 37, 41, 43, 54-55, 58-60, 65-67, 70, 79, 81, 116, 120, 129, 145, 160, 162, 172, 175-176, 203-204, 208, 224, 244, 253, 290-291, 315, 333, 338, 354, 369, 375-378, 402, 409, 414, 440, 445, 454, 461, 463-464, 469-470, 475, 477-479
- appropriate growth model 19
- appropriate modelling structure 116
- appropriate SDR 22, 62, 120, 145-146
- approximation methods 111
- Arrow 5-6, 10, 16, 40, 78, 175, 292, 377, 434, 458
- Australian economy 25-26, 203-205, 208-209, 214-216, 218, 220, 230-231, 288, 300, 306, 308, 311, 317, 324, 381-382, 470
- Australian Model 204
- Australian model 218-219, 228, 309, 390
- Bayesian learning 109, 371-375, 379, 396-400, 467
- benefits of economic growth 333, 335, 353, 366
- Boadway and Bruce 54, 62, 67, 78, 137, 338, 350, 372, 441, 445, 477
- boundary 7, 10, 42-43, 48, 71, 86, 111, 176, 187-188, 190, 204, 208-209, 219, 227, 248-249, 256, 291, 296, 338, 340, 346, 353, 355-356, 378, 381, 390, 393-394, 398, 402, 430, 437, 449, 470
- Burmeister and Dobell 4, 10, 15, 17-18, 94-96, 98-99, 204, 242, 244, 259, 415, 458
- calculus of variations 7
- capital accumulation 3, 6, 34, 42, 48, 94, 135, 164, 174, 189, 203, 205, 207, 221, 228, 241, 243, 253, 262, 339, 341, 351-352, 357, 443, 458, 471
- central planning 11, 64, 71, 91, 114, 174, 176, 185, 238, 245, 433
- Chakravarty 5-6, 11, 16, 53, 62, 66, 68, 89, 94, 97, 152, 160, 227, 229, 242, 252
- Chaos Model 113, 371, 408-409, 412, 415, 473
- characteristics roots 39, 49, 126
- choice of SDR 62, 120-122, 131-132, 134, 143-150, 467
- Climate change 19, 26, 180, 194, 285-294, 297-298, 304-305, 307, 309, 311, 313-314, 323-325, 392, 462, 472
- climate-growth model 26
- climate-economic system 26, 286
- closed loop control 85, 467, 475
- Comparative Dynamics 17, 32, 215
- Comparative static and dynamic analysis 40
- complex dynamic models 20, 79, 86, 112-113, 116, 414-415, 465
- complex dynamics 21, 27, 64, 75, 78, 107-108, 112, 155, 193, 369-371, 407-408, 412, 414-415, 473-474
- computation of optimal growth models 22, 68, 86, 112, 118
- computational 22, 63, 68, 74, 79-80, 82, 86, 90, 93, 107, 113-114, 171, 222, 271, 338, 355, 369, 374, 432
- Computational aspects 10, 121, 152
- computational optimal growth economics 68, 80-81, 83, 85, 87, 89, 91, 93, 95, 97, 99, 101, 103, 105, 107, 109, 111, 113, 115, 117
- compute optimal sustainable growth 9
- computer programming 22, 476
- contemporary 11, 19, 28, 64, 121, 146, 286-287, 461, 463, 467
- contemporary issues 8, 461
- contributions and limitations of the study 28
- control discretisation 86

- controllability 11
 convergences and divergences 239
 convexity 39, 84
 Cost-benefit analysis 10, 16, 26, 28, 38, 59,
 92, 173, 178-179, 300, 309, 333, 337-338,
 345, 350, 353, 363, 399, 427, 440-446,
 448-452, 454, 469
 cost-benefit analysis model 386
 costate (dual) variables 36
 costs and benefits of economic growth 149,
 333, 335, 363, 469
 costs of economic growth 292, 334-335, 366,
 475
 country models 20

 define and measure social welfare 9
 development indicators 55
 development objectives 221
 development planning 6, 16, 25, 148, 221-
 222, 231-232, 371, 433, 437, 440
 DICE model 19, 89, 137, 255, 286, 290-292,
 296-297, 299-301, 309, 311, 314-315, 317,
 323-325, 472
 differential equation 34, 39, 41-42, 44, 49,
 82-84, 86, 110, 125, 135, 158, 163-164,
 255
 Discounting 54, 59, 61, 67, 72, 95, 114, 119-
 123, 126, 128-129, 138, 145-148, 166, 175,
 209, 215, 243, 291, 377-378, 430, 447, 452
 discrete 20, 37, 76, 83-84, 86-90, 93-94, 110-
 111, 114, 118, 184, 189, 205, 299, 397,
 399, 430
 disequilibrium 2, 107-108, 157, 174, 243,
 333, 350, 354, 363
 Dixon 104-105, 265
 dual instability 40, 98, 465-466
 dynamic efficiency 9-10, 33, 71, 461
 dynamic equilibrium trajectory 41
 dynamic input-output model 96-98, 101, 428
 dynamic optimisation 12, 15, 20, 22, 25, 37,
 53, 81, 90, 93, 96-98, 107, 112, 120, 133,
 135, 171, 174, 178-180, 190, 222, 227,
 248, 286, 288, 350, 387, 408, 412, 428,
 430, 441, 462, 466
 dynamic optimisation problem 3, 102, 428,
 430-431
 dynamic paths 6, 33, 38, 91, 400

 dynamic programming 7, 86, 110-111, 432,
 437
 dynamic system 38-40, 46, 50, 78-79, 82,
 102, 107, 109, 112-113, 125, 127-128, 160,
 164, 193, 384, 399, 412, 414-415, 457, 474
 dynamic trajectories 2, 94

 ecological constraints 8, 12, 21, 32, 64, 73,
 232, 277, 334, 338, 351, 464-466, 477
 ecological economics 72, 194, 333-334, 408,
 473
 ecological optimal sustainable growth
 model 27
 ecology 12, 20-21, 26-27, 72, 75, 152, 180,
 334, 337-339, 354, 469
 economic organisation 5, 11, 15, 17, 65, 243
 Economic planning 6, 11, 53, 58, 89, 202,
 221, 243, 433, 439
 ecosystem dynamics 27
 ecosystem economics 72, 151, 334, 363
 ecosystem resilience 75, 363
 efficient intertemporal allocation 1, 160, 173
 elements of an optimal growth model 10, 19,
 24, 82, 114, 242, 466-467, 470
 empiricism 18, 42
 Endogenous Growth Theory 14, 18, 39, 65,
 190, 219, 230, 240, 252, 276, 352, 400,
 427, 454-456, 458-459, 471-472
 endogenous technical progress 10, 26, 175,
 179, 253-254, 256-258, 274, 286-288, 291,
 313-315, 317, 319-320, 322-324, 352, 398,
 406, 455, 458-459, 471, 476
 Endogenous Variables 101, 107, 183, 263,
 297
 environment 10-13, 20-21, 23-24, 26-27, 32,
 55, 61, 64, 66-67, 72-76, 78-79, 93, 95,
 114-115, 117, 120-121, 143-145, 147-149,
 151-155, 157-159, 169, 171-175, 177-181,
 183, 185, 187, 189-191, 193-194, 232, 237,
 239, 277, 285, 287-292, 298, 300-301, 306-
 309, 311, 313, 317, 319-320, 322-323, 325,
 333, 339, 348, 350-353, 356, 363, 365,
 369-370, 375-376, 396, 398-400, 406-409,
 412, 415, 438, 444, 446, 449-450, 459,
 462-466, 469, 471-472, 474-479
 Environment-Economic Interactions 114,
 194

- environmental considerations 11
- Environmental economics 7, 72, 143, 151, 153, 155, 157, 159, 161, 163, 165, 167, 169, 171, 173, 175, 177-179, 181, 183, 185, 187, 189, 191, 193, 195, 197, 286, 353, 471
- evolutionary economic model 174
- existence 8-9, 38-39, 43, 51-53, 58, 65, 71, 78, 85, 91, 95, 100-101, 103, 105, 112-113, 120, 123, 160, 184, 190, 193, 201-203, 208, 218-219, 243, 260, 275, 288, 315, 354, 362, 376, 398, 413-414, 428, 430, 450, 457, 461, 473-474, 476
- Exogenous Variables 101, 182, 217, 263, 296
- expected value 77, 112, 372, 377-378, 381, 384-386, 388, 394
- factors of economic growth 18, 459, 471
- final conclusions 28
- financial constraints 11
- Findings in optimal growth 463
- finite horizon optimal growth model 37, 59, 62
- first order conditions 35-36, 42-44, 48-49, 89, 124-125, 127, 162-163, 167, 246
- forecasting future growth 91
- forecasting the future of the economy 8
- Fox, Sengupta and Thorbecke 10-11, 17, 19, 39, 53, 55-56, 58, 68-69, 77, 86, 94, 97, 100, 105, 107-108, 146, 180, 204, 218-219, 221-224, 227, 229, 231, 242, 378, 385, 391, 433-434, 439, 474
- game theory models 67, 93, 100
- GAMS 17, 39, 90, 105, 113, 117-118, 184, 190, 208, 219, 225, 227, 248, 256, 265, 275, 299, 354-355, 362, 371, 381, 390, 394, 402, 413
- general equilibrium models 17, 28, 86, 93, 100, 104, 243
- GHG economy 290, 323
- global development perspectives 237
- global growth models 20, 25, 237-238, 240, 242, 244, 246, 274-277, 462
- global maximum 36
- global stochastic economic growth model 371
- global welfare economics 25, 237
- globalisation 25, 175, 237-241, 251-252, 274, 276, 476
- globality of solutions 9, 461
- golden age 33, 73, 155
- gradient search methods 86, 88
- green national accounting 37
- growth economics 1-2, 4, 8, 11-15, 18, 22-23, 25, 27-28, 61, 82, 93, 95, 99, 123, 201-203, 230, 241, 270, 274, 373, 455, 459, 461-463, 470-473, 476, 478
- growth theories 10, 13, 17-18, 20, 27, 38, 64, 68, 202, 216, 220, 241, 277, 458, 462
- Hamiltonian 17, 35-38, 43, 48, 72-73, 124, 127, 131, 155, 157-158, 161-162, 203, 376, 443, 457
- Heal 6-7, 10-12, 16, 20, 23, 53, 58, 62, 73, 123, 145-147, 152, 158, 161, 166, 169, 172, 175-176, 336, 338, 351, 440, 449, 463
- heterogenous 10, 83, 95, 221-222, 259, 271, 465
- Huang and Cai 187, 189-190, 322, 406
- human capital 65, 189, 195, 230, 256, 351, 456, 458-459, 471
- human development 67, 157, 366
- Hurwicz-Karush-Kuhn-Tucker theorem 87
- Indian economy 19, 25, 96, 203-204, 221, 231, 387, 389-390
- indicators 55, 58-59, 79, 136, 156-160, 175-176, 216, 338, 345, 356, 397, 415, 434, 442, 466-467, 469, 478
- infinite horizon equilibrium 50
- input-output models 93, 100, 116, 428
- Institutional and strategic aspects 11
- institutional aspects 7
- inter-generational equity 27
- intertemporal efficiency 1, 5
- intertemporal valuation of resources 5, 72, 91
- Intriligator 3-7, 10, 16, 68, 83, 96-97, 190, 277, 432
- investment planning 68-69, 95-96, 221, 223-226, 228-229, 386, 444, 459, 476
- invex property 39

- Islam 8, 10, 12, 22, 26, 32, 34, 36, 38-40, 42, 44, 46, 48, 50, 52, 54-56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84-86, 88-90, 92, 94, 96, 98, 100, 102-104, 106, 108, 110, 112, 114, 116, 118, 120-121, 144-145, 147, 152-154, 156, 158-160, 162, 164, 166, 168, 170, 172-174, 176-178, 180, 182, 184, 186, 188, 190, 192-194, 196, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 286, 288, 298, 307, 309, 313, 334, 337-338, 351, 355-356, 363, 386, 396-397, 407, 439, 442, 451, 462, 464, 466, 468, 470, 472, 474, 476, 478
- issues in economic growth 1, 8, 18
- joint optimisation 104-105, 264
- Kendrick 10-11, 17, 53, 68, 86-87, 89-90, 94-95, 105, 107, 184, 190, 201, 204, 208, 299, 370, 413, 454, 468
- knowledge economic 175, 258, 352, 399, 472, 476-477
- Koopmans 13, 53, 61, 87, 183, 240, 244, 428
- Laffont 67, 76, 369
- learning 64, 76, 107-110, 118, 339, 369, 372-375, 378-379, 381-382, 394, 396-400, 402, 406-407, 413, 467, 477, 479
- legal framework 65
- limits to growth 170, 187, 193, 335, 412, 415, 477
- long-term dynamics 25, 33
- macroeconomic 16, 67, 100, 105-108, 116, 232
- macroeconomy 34
- Mahalanobis 17, 19, 96, 221-231, 385, 389, 391, 437, 471
- Mahalanobis Model 222
- Mahalanobis Model: 222
- Manne 103-105, 144, 181, 237-238, 248-249, 256, 265, 376
- Maslow's theory 55
- mathematical model 7, 18, 26, 31, 155, 174, 240, 286, 407, 462
- mathematical programming 15, 87-88, 90, 93, 100, 104-105, 110, 118, 227, 264, 454
- mathematical programming methods 4, 87, 110
- maximisation 6, 8, 14, 19, 33, 35-36, 43, 48, 55-58, 70, 72, 77, 88, 97, 124, 127, 148, 160, 162-163, 167, 183, 187, 204, 207-208, 223, 225, 227-229, 242, 245, 247-248, 264, 291, 334-335, 338, 351, 354, 357, 375, 377-378, 381, 385, 406, 409, 428-429, 437-438, 440-444, 451, 454, 457, 463-465, 468-469, 473
- maximum principle 7, 86, 111, 118
- maximum rate 69, 95
- measurement of social welfare 55, 445
- Models for Optimal Growth 6, 69
- models under uncertainty and risk 20
- multi-criteria models 6, 93, 100
- multi-regional 20, 25, 239, 241, 259-261, 265, 267
- multi-regional growth model 240, 259
- multi-sectoral 95, 97-100, 107, 115, 117-118, 160, 232, 465
- multi-sectoral optimal growth model 83, 443
- multiple equilibria 39, 65, 219, 275, 362, 366, 459, 474
- Negishi algorithm 28, 103-104, 427, 460
- neoclassical 10, 17, 24, 33, 38-39, 48, 64-65, 95, 98-99, 114, 161, 170, 174, 176, 183, 185, 193, 202, 207, 216, 219-220, 229, 231, 240-241, 245, 251, 275-277, 352, 428, 430, 438, 455, 457-459, 472
- Nordhaus 11, 73, 89, 103-105, 136, 143, 149, 170, 177, 181, 183-184, 194, 204, 209, 238, 249, 255-256, 265, 274, 289-292, 296, 299, 324, 353, 370, 407, 412, 460
- normative planning model 148
- numerical implementation 7, 26, 85, 87, 94, 117, 179, 257, 265, 323, 337, 354, 372, 376, 454
- numerical optimal growth model 7, 15, 24, 38, 42-43, 48, 118, 120, 135-136, 145, 172, 202-205, 207, 217, 230, 242, 274, 335, 468
- numerical optimal program 31

- Numerical solutions 7, 79
- one-sector growth model 33
- operational approach 14, 98, 131, 143, 176, 246, 376, 468
- operational feasibility 12, 396, 476-477
- operational method 54, 120
- optimal consumption and saving 2
- optimal control 7, 12, 15, 22, 25, 33, 35, 37, 60, 78, 82-90, 94, 102, 107, 109-110, 117-118, 157, 183-184, 204, 227, 265, 299, 319, 363, 372-374, 399, 467, 478
- optimal control method 4, 7, 20, 22, 415
- optimal control theory 7, 11, 15, 33, 35, 64, 184, 227, 245, 248, 291, 299, 370, 439, 470
- optimal convergence 238, 265, 273
- optimal design 11, 72
- optimal development plan 4, 470
- Optimal Economic Development 220-221, 225
- optimal economic growth 1, 4, 6-8, 15, 21-23, 25, 27, 33, 53, 68, 75, 92-94, 113, 120, 128, 145, 181, 205, 208-209, 238, 241, 253, 261, 290, 338, 369-370, 439, 443, 450, 461-464, 473-474, 476, 479
- optimal growth economics 1-4, 9-10, 12-18, 20-21, 25, 27, 31, 64-65, 68-70, 72-73, 79, 123, 135-136, 146, 153, 194, 201, 252, 370, 427, 461-465, 467, 469-471, 473, 475-479
- optimal growth model 4-19, 22-28, 31-34, 36-40, 42-43, 48, 50-56, 59-62, 66, 68-74, 77-83, 85-91, 93-96, 99-103, 105-109, 111-121, 123, 126, 131, 138, 145, 148-149, 153, 155-162, 166-170, 172, 175-178, 181, 185, 191, 193, 201-203, 207, 209, 215-221, 223, 229, 231, 238, 240, 242-245, 247, 256-257, 260, 265, 267, 270, 274, 285-286, 290-291, 324, 333, 335-337, 369-376, 378-379, 381, 385-386, 390, 392, 396-397, 408, 410-412, 427, 429, 432-433, 438, 440, 442, 454, 456, 461-471, 474-476, 478-479
- optimal growth program 4, 8-9, 11-14, 21, 28, 38, 42, 62, 66-67, 72, 77-78, 81, 83, 91, 152, 159-160, 189, 193, 203, 209, 242-244, 253, 290, 370-371, 373, 376-378, 387, 390, 407, 410, 431-432, 437, 441, 443-444, 464, 466-468, 470, 477
- optimal investment 98, 224-226, 231, 360, 387, 391
- optimal level of consumption 57
- optimal savings 1
- optimal social welfare 4, 78, 152, 173, 187, 230, 257, 350, 384, 430, 434, 446, 467
- optimal stochastic growth planning 386
- optimal sustainable growth 1, 8-9, 24, 32, 73-75, 79, 81, 114, 117, 150-156, 159-161, 166, 168, 171-178, 180-181, 183, 185, 187, 189-190, 193-194, 337-339, 354, 365, 376, 396-397, 399, 403, 443, 465, 474, 476-477
- optimal sustainable growth programming 1, 171, 177, 193, 415
- optimal techniques of production 221
- optimal time planning horizon 89
- optimality criteria 5, 7, 33, 42, 52, 58-59, 160, 166, 172, 175, 193, 207, 242, 333, 336, 354, 377-378, 414, 434, 464, 474, 478-479
- Parameters 32, 42, 47, 62, 74, 76, 85, 91, 95, 102, 111, 134-136, 140, 142-143, 145-146, 155, 176-177, 180, 185, 188, 190, 201, 203-204, 208, 212, 215-218, 224, 226-227, 229-230, 241, 245, 249, 254-258, 261-263, 266-267, 270, 276, 289-291, 296-297, 299-300, 317, 346, 349, 354-357, 365, 372-373, 375, 378, 381, 384, 387-388, 390, 400-402, 408-409, 452-453, 463-464, 469, 478
- Pareto optimisation 103-104
- phase diagram 40-41, 44, 46, 168
- planned economy 71, 92-93, 479
- Planning Horizon 9, 32, 36, 53-54, 59-60, 62, 102, 177, 183, 204, 222, 243, 245, 291-292, 315, 338, 354, 377-378, 402, 406, 411, 441, 461, 470
- policy Planning 16, 91, 112, 116, 179-180, 313, 350, 371, 438, 468
- policy planning problem 83, 116
- Policy Variables 110, 116, 204, 245, 264, 297, 300, 308, 319, 354, 436-437, 466
- Pontryagin principle 86, 260
- possibility of unsustainability 166, 363
- practical social choice 120

- Production function 39, 48, 83, 94, 98-99, 101, 105, 161, 181, 189, 197, 205, 219, 221, 223, 225, 229, 253, 256, 298, 311, 314, 340, 347, 351, 356, 400, 428-430, 456, 458
 programming framework 24, 227
 project planning 16, 24, 69, 93, 99, 178, 221, 427, 440-441, 443-445, 454, 471

 Ramsey 1-2, 5, 9-10, 28, 56, 61, 94, 123, 135, 145, 160, 183, 205, 217, 220, 290, 335, 370, 478
 rationality 35, 55, 70, 76, 274, 307, 369, 396, 398
 relationships between optimality and sustainability 9
 Riccati equation 107
 risk attitude 369, 372
 Ruth-Harwiz theorem 47, 276

 Samuelson 4, 11, 16, 54, 56, 244, 264, 415, 428-429, 434
 SCOM 90, 118, 176, 476
 SDR 22-23, 61-62, 65, 71, 75, 120-122, 131-140, 143-150, 173, 242-243, 260, 274, 302, 307, 317, 325, 377, 408, 414, 451
 SEE system 27, 151-157, 160, 163, 166-171, 174-176, 178, 180, 197, 333-334, 336-340, 344, 346-348, 351-352, 354-357, 362-363, 365-366, 396-403, 406, 408, 410, 414-415, 438, 440, 454
 SEEOG model 338-340, 346, 349, 351, 355-357, 360, 362-363, 365, 474
 Sen 7, 19, 54-55, 65, 70, 78, 131, 137, 146, 157, 160, 172-173, 175, 201, 231, 238, 277, 292, 325, 339, 372, 433-434, 442
 Sensitivity Studies 215, 270
 separate and practical discipline 13, 477-478
 shadow prices 3, 35, 40-41, 67, 71, 91-93, 129, 133, 135-136, 149, 166, 185, 215, 258, 291, 296, 360, 415, 431-432, 440, 444, 448-450, 452, 466
 social choice 2-6, 13, 22, 27, 33, 35, 54-56, 64, 67, 69-70, 77-78, 91, 102, 104, 119-120, 122, 136, 144, 147, 149, 153, 162, 171-173, 175, 180, 187, 189, 193, 202, 208, 222, 225, 228-229, 231, 238, 246, 248, 290, 292, 324-325, 333, 336-339, 350-351, 353, 357, 365-366, 370-372, 374, 381, 385, 387, 396, 399, 402, 409, 414-415, 428, 430, 433-435, 438, 440, 442, 444, 448, 462, 466-467, 469-470, 473, 476, 478-479
 Social Choice Criteria Under Uncertainty 399
 social choice under uncertainty 27, 78, 369
 social discount rate 22, 32, 60-61, 119-120, 135, 147, 173, 178, 227, 242, 377-378, 440, 444, 448, 451-453, 466, 479
 social interest rate 132
 social organisation 15, 244, 334, 431
 social planner 35, 74, 183, 189, 205-206, 253, 265, 290, 295, 299, 338
 social welfare 1-3, 5, 12, 14, 19, 33, 37, 54-56, 59, 66-67, 69-71, 81, 108-109, 131, 137, 155-158, 160, 173, 177, 180-181, 183, 189, 193, 202-203, 205, 215, 218, 225, 241-242, 245, 252-253, 271, 290, 292, 333, 335, 337-339, 351, 363, 396, 406, 437-442, 444-445, 463-464, 467, 469, 471, 475, 478-479
 social welfare function 3-5, 7, 9, 35, 54-56, 58-60, 67, 69-70, 75, 77-78, 92, 104, 114, 131, 137-138, 147, 149, 155, 172, 179, 183, 205, 215-216, 230, 242, 245-246, 248, 251, 253, 264, 270, 291-292, 333, 338-339, 350-351, 377-378, 381, 391, 399-400, 415, 434-436, 438, 442, 445, 463
 Social welfare optimum 54
 social welfaristic 231
 social welfaristic 67, 70, 231
 social welfaristic elements 67, 179
 socially desirable 18, 446, 448
 society's intertemporal choice 2
 socio-economic-ecosystem 151
 software 5, 10, 114
 Solow 4, 7, 11, 16, 56, 61, 98, 415, 428-429, 455
 solution algorithm 5, 13, 21, 69, 85, 94, 104-105, 203, 219, 265, 276
 specification of an optimal growth program 32, 291, 463, 479
 stability 8-9, 11, 33, 38-40, 44, 46-47, 49, 56, 64, 71, 85, 91, 103, 107, 112, 125-128,

- 155-157, 164, 166, 172, 174, 184, 190, 203, 208, 220, 232, 260, 275-276, 288, 334, 337, 366, 376, 385, 413-415, 461, 468-469, 474
- stable equilibrium growth 41
- states of the economy 77, 381
- steady state 32-33, 38-40, 50, 52, 60, 62-65, 75, 78, 86, 88-89, 93, 111, 125, 132, 164, 168-169, 177, 180, 218, 246, 251, 253, 257, 260, 275, 288, 302, 413-414, 457, 459, 464, 468
- steady-state 42, 203, 218-220
- Sto-SMHC model 396, 399-403, 406-407
- stochastic 6, 10, 13, 27, 69, 76-78, 81, 86, 88, 93, 107-112, 121, 132, 147, 154, 177, 179, 369-373, 375-379, 381-382, 384-388, 390-394, 396-400, 402-403, 407, 413-415, 466-467, 469-470, 473, 476
- stochastic control 109-110, 112, 370, 440
- stochastic growth economics 27, 76, 370-371
- stochastic programming 110-112, 116, 229, 372, 374, 378-379, 389-390, 393, 413-414
- Stochastic sustainability 176, 309, 372, 375-376, 379, 397, 413
- stochastic welfare function 111
- structure of optimal growth over 33
- summary and overview 28
- survivability 73, 336, 412
- sustainability 1, 7-10, 12-13, 24, 26-27, 37, 60, 67, 72-74, 79, 91, 113-115, 120, 152-160, 166, 168-181, 183, 187, 189-191, 193, 197, 277, 288, 313, 319, 323-324, 333-334, 336-338, 352-354, 357, 363, 365-366, 375-376, 388, 403, 407, 412-413, 438, 451, 461-462, 464-465, 468-469, 473-474, 476-479
- sustainable development 152, 197, 336, 366, 389, 459, 479
- sustainable ecological development 26
- sustainable economic growth 12, 15, 24, 27, 73, 152, 174, 178, 180, 194, 306, 337, 412, 462, 471, 473-474
- sustainable growth models 20, 23-24, 74, 81, 113-115, 117-118, 152, 156, 173, 177, 179-180, 193, 396, 459, 471, 476
- Taylor expansion 51
- technical progress 18, 27, 42, 65, 76, 90, 94-95, 101, 107, 121, 161, 169-170, 174-175, 180-181, 185, 189, 195, 207, 221, 241, 247-248, 252-258, 262, 271, 277, 286-287, 298, 313-315, 317, 319, 322-324, 334, 339, 348, 351, 357, 373, 380, 393, 455-456, 458, 471
- terminal time 33, 57-58, 63, 431
- the contemporary issues 2, 12-13, 478
- the optimal rate and valuation 3
- the social welfare approach 54, 137
- time preference 7, 22, 42, 54, 60-61, 79, 119-120, 122, 131-133, 135-139, 143-149, 160-161, 169, 173, 182, 189, 207-209, 215-217, 221, 223, 241, 243, 249, 270, 274, 297, 336, 349, 442, 444, 453, 463, 478
- Tinbergen 94, 180, 204, 237-238, 350, 433, 435-437, 444
- transversality conditions 7, 9, 33, 54, 59-60, 62, 84, 161, 176, 208-209, 291, 346, 353-356, 415, 461
- Turnpike 31, 51-53, 64, 79, 91, 93, 95, 160, 203-204, 219, 221, 275, 288, 362, 431
- two-sector models 95-96
- uncertainty and risk 27, 76
- uniqueness 8-9, 38-39, 58, 78, 85, 91, 103, 105, 112-113, 123, 202-203, 219, 275, 288, 334, 413-414, 461, 476
- utility function 3, 32, 34-35, 42, 54, 57-58, 78, 111, 138, 173, 181, 189, 205, 222, 242, 245, 259, 339, 372, 464
- validation of the model 82, 90
- value judgement 15, 33, 63, 65, 93, 120, 131, 139, 143, 145-146, 149-150, 174, 180, 205, 222, 230, 292, 335, 350-351, 366, 431, 433, 442, 464, 470, 475-476, 478-479
- van den Bergh model 351
- Variables 3-4, 17, 24-25, 32-34, 37-38, 40, 42-43, 47, 54, 62, 64-65, 71, 74, 82-83, 85, 87-88, 91-92, 95, 102, 105-107, 109, 124, 126, 128, 131, 134, 163, 171, 174, 176-177, 180, 182-183, 185, 188, 190-191, 195, 201-204, 206, 208-209, 216, 218-219, 222, 224, 226-227, 229-230, 241-242, 245, 247, 249, 251, 255-263, 267, 271, 289, 291,

- 296, 298-301, 305-306, 311, 313, 317, 319,
323-324, 338, 346, 348, 350, 354-357, 360,
363, 365-366, 373-375, 377-379, 381, 384,
403, 406, 408-409, 411, 430-431, 435-437,
453, 457, 459, 463-464, 469, 472, 477-478
- variational programming 111
- vector optimisation 56, 93, 103, 105, 114-
115, 117, 179, 264, 386, 436, 438
- von Neumann 4, 18, 33, 52, 56, 78, 104, 377,
381, 399, 428
- von Neumann 1945 4, 427
- Weierstrass theorem 38, 88, 103, 123, 184,
190, 208, 275, 299, 362, 413, 430, 458
- welfare and policy implications 21
- welfare criteria 58, 179, 439, 442
- Welfare economic analyses 10
- welfare economics 1, 9, 16, 22, 31-32, 55, 67,
70, 76, 116, 119, 151-152, 172, 231, 238,
241, 271, 292, 338, 357, 365, 369, 376,
378, 396, 402, 409, 433-434, 442, 466,
476-477
- welfare economics framework 66, 178, 203,
277
- welfare maximising 1, 12, 15, 19, 70, 132,
237
- welfare maximising global growth 238
- well-being 56, 67, 156, 335
- world economy 21, 25, 243, 396, 472