

## *Subject Index*

- activity compensation, 146
- Ädel Reform, 343–344
- adoption, of orphans, 69–70
- adult children, parents' proximity to;  
  *See* parents' proximity, to adult children
- age-health profiles
  - for sickness absence, 132–133
  - simulated cohort, 103–105
  - simulated cross-sectional, 103
- ageing population; *See* population ageing
- agent-based models, 33
- “aging in place,” 214
- all day surveillance, and improved health status, 394–396
- annual income, of private entrepreneurs, 126
  
- baby boomers, income of
  - from capital; *See* capital, income from
  - from earnings, 261–264
  - and labor force participation, 254–261
  - from pensions, 262, 264
  - and poverty, 285–287
  - relative income, 281–284
  - from retirements; *See* retirement income
- basic amounts (BA), 125, 146, 149–150, 165
- Bernoulli distribution, 65
- blue-collar workers, in private sector, 144, 166, 173, 176
  - occupational pension, 144, 149, 157
  - vs.* other labor market sectors, 155–157
- bootstrapping, 48
  
- calibration; *See also* parameters estimation of microsimulation models, 42
- capital gains
  - from other assets, 267–269, 271
  - on own home, 266–267
- capital, income from, 264–265
  - gains from other assets, 267–269, 271
  - gains on own home, 266–267
  - interest and dividend incomes, 265–266
  - interest paid on debts, 269–270, 272–275
  - losses, 269–271
- central government employees, 173
  - pension plans for, 149–150
  - vs.* other labor market sectors, 155–157
- cohabitation, 62–63
- compensations
  - activity compensation, 146
  - under disability pension scheme, 146–147
  - in early-retirement offers, 151
  - sick-leave compensation;  
  *See* sick-benefit systems
  - sickness compensation, 146
- complementary rule, 151–152
- conditional distribution, 33, 35, 38
- CORSIM model, 32
- cost
  - of borrowing, 311, 313–315; *See also* debts
  - of health care, 394–396
- counter-urbanization, 202
  
- Danell Commission, 210
- data problem, for microsimulation models, 37–39

- daytime activities, 345
  - expenditure on, 346
- death risks reduction, and improved health status; *See* health status, improved
- debts, 299, 317–318
  - disposable income and, 311–313
  - educational loan, 310
  - interest paid on, 269–270, 272–275
  - probability to stay in, 313–315
  - real estate investments and, 311–312
  - real rate of interest and, 312
  - taxable income and, 311
- demand-for-health model, 90–91
- demographic transition, 2–7
- Denmark, sickness-absence rate in, 127
- detached houses, 205, 208
  - demand for, 206
  - maintenance of, 212
  - owners of, 207
  - price of, 230
  - ratio to multi-family, 207
- disability insurance, and early retirement
  - compensations under, 146–147
  - data sources for analysis of, 162–164
  - empirical specifications for, 169–171
  - estimation of results of, 171–175
  - models of, 143–145, 159
    - simulation outcomes in, 173, 176
- disability pensions, 402
  - compensations under, 146–147
  - eligibility for, 145, 147
  - and improved health status, 392
  - rehabilitation from, 72
- disposable income, 32
  - and debts, 311–313
  - equalized, 254
  - and labor force participation, 260
  - replacement rate on, 276–279
  - and retirements, 260, 400–401
  - sickness benefits and, 16
- dwelling; *See* housing
- DYNACAN model, 33
- DYNASIM model, 32–33
- early-retirement
  - defined, 145
  - due to disability insurance; *See* disability insurance, early retirement
  - health status in; *See* health status in early retirement
  - models of, 143–145, 157–162
  - pension offers, 151–152
- earnings, 58, 80
  - income from, 261–264
    - self-employment, 262
- econometric specification, for sickness absence, 130
- economic growth rates, in Europe, 7–8
- education, 62, 73–74, 219
  - demand for, 227
  - higher, 171, 202, 204
- educational loan, 310
- efficiency-wage model, 116, 117
- emigrants, and pensions, 63–64
- emigration, 70; *See also* immigration
- employment rates, 8
  - females, 252–253
  - males, 252
- entrepreneurs, income of, 126
- EUROMOD model, 32
- Europe
  - economic growth rates in, 7–8
  - forms of tenure in, 207–208
  - gender gap, 2, 8
  - immigration, 6–7
  - life expectancy, 2, 5
  - migration in, 202
  - population pyramids in, 3
- European labor force surveys, 127
- expenditure, on old age care, 345–346
- FASIT model, 32
- female employment rate, 252–253
- fertility, 70–71
- financial wealth, 298–299, 301
  - dynamic random effects model for, 303–304
  - estimates for, 302
  - income distribution and, 302–303
  - two-part model for, 302
- flat rate tax, on capital income, 264
- foreigners' immigration, 396–398

- GDP; *See* gross domestic product (GDP)
- gender gap, 2, 8
- general equilibrium models  
and microsimulation models,  
dynamic, 39, 42
- generation database, 218
- geographical mobility, 20–21
- GEOSWEDE database, 61, 217–218
- GHK simulator, 98
- golden hand shakes*, 13
- government's role, in Swedish health care system, 325–326
- gross domestic product (GDP)  
and demographic structure, 2  
and expenditure  
on disability insurance, 152  
on health care, 327–328  
growth rates in Europe, 7–8  
per capita in PPS, 7
- growth rates, economic; *See also* Gross domestic product (GDP)  
in Europe, 7–8
- guarantee pension, 148, 284
- hazard-model approach, 159
- health and individuals longitudinal data and analysis (HILDA), 93, 162–163  
data for impatient care, 331, 333–334  
data for sickness absence, 128–130  
for health status estimation, 95–97
- health care, 82–83  
cost of, 394–396  
hospital care; *See* hospital care  
inpatient care; *See* inpatient care  
utilization of, 23–24
- health index (HI), 163–164
- health investments  
and demand-for-health model, 91  
and inpatient care, 330–331
- health-promoting behavior, and inpatient care, 330
- health-risk factors, 93
- health status, 15–16, 81–82, 122  
data for estimation of, 95–97  
and demand-for-health model, 90–91  
and dependent variables, 96  
in early retirement, 158–159, 163, 171  
proxy for, 143, 162  
evolution of, 92  
and explanatory variables, 90–91, 96–97  
improved, 390–396  
and all day surveillance, 394–396  
and cost of health care, 394–396  
and hospital care demand, 393–394  
and labor force participation, 391–392  
and old-age care, 394  
and social care demand, 394–395  
inclusion in microsimulation model, 86  
measuring, 92–94  
microsimulation models for, 37–38  
model estimation for, 97–102  
numerical modeling of, 92  
and policy concerns, 85  
and simulations, 102–107  
long-standing illness, 88–90  
self-assessed health, 87  
self-reported health, 87–88
- Heckit approach, 36
- Hedonic-price model, 117
- HILDA database, 128, 331
- HINK/HEK surveys  
cohabiting women in, 62–63  
as data source for SESIM, 61  
and LINDA, 61–63  
youngsters living with parents in, 62
- home help services, 344–345  
expenditure on, 346
- hospital care  
demand for, 393–394; *See also* cost of health care  
immigration status and, 397–398
- housing, 205–209, 212–215  
allowances, 209  
types of, 205–207  
and wealth, 40, 75–80, 201
- human capital, 2  
and demand-for-health model, 90–91
- idiosyncratic shocks, 92
- immigration, 70  
dependency ratio, 397–398  
in Europe, 6–7  
foreigners, 396–398

- hospital care, 397–398
- labor force, 202
- old age care, 398–399
- return immigration, 396–397
- inpatient care, 328–329
  - dynamic model for, 334
  - health investment and, 330–331
  - health-promoting behavior and, 330
  - HILDA data, 331, 333–334
  - imputation model for, 334
  - key data on, 329–330
  - simulations for, 336–340
  - year-to-year equations on, 334–336
- imputation equation
  - and sickness absence, 130
- imputation model, for inpatient care, 334
- income, 22–23, 58–59
  - of baby boomers
    - changes during 1975–2003, 254
    - from capital; *See* capital, income from
    - from earnings, 261–264
    - and labor force participation, 254–261
    - from pensions, 262, 264
    - and poverty, 284–287
    - relative income, 281–284
    - from retirements; *See* retirement income
  - disposable; *See* disposable income and old age care, 403–405, 407–408
- inequality, in wealth distribution, 295, 319
- inflation
  - and demographic structure, 2
- informal care, 346–347
- interest and dividend incomes, 265–266
- interest paid on debts, 269–270, 272–275
- inter-regional relocation model (model C), 216, 224, 227–228
- intra-regional migration model (model B), 216, 221, 224
  - parameter estimates of, 225, 226
- Kungsholmen study, 61
  - age distribution in, 361–362
  - description of, 359–360
  - transition in, 363–365
  - vs.* HINK/HEK, 361–365
- labor force participation, 8
  - of baby boomers
    - and disposable income, 260
    - female participation, 255
    - male participation, 255
    - and pensions, 258–259
    - recession and, 255, 257
    - stock prices and, 259–260
  - and improved health status, 391–392
  - and retirements, 400
  - and unemployment, 401–402
- labor-leisure tradeoff model, 116
- labor market
  - collective pension agreements, 148–149
  - income, 148–149
  - and parents' proximity, to adult children, 354–356
  - participation in, 122, 125
  - retirement from, 3, 17–20, 56, 157
- labor-market programs, 125
- lagged latent variables, 97, 99
  - for model estimation, 97–99
- “last in first-out” principle, 151
- LAW model, 32
- leisure time, 116
- Levnadsnivåundersökningarna; the Swedish level of living surveys (LNU), 93
- life-cycle model
  - for health, 15
  - for retirement, 16
  - of retirement, 17
- life expectancy, 2, 5
- lifetime budget-constraint approach, 158–159
- LINDA; *See* Longitudinal database of individual register data (LINDA)
- LNU; *See* Levnadsnivåundersökningarna; the Swedish level of living surveys (LNU)
- Local government employees, 173
  - pension plans for, 149–150
  - vs.* other labor market sectors, 155–157

- logit model; *See also* intra-regional migration model (model B); regional migration model (model A); tenure choice model (model D)  
 for explanatory variables, 62  
 multinomial, 45–46  
 standard, 169  
   estimation of results of, 171–173
- longitudinal database of individual register data (LINDA), 24, 162, 164, 177  
 cohabiting women in, 62–63  
 and HINK/HEK surveys, 61–63  
 household in, 61–63  
 longitudinal register data of, 37–38  
 in SESIM, 60  
 youngsters living with parents in, 62
- long-standing illness, 88–90  
 and Statistics Sweden Health Index, 94
- Lucas' critiques  
 for microsimulation models, 36
- Luxemburg employment study, 116
- “male bread winner model,” 253
- male employment rate, 252
- market value of houses, 307–309
- maximum-likelihood estimation, of latent health, 97–102
- maximum simulated likelihood (MSL) estimator, 114
- MICROHUS model, 33
- micro-simulation model, dynamic, 24–25; *See also* SESIM
- microsimulation models, dynamic, 31–34, 38  
 agent-based models, 33  
 calibration of, 42  
 and conditional distributions, 35  
 and critiques, 36  
 data problems during building of, 37–39  
 and general equilibrium models, 39, 42  
 for health status, 37–38  
 household in, 39–40  
 and interest paid on mortgages and loans, 38–39  
 macro indicators in, 39–40  
 market feedback, 39–40  
 and markets, 39–40  
 micro data in, 38, 41  
 micronunit, 31  
 parameters estimation of, 41–47  
 pension systems, 34  
 for probability of job and working hours, 36  
 and recursive model structure, 41  
 sampling theory, 33  
 simulators, 35, 46  
 submodels for target and non-target variables, 38  
 tax rules, 34  
 uncertainty, 48  
 validation of, 47–49
- microunit, 31
- migration, 201–205  
 in Europe, 202–203  
 and tenure choice modeling, 215–217  
   data on, 217–219
- “Million Program,” 206
- mobility rate, 214–215
- Model A; *See* regional migration model (model A)
- Model B; *See* intra-regional migration model (model B)
- Model C; *See* inter-regional relocation model (model C)
- Model D; *See* tenure choice model (model D)
- Monte Carlo techniques, 42, 65–67, 97
- mortality analysis; *See* piecewise constant hazard (PWCH) model
- mortgages; *See also* debts  
 microsimulation of interest paid on, 38–39
- MSL estimator; *See* maximum simulated likelihood (MSL) estimator
- multi-family houses, 205–206, 208, 215, 219  
 ratio of detached houses to, 207
- multinomial choice analysis  
 explanatory variables, 365–367  
 results, 367–369
- multinomial model, 217  
 estimates of, 229
- municipality care  
 daytime activities, 345

- home help services, 344–345
- special housing accommodation, 345
- national expenditures, on Swedish
  - health care system, 327–328
- National Social Insurance Board, 64
- NEDYMAS model, 33
- neighborhood, 214
- nested model; *See* multinomial model
- net present value accrual (ACC<sub>i</sub>),
  - 160–161, 190
- net present value (NPV), 160–161,
  - 167–168, 173, 176, 190
- occupational pensions, 56, 262
  - and central government employees,
    - 150, 157
  - collective agreements, 148–150
  - and compensations under disability
    - pension, 146
  - and early-retirement, 151, 176
  - income and, 22
  - income from, 155–156
  - and local government employees, 150
  - and private sector blue-collar
    - workers, 144, 149, 157
  - and private-sector white-collar
    - workers, 149, 157
  - rules for, 56, 58
- OECD countries
  - and pensions, 253
  - stylized facts compared to, 152–155
- old age care
  - expenditure on, 344–345
  - home help services, 344–345
  - and immigration status, 398–399
  - and improved health status, 394
  - and income distribution, 403–405,
    - 407–408
  - informal care, 346–347
  - Kungsholmen study; *See*
    - Kungsholmen study
  - mortality analysis; *See* Piecewise
    - constant hazard (PWCH) model
  - multinomial choice analysis; *See*
    - Multinomial choice analysis
  - municipality care, 344–345
    - and parents' proximity, to adult
      - children; *See* Parents' proximity, to
        - adult children
    - poverty among, 407–408
    - private care, 346
    - public elderly care, 343–344
    - relocation and; *See* relocation, and
      - old age care
    - simulation, 373–377
      - and wealth distribution, 404–408
  - orphans, adoption of, 69–70
  - out-of-pocket payments, 11–12,
    - 326–327
  - owner occupation, 207–208, 212–213,
    - 215
- PA-03 agreement, 150
- PA-91 agreement, 150
- Panel of Retirement Income Modeling
  - of the US National Research
    - Council, 11, 49
- parameters estimation, in
  - microsimulation models, 41–47
- parents' proximity, to adult children
  - age and, 357
  - income in, 351
  - local labor market in, 350, 354
  - logistic regression model, 353,
    - 355–356
  - marital status and, 351, 357
  - metropolitan areas in, 353
  - regional migration and, 357, 359
  - relocation frequency in; *See*
    - relocation, and old age care
      - simulation model, 356–359
- pension rights, 63–64; *See also* pensions
- pensions, 147–152, 265
  - disability pension; *See* disability
    - pension
  - and early retirement, 144–146
  - data sources for analysis of,
    - 164–169
  - empirical specifications for,
    - 169–171
  - exit rates and sample shares with,
    - 168
  - models of, 143–145, 160–162
    - simulation outcomes in, 173,
      - 176

- occupational pension; *See* occupational pension
- OECD report on, 253
- private pension plans, 250, 264
- public pension plans, 250–251
- social security pensions, 258–259, 262
- pension systems, 13–14, 18; *See also* pensions
  - microsimulation model for, 34
  - for postponing retirement, 7
  - reform in, 19
- piecewise constant hazard (PWCH) model, 369–370
  - estimation results of, 370–371
  - gender-specific estimates of, 371–372
- POLIMOD model, 32
- population pyramids, of European countries, 1–3
- poverty, 285–287
- PPS; *See* purchasing power standards (PPS)
- Premium pension, 148
- private care, 346
- private entrepreneurs, 125
  - annual income of, 126
- private pension plans, 250
- private pension policy investments, 305–307
- private-sector, occupational pensions in
  - for blue-collar workers, 144, 149, 157
  - for white-collar workers, 149, 157
- probit equation, 36
- proximity; *See* parents' proximity, to adult children
- public elderly care
  - Ädel Reform, 343–344
  - municipality care, 344–345
- public pension plans, 250–251
- purchasing power standards (PPS), 7
- quality-of-life index, 93
- real estate investments, 299–300
  - and debts, 311–312
  - investment in other real estate, 309–310
  - market value of houses, 307–309, 315–316
- real rate of interest, and debts, 312
- recursive model structure, 41
- regional migration model (model A), 216, 219–221
  - parameter estimates of, 222–223
- regional mobility
  - and GEOSWEDE, 61
  - in SESIM, 72
- rehabilitation from, disability pension, 72
- reimbursement, and sickness absence, 128, 132
- relocation
  - and old age care, 348–350
    - income and, 351
    - local labor market and, 350, 354
    - marital status and, 351, 357
    - metropolitan areas and, 353
    - own house, 351
  - steps of, 215–216
- rent regulation, 211
- replacement rate, for baby boomers
  - different measures of, 288–292
  - on disposable income, 276–279
  - on taxable income, 279, 281
- residential mobility, 20–21
- retirement income, of baby boomers
  - concepts and measures, 275–276
  - income distribution, 284–285
  - and poverty, 285–287
  - relative income, 281–284
  - replacements rates and; *See* replacement rates
- retirements, 74, 165, 251–252; *See also* retirement income
  - age of, 7, 13
  - and disposable income, 400–401
  - early; *See* early-retirement
  - and labor force participation, 400
  - from labor market, 3, 17–20
  - and pension, 399
- robust regression, 41
- schooling, rate of return on, 265
- self-assessed health; *See also* self-reported health
  - distribution, 87
  - and HILDA, 93

- and Statistics Sweden Health Index, 94
- self-employment, 262
- self-reported health, 122; *See also* self-assessed health
  - of low education population, 87–88
- semi-detached houses, 206–208, 219, 230
- sensitivity analysis, 48–49
- SESIM, 15–16, 24–25, 55, 143, 177
  - calibration in, 42
  - and exogenous variables, 67
  - GEOSWEDE as data source for, 61
  - and health, 15–16
  - HINK/HEK as data source for, 61; *See also* HINK/HEK surveys
  - income module in, 58–59
  - initial adjustments in, 61–64
  - and Kungsholmen study, 60
  - and labor market module in, 56–58
  - and notion of full-time status, 58
  - and old baby-boomers project, 15
  - sequential structure of, 55–60
  - and sickness absence, 16–17
  - stochastic models in; *See* stochastic simulation models
  - structure of, 159
- Sfb3-MSM model, 33
- SHARE; *See* Survey of health, ageing, and retirement in Europe (SHARE)
- short-term absence, 117, 125
- sick-leave
  - simulations for, 132–135
- sickness absence, 16–17
  - data for utilization of, 131
  - econometric specification, 130
  - empirical models for, 130–132
  - empirical specifications and variables in studies analyzing, 116–122
  - factors of, 115–116
  - HILDA data for, 128–130
    - dependent variable, 129
    - explanatory variables, 129–130
  - previous empirical research in, 116–122
  - reimbursement, 128, 132
  - simulations for, 132–135
  - Swedish sickness-benefits system, 122–128
    - rate, 127
  - sickness-absence spells, 126
  - sickness absenteeism; *See* sickness absence
  - sickness allowance scheme, 146–147
  - sickness-benefits system, 122–128
  - sickness-cash benefits
    - paid by social insurance, 126–127
  - sickness compensation, 146
  - sickness days, compensated in SESIM, 81
  - social care
    - demand, 394–395; *See also* cost of health care
      - and unemployment, 403
    - MNL model for, 47
    - utilization of, 23–24
  - social insurance, for sickness-cash benefits, 126–127
  - social security pensions, 258–259, 262
  - special housing accommodation, 345
    - expenditure on, 346
  - Statistics Sweden Health Index, 93–95
  - STINMOD model, 32
  - stochastic models, 64–83
  - stock prices, labor force participation, 259–260
  - Survey of health, ageing, and retirement in Europe (SHARE), 90
  - Swedish ATP pension systems, 34
  - Swedish Health Care Act, 328
  - Swedish health care system
    - government's role in, 325–326
    - inpatient care in; *See* inpatient care
    - national expenditures on, 327–328
    - out-of-pocket payments in, 326–327
  - Swedish Household Income Survey (HINK/HEK)
    - age distribution in, 361–362
    - transition in, 363–365
    - vs.* Kungsholmen study, 361–365
  - Swedish housing policy, 209–211
  - Swedish microsimulation model (SESIM); *See* SESIM
  - Swedish National Insurance Board (RFV), 33



- Swedish panel of living conditions of oldest old (SWEOLD) study, 86
- Swedish sickness-benefits system, 122–128  
features of, 123–124
- Swedish Social Insurance Administration, 126–127
- SWEOLD study; *See* Swedish panel of living conditions of oldest old (SWEOLD) study
- SWITCH model, 32
- tax  
base, 264–265  
and benefit system, 32–33, 253  
rates, 32, 34  
rules, 34  
systems  
for postponing retirement, 7  
reform in, 19
- taxable income  
and debts, 311  
replacement rate on, 279, 281
- tax-assessed wealth, 294
- tax-benefit models, 32–33
- tax-deferred pension savings, 299  
characteristics of, 303–305  
private pension policy investments, 305–307  
two part model for, 305–307
- Taylor expansion, 44–45
- tenure choice, 20–21, 35  
and migration modeling, 215–217  
data on, 217–219  
and mobility, 214–215
- tenure choice model (model D), 216, 228, 230–236
- uncertainty, in microsimulation models, 48
- unemployment, 65, 74  
benefits, 125  
and health care demand, 403  
and labor force participation, 401–402  
and social care demand, 403
- urbanization, 201–205  
in United States, 202
- use-value rent system (“bruksvärdesystemet”), 211
- utility function, 158, 169
- validation, of microsimulation models, 47–49
- VAR model, 39
- voluntary early retirement model, 173
- waiting period, 125
- wealth, 22–23; *See also* wealth distribution
- wealth distribution  
age and, 295–296, 316–318  
disposable income and, 319–321  
financial wealth model; *See* financial wealth  
health and, 321  
inequality in, 295, 319  
international perspective, 296–298  
and old age care, 404–408  
real estate investments; *See* real estate investments  
simulating future of, 315–322  
tax-deferred pension savings;  
*See* tax-deferred pension savings
- wealth tax, 294
- white-collar workers, in private-sector, 165–166, 173  
and occupational pension, 149, 157  
*vs.* other labor market sectors, 155–157
- working capacity  
long-standing illness and severely affected, 88–90  
and Statistics Sweden Health Index, 94
- year-to-year equation  
marginal effects, 131  
and sickness absence, 130
- youngsters moving from parents, stochastic model of  
in SESIM, 71