
Subject Index

- Age distribution: comparison of savings rates in Japan and United States using, 147–50; effect of changes in population, 14–18, 33–34; effect on allocation of government spending, 25–26, 33–34; estimates of over-65 (1900–1940), 237; of income and housing assets, 245–61; of income and housing consumption, 252–54; model of forecast of nursing home use by, 367–72; projections of U.S. population by age (1900–2100), 229–35; Taiwan, 335–38
- Aging population: budgetary pressure from, 25–26; comparison of Germany and United States, 292–93; double aging in Germany, 293–95; effect of changing risk factor on forecasts for, 100–102; effect on existing government spending programs, 25–26, 33–34, 36–37; forecasts (2035–2040), 99–100, 225–26; forecasts based on disability variables in dynamic mortality model, 62–73; impact of predictions for size and composition, 225–29; projections, 229, 236–37
- Altruism (intergenerational), 154–59
- Bequests: as factor in saving behavior: Germany and United States, 327; volume: Germany and United States, 313
- Bias: in estimates of age distribution of over-65 population, 237
- Capital gains taxation (Germany and United States), 305
- Capital markets (Germany and United States), 305–6
- Community living: effect of state policy on use of helpers for elderly, 426–30; for elderly people: response to state policy, 420–30; model with policy variables of substitution by elderly of nursing home or, 421–30; residence duration model, 367–88
- Consumption: effect of bequest expectation on, 327–28; of elderly: Germany and United States, 307–13; of housing among elderly people in Germany and United States, 315–23; of housing by age: United States, 256–61; housing equity extraction among very old for, 279–83; income-tracking of younger and older cohorts: Taiwan, 350–56, 360; predictions using life-cycle model: Taiwan, 342–50
- Current Population Survey (CPS), 107
- Data sources: determinants of nursing home utilization, 409–12; forecasts of nursing home use among elderly, 367, 372–77; housing market in response to demographic swings, 237–45; 401(k) plan eligibility and participation, 107; for life expectancy analysis, 82, 86; for mortality model, 53–57; pension plan provisions and retirement decisions, 184, 190; saving, growth, and aging in Taiwan, 334–35; savings behavior among aged, 307; for U.S. population projections, 14. *See also* Household cohorts.

- Deferred compensation plans. *See* 401(k) saving plans
- Demographic factors: characteristics in model of determinants of nursing home use, 411-13; effect on housing market growth, 278-79; in explanation of differences in Japan/U.S. savings rates, 147-50; industrialized countries and Germany, 292-95; projected changes in structure, 14-18; Taiwan, 335-37. *See also* Aging population; Household cohorts; Population
- Departure rates: under firm window of retirement option: predicted and actual, 194-96, 198-205; life-cycle for men and women: firm level, 190; predicted and actual: option value and stochastic dynamic programming models, 198-208; retirement age: at firm level, 191-94
- Dependency ratio: Germany and industrialized countries, 293-94; predicted future U. S., 225-26
- Disabilities: forecasts of cohort changes in dynamic physiology-based mortality model, 66-72; Grade of Membership concept to identify profiles of, 42, 43, 47-49; measures used in Grade of Membership analysis for mortality model, 53-57; model of distribution in population, 47-49; as predictor of mortality, 70
- Dissaving (Germany), 326-27
- Double aging. *See* Aging population
- Earnings. *See* Income
- Economic performance, Taiwan, 331-32
- Economic Recovery Tax Act (1981), United States, 105
- Education spending, future, 23-25
- Elderly people: assistance to disabled in United States, 403; behavior under life-cycle hypothesis, 326-27; child-dependent in Taiwan, 333; dissaving: Germany, 326-27; effect of state policy in community living choices, 420-30; effect of state policy on use of helpers in community, 426-30; forecast model of age distribution use of nursing homes, 367-94; free riding, 159-62; health care and long-term care: industrialized countries, 400-403; home ownership, mobility and housing consumption: Germany and United States, 314-20; housing equity, 227-29; independent living in Taiwan, 333; independent or child-dependent living: Taiwan, 333; labor force participation: Germany and United States, 299-304; model of projections of U. S. elderly population, 229, 236-37; model of substitution between community living or nursing home with variables related to policy, 421-30; old-age dependency ratios: industrialized countries and Germany, 293-95; projecting future health status, 42-72; welfare implications of housing prices for oldest old, 279-83
- Fertility rates: industrialized OECD countries, 293-94; Taiwan, 333
- Force of mortality: at ages 85, 90, and 95 in Sweden, 83-84, 91; hazard in model of mortality, 43-45; limited-life-span and mortality-reduction paradigms, 80-82; pattern of reduction in Sweden, 85-91
- Forecasts: generated from dynamic physiology-based mortality model, 46-48, 53-73; of housing market, 274-79; of over-65 population in United States, 99-101; of response to change in risk factors, 101; of U. S. population (1900-2100), 229-35; of U. S. population (1990-2080), 14-18; uncertainty in population, 98-100. *See also* Predictions
- 401(k) saving plans: characteristics, 111-14; effect on saving behavior, 122-31, 139-41; eligibility and participation in, 106-13, 132; employer matching of employee contributions, 113-14; employer provision of, 106; potential effect on elderly households, 105; probability of contribution of given amount, 107; as saving instrument, 176-78; as substitute for individual retirement accounts, 114-21, 129-32
- GoM. *See* Grade of Membership (GoM) concept
- Government programs: effect of demographic changes on, 13-14; estimates of cost to maintain 1986 levels, 20-25; expected payments in United States (1986), 18-20, 29-33; housing markets: Germany and United States, 314, 320; projections of expected payments, 18-25, 34-37; transfer program descriptions, 27-28. *See also* Public policy, state-level
- Government spending: current and projected, 34-36; estimated costs of maintaining

- government program outlays, 13–14; for nursing homes, 397
- Grade of Membership (GoM) concept, 42, 43, 47–49, 53–57, 73–74
- Hazard or intensity of death. *See* Force of mortality
- Health care: projected costs related to life expectancy of elderly, 98; scenario projections of future spending, 35–36. *See also* Medicaid program; Medicare program
- Health insurance systems: effect on housing decisions of elderly: Germany and United States, 315; financing in industrialized countries: Europe and Canada, 400–403; Germany and United States, 306. *See also* Long-term care
- Health models, 101–2
- Helpers (as aids to elderly), 426–30
- Household cohorts: construction for saving and life-cycle analysis: Taiwan, 338–42; evidence for consumption tracking in income: Taiwan, 350–56, 360; in life-cycle interpretation of consumption and saving: Taiwan, 342–50
- Households: aging of German, 293; effect of tax-deferred saving plans on other forms of saving, 114–21; elderly: Germany, 293; participation and balances in 401(k) saving plans and IRAs, 107–13, 132; potential effect of 401(k) plans on elderly, 105; savings: Taiwan, 331–33; savings and wealth: Germany and United States, 307–12; substitutability of IRAs and 401(k)s, 114–22, 129–30; test of savings effects of 401(k) plans, 122–31
- Housing: age distribution of housing assets, 245–61; ownership, mobility, and consumption: Germany and United States, 315–20; real user cost under expectations models, 245–50
- Housing equity: of elderly, 227–29; extraction among very old, 279–83
- Housing market: consumption profiles (1940, 1960, 1970, 1980), 257–61; different models of demand and supply functions, 251–74, 286–87; government intervention in Germany and United States, 314–15; impact of changing demographics on, 227–29; impact of demographic changes on, 227; projections of prices, supply and demand, 274–79, 286; rental: Germany and United States, 314–15
- Income: age distribution of, 245, 251–61; annuity income in Germany, 307–13; sources: Germany and United States, 307–13; taxation in Germany and United States, 304–5; tax treatment while receiving public pension: Germany and United States, 299
- Income, retirement: differences in levels: Germany and United States, 295–99; increase relative to labor income in Germany and United States, 300
- Individual retirement accounts (IRAs): participation and balances in, 107–11, 116–17; as substitute for 401(k) saving plans, 114–21, 129–32; volume of contributions, 105, 116–20
- Insurance. *See* Health insurance systems; Long-term care; Unemployment insurance
- Intergenerational considerations: altruism in saving model, 154–59; effect of preferences on levels of savings, 174; effect of public policy on housing transfers, 322–23; estimates of saving with, 154–62; in housing demand model, 279–84, 288; transfers in savings model, 145–62; undersaving by elderly in savings model, 159–62
- Investment, impact of saving, 175–76
- Labor force participation: age 65 and over: Germany and United States, 299–304; retiree/worker ratio: Germany, 294; trends in OECD countries, 299–300
- Lexis maps, 86–89
- Life-cycle hypothesis: age-wealth profiles: Germany and United States, 311–12; behavior of elderly under, 326–27; of consumption and saving: Taiwan, 342–50; implications in Taiwan, 331–34
- Life expectancy: current and long-term in industrialized countries, 79–81, 293–94; forecast of remaining life expectancy in Sweden, 89–91; forecasts for over-65 population in United States, 99–100; forecasts from dynamic physiology-based mortality model, 66–73; Germany, 293–94; limited-life-span paradigm, 81–82; oldest-old mortality rates in Sweden, 89–90; Taiwan, 333
- Living status, elderly: determinants dependent on public policy, 421–26; housing and living arrangements: Germany and United

- Living status, elderly (*continued*)
 States, 315–23. *See also* Community living; Elderly people; Housing; Housing market; Intergenerational considerations; Nursing homes
- Long-term care: current financing, 395; degrees of financing in industrialized countries, 400–403; financing in United States, 403–9; insurance to provide for possibility of long-term care, 397; model of demand and supply factors in market for, 405–9; proposals to increase coverage, 395–96; public provision, 397–98. *See also* Community living; Living status, elderly; Medicaid program; Medicare program; Nursing homes
- Malnutrition, 74
- Mapping of demographic rates, 86–88
- Medicaid program: effect on incentive to save, 175; effect on use of nursing homes, 417–20; estimates of future payments, 22–26; long-term care financing by, 395, 399, 403; state program eligibility differences, 403–7
- Medicare program: effect on decision to retire, 185, 205–7; effect on incentive to save, 175; estimates of future payments, 21–26; payment rules for nursing home care, 407
- Moral hazard (long-term care), 396, 398, 403, 420–21, 438–39
- Mortality: disability as predictor of, 70; dynamic model using physiological influences as variables, 42–53, 95; level of, 83. *See also* Force of mortality
- Mortality rates: current and long-term in industrialized countries, 79–81; data from Statistics Sweden, 82; evidence of reduction in Sweden, 83–91; life expectancy at current: industrialized countries, 79–80; modeling to forecast, 100–101
- Mortality-reduction paradigm, 81–82
- Mortality risk factors: effect of variation on population forecasts, 99–102; forecast of change using health models, 101–2
- National Long-Term Care Survey (NLTC), 50, 53, 410–11
- Nursing homes: Medicaid payments for costs of, 403; model to forecast age distribution of use, 367–72; model with policy variables of substitution by elderly of community living or, 421–30; simulation of elderly experiences in, 371–72, 388–94
- Nursing home use: composition of users, 417–20; duration model, 367–88; factors affecting aggregate use in model of, 413–17; model and estimates, 368–88
- Option value model: comparison of parameter estimates with stochastic dynamic programming model, 198–207; description, 194–97, 208–9; related to retirement age decisions: Germany and United States, 301–2; of retirement: predictive validity, 183–85
- Pension plans, private: effect on time frame of decision to retire, 185–90; in Germany and United States, 295–303
- Population: age composition, 225–26; forecast uncertainty, 98–102; predicted peak U.S., 225–26; projections (1990–2080), 14–18; projections by age of U.S. (1900–2100), 229–35; Taiwan, 331–33. *See also* Aging population; Demographic factors
- Predictions: of health status of elderly, 42–72; of life expectancy: implications for public policy, 3; of nursing home use by elderly people, 413–17; of retirement: comparison of decision model outcomes, 194–207, 213–14; of retirement: option value model, 194–208, 213–14; of retirement: stochastic dynamic programming model, 194–208, 213–14; similarities and divergence of option value and stochastic dynamic programming models, 214–19; validity of option value and stochastic dynamic programming models, 184–85. *See also* Forecasts
- Preferences: as reflection of savings rate differences, 153–65; effect on levels of saving of intergenerational, 174; effect on saving of intergenerational, 174–76; effect on saving behavior in Japan and United States, 143–44; as reason for decline in U.S. saving, 170–72; for saving, 177–78; in saving behavior, 122–31
- Prices: forecasts of housing, 279–80, 286–88; welfare implications of changes in housing, 279–83

- Prices. *See also* Housing equity; Housing market
- Profit-sharing plans, 133
- Public pension systems. *See* Social security systems
- Public policy: designed to stimulate rate of saving, 176; effect of changing mortality risk determinants on, 98; effect on living arrangements of elderly, 322–23; for housing market: Germany and United States, 315–23; hypothetical role in changing saving behavior, 173; implications of life expectancy predictions for, 3; influence on housing market: Germany and United States, 314; long-term care programs in industrialized countries, 400–403; problems of proposed long-term care program, 398–99; response of retirement behavior to: Germany and United States, 303–4
- Public policy, state-level: effect on nursing home use and community support, 405, 407–9; effect on user composition in nursing homes, 417–20; Medicaid eligibility differences, 22–23, 403–6; response of community resources to elderly living requirements, 420–30
- Retirement age: in Germany and United States, 295–301; option value model to analyze decision for, 301–2; predictions using stochastic dynamic programming model, 197; simulated average: Germany, 302–3
- Retirement decision: factors in consideration of, 185–90; firm motivation to provide options, 221; incentives in Germany and United States, 295, 298–99; life-cycle departure rates at firm level, 190–94; option value model of postponing, 194–97; predictions of option value and stochastic dynamic programming models, 194–208; two models testing validity of predictions of, 184–85, 213–15. *See also* Departure rates; Taxation; Window of retirement
- Revenue Act (1978), 106
- Risk factors: in dynamic model of mortality with physiological variables, 53–74; effect of changes on population forecasts, 100–102; effect of improvements on mortality rates, 41–42; forecasts from dynamic mortality model, 57–66; mortality as function of histories of, 3. *See also* Mortality risk factors
- Samaritan's dilemma, 175
- Saving accounts, tax-deferred, 105. *See also* 401(k) saving plans
- Saving behavior: bequests in, 327–28; under consumption-tracking-income theory: Taiwan, 350–56, 360; effect of interest rate differences: Japan and United States, 150–52; household: Germany and United States, 304–12; of 401(k) and non-401(k) contributors, 122–31; of 401(k)-eligible families and IRS contributors, 120–21
- Savings: behavioral theory of household saving, 172–76; decline in U.S. national, 169–70; different options: Germany and United States, 306; 401(k) as component of retirement, 132; life-cycle hypothesis of household saving in Taiwan, 342–59; model in intergenerational context, 145–50; model in intergenerational context with social welfare function, 154–59; neoclassical reasons for low, 173–76; preferences in Japan and United States affects levels of, 143–44; rates in Japan and United States: context of world economy, 146–47; subsidy incentives in Germany, 304–5; tax-advantages savings plans as substitute for other, 114–21; test of effect of 401(k) plans on, 122–31. *See also* Wealth
- Savings rates: differences reflect different tastes or preferences, 153–65; explanations for decline in U.S., 169–71; Germany and United States, 304–5; in Japan and United States (1960–89), 146–48
- Senescence (in dynamic physiology-based mortality model), 42–46, 66
- Social Security Administration, United States: effect on incentive to save, 175; estimates of future payments, 21–26, 34–35; as factor in time frame for retirement, 188–89; population projection data, 14, 34
- Social security systems: disincentives to work: Germany and United States, 328; effect on incentives to save in Japan and United States, 175; effect on motives to save, 175; pay-as-you go method: Germany and United States, 295–96; reform in Germany and United States, 298–99; retirement income: Germany and United

- Social security systems (*continued*)
States, 295–300, 306; simulated average retirement age and contribution rates, 302–3; Taiwan, 337; tax treatment of earnings while receiving public pension: Germany and United States, 299. *See also* Pension plans, private
- Stochastic dynamic programming model: comparison of parameter estimates with option value model, 198–207; description, 197, 209–12; of retirement: predictive validity, 184–85
- Subsidies: housing markets in Germany and United States, 314–15, 320–21; incentives for saving behavior: Germany, 304–5; rental housing: Germany and United States, 314–15, 320–23
- Survey of Consumer Finances (SCF), 107
- Survey of Income and Program Participation (SIPP), 107
- Taxation: of capital income affects levels of saving, 173–74; of 401(k) savings plan, 106; of income and capital gains: Germany and United States, 304–5; of labor earnings for pension recipients: Germany and United States, 299
- Tax Reform Act (1986): provisions for IRAs under, 105, 111, 116–18, 132; provisions related to 401(k) contributions, 106
- Time process: in mortality model with physiological variables, 44–53, 73
- Transfers, intergenerational, 145–62
- Uncertainty: in growth and health changes of elderly population, 73–74; in life-cycle model of consumption: Taiwan, 346–48; in population forecasts, 98–100; potential effect on retirement decision: option value and stochastic dynamic programming models, 215–18
- Undersaving: free riding by elderly in saving model in intergenerational context, 159–62; saving model in intergenerational context with social welfare consideration, 154–59
- Unemployment insurance, 175
- Wealth: bequests as component of accumulation, 327; tangible and intangible household: Germany and United States, 307–12. *See also* Savings
- Welfare: estimates of future payments, 23–25; implications of housing price changes for, 279–83
- Window of retirement: at firm level: effect on decision to retire, 189–90, 194; Germany and United States, 296–97; option value model describes actual behavior, 302. *See also* Retirement decision