

## Index

- accidental bequests, 85, 211. *See also* estate taxation
- accountability for public pension systems, 185
- accounts-based systems, 2
- accumulated contributions
  - as a key variable in social security systems, 212
  - maximum level for the SQ economy, 216
  - relating to minimum benefit level, 212
- Advisory Council proposal, 207
- age. *See also* aging
  - cohort effects and, 275
  - distribution in the U.S., 60
  - patterns in asset ownership, 272–84
  - relating to risk tolerance, 299
  - starting to benefit from social security, 64
  - welfare losses contingent on, 242
- age consumption profiles, 13
- age dependent probabilities of receiving a bequest, 92
- age dependent risk aversion, 284
- age population counts, 15
- age profile of equity shares, 278
- age structure
  - effects on productivity, 270
  - integrating asset demands with changing, 281–4
  - monetary authority response to, 304
  - of the U.S. population, 279
- age wealth profiles, 273–9
- agents. *See also* unborn agents
  - aggregate assets for, 19
  - budget constraints for, 18
  - calculating the number of children of, 17
  - constraints on the decisions of, 213
  - in dynamic life-cycle models, 13
  - endowment components, 210
  - gross labor income of, 19
  - individual life-cycle of, 14
  - inheritance of, 18
  - labor supply of, 20
  - living periods, 250
  - net-taxes of, 19
  - one-dimensional choice problem, 211
  - overlapping generations of, 209
  - pension benefits of, 21
  - as rational and myopic, 149
  - two types of, 146
  - unborn, 210, 241
  - utility from consumption, 18
- aggregate capital, law of motion for, 211
- aggregate income, 120
- aggregate investment in risky short-term assets, 163
- aggregate output, riskiness of, 146
- aggregate production function, 309
- aggregate resource constraints, 214
- aggregate resources, 243
- aggregate saving rate, 121
- aggregate savings, 238–9
- aggregate uncertainty, 146, 252
- aggregation, 120–1
- aging. *See also* age
  - allocational implications of, 49
  - of the Baby Boom, 268
  - of developed societies, 11
  - downscaling the welfare state and, 321
  - impact in the world's three major regions, 42
  - macroeconomic impact of, 11
  - negative impact on developed world economies, 3
  - positive implications for the viability of Social Security, 4
  - social security under strain from, 328–9
  - threatening German and Italian pension systems, 334
  - of the U.S. population, 50

- altruism, 70
  - operational, 49
  - between parents and children, 71
  - social security and, 49
- annuities. *See also* imperfect annuities; perfect annuities
  - availability and savings decisions, 54
  - contribution to welfare loss, 232
  - direct effect of, 239
  - hedging mortality risk, 231
  - interaction with aggregate savings, 238–9
  - making agents worse off, 239
  - mitigating the desire to save, 234
  - providing lifetime, 184
- annuities markets
  - externality associated with, 234
  - role of, 244
- anti-tax coalition of skilled young, 327
- arbitrage condition
  - arising from profit maximization, 22
  - for the U.S., 24
- Argentina, pension reforms, 195 *See also* Latin America
- asset(s). *See also* illiquid assets; risky assets; short-term assets; world assets
  - age patterns in the ownership of, 272–84
  - computing aggregate for an agent, 19
  - differentiating risky from riskless, 252
  - dynamic budget constraint domain and, 94–5
  - held by recipients of bequests, 279
  - a high marginal propensity to consume implied by low, 114
  - revaluation of, 274
- “asset accumulating years,” 280
- asset accumulation in the high school graduate group, 99
- asset allocation domain of the hyperbolic model, 83–4
- asset allocation restrictions on Latin American pension assets, 200
- asset decumulation, 275
- asset demands
  - between 2020 and 2050, 299
  - age-specific, 276
  - cohort and time effects in, 274
  - cohort-specific intercepts for, 277
  - by retirees, 319
- asset endowment of agents, 18
- asset grids for educational groups, 107
- asset holdings
  - changes based on age, 276
  - at older ages, 275
  - projected per capita in each year, 281
- asset-market meltdown. *See* market meltdown
- asset markets
  - effects of the Baby Boom, 7–8
  - response to a demographic shock, 304
  - simulating the Baby Boom’s effect, 256–63
- asset price effect, 272
- asset prices
  - Baby Boom retirement saving effect on, 270
  - correlating with demographic factors, 286
  - effect of cohort size on, 270
  - effect of news about future technologies on, 172
  - link with demographic structure, 286, 298
  - reaching their peak, 271
  - relating to the projected asset-demand variable, 295–9
- asset pricing implications of the stock and bonds returns model, 248
- asset profiles
  - constructing age-specific, 273
  - for world economy regions, 23
- asset returns
  - for Baby Boomers, 260
  - emphasizing the low-frequency variation in, 291
  - link with demographic structure, 269
  - previous empirical evidence, 284–7
  - relating to population age structure, 287
  - relating to the projected asset-demand variable, 295–9
  - relationship with demographic change, 7–8
  - testing for low-frequency patterns in, 286
- asset swaps. *See* shell games
- assets. *See also* safe asset
- Australia, providing investment flexibility, 200
- automatic deductions, 139
- automatic deposit system for 401(k) plans, 116
- Baby Boom, 257, 268
  - asset demand and, 281
  - asset market effects of, 247
  - followed by baby bust, 11
  - impact on stock and bond returns, 7
  - retirement savings driving up asset prices, 270
  - simulating, 271–2
  - simulating asset market effects of, 256–63
- Baby Boom/baby bust transition in Germany and Italy, 334
- Baby Boomers
  - better off in terms of lifetime consumption, 250
  - investing in bonds for retirement, 260
  - predicted decline in return on retirement savings, 249
  - problem, 54
  - readiness for retirement, 75

- relatively few children, 260
- retirement of, 7–8
- return on retirement savings, 249, 260
- baby bust
  - in Germany and Italy, 334
  - postwar, 257
  - prewar, 255, 257
- balanced budget assumption, 120
- balanced-budget rules, 9
- beneficiaries, ratio to workers, 50
- benefit risk, 192, 193
- benefits. *See* pension benefits
- bequest motive
  - economy with, 312
  - general equilibrium model with, 8
  - impact on the accumulation of capital, 317
  - including, 308
  - introducing, 272
  - model, 308
  - not attenuating the predicted decline in stock prices, 311
- bequests
  - accidental, 85
  - age-distributions of, 13
  - effects on recipients, 279
  - magnitudes estimated by age profile, 93
  - modeling, 13
  - probabilities of receiving, 92
  - received by consumers, 314
  - undesired, 13
- bequests domain, 82–3, 91–3
- binding liquidity constraints, 107–14
- birth cohorts. *See* cohorts
- birth rates
  - declining, 50
  - in the Poterba model, 310
- bonds. *See also* government bonds
  - Baby Boomers generating a large demand for, 260
  - equal value to stocks, 194
  - long-term government, 287
  - shift toward as agents approach retirement, 248
  - U-shaped profile for holdings, 248
- Boomers. *See* Baby Boomers
- borrowing constraints
  - for young workers, 256
- Boskin proposal, 209
- broad pre-funding, 188
- budget balance in the pension alternatives model, 214
- budget constraints for agents, 18
- burden of social security, 218–20
- business cycles, eliminating, 238
- calibrated economies, 98–114
- calibration of the
  - hyperbolic model, 87–95
  - pension alternatives model, 220–5
  - stock and bonds returns model, 252–6
- Canada, population age structure and asset returns, 294–5
- capital
  - adjustment costs, 13
  - bequest motive and, 311
  - cost of, 190
  - crowding out of, 3
  - demand and supply curves for, 311
  - distortionary effect of social security on, 211
  - equilibrium price of, 308, 310, 312
  - formation of, 199
  - impact of a bequest motive, 317
  - price of, 309, 310, 311
  - production of, 270
  - resources of owners of, 315
  - variability in the supply of, 271
- capital accumulation effect, 68
- capital adjustment technology, 313–14
- capital assets, 187
- capital deepening, 11
- capital formation
  - increasing the rate of, 186
  - little direct effect from pay-go systems, 187
  - versus shell games, 186–90
- capital goods, equilibrium price of, 272
- capital income taxation, 231
- capital market equilibrium, 22, 24, 56
- capital markets
  - closed economy compared to open, 22
  - integration of emerging economies in, 303
- capital shortage, long-run, 29
- capital stocks
  - crowding out of, 42
  - increase associated with agents providing for own pensions, 236
  - increasing, 33
  - transition paths of, 29
- capital taxation
  - distortionary, 231
  - effects on welfare loss, 232–4
- capital-labor ratio
  - dynamics of, 54
  - movements disadvantaging large cohorts, 250
  - six percent above steady state in 1960, 257
- cash on hand, 106
- ceiling
  - on fiscal deficits, 329–31
  - on taxable wages, 20
- CES utility function, 17–18
- child cohort, 257

- childhood in the stock and bonds return model, 250
- child-rearing years in consumption profiles, 13
- children
  - calculating the number in a household, 17
  - consumption of, 18
- Chile. *See also* Latin America
  - 1981 reform, 202
  - effects of the guaranteed minimum pension, 199
  - front-loading of transaction costs, 201
- citizens. *See also* consumers; individuals
  - degree informed about public pensions, 337–40
- closed economies
  - initial equilibrium and baseline path in, 24–30
  - policy reforms in, 30–3
  - transition paths for, 25
  - year 2000 baseline path, 24
- closed economy capital market, 22
- coalition of old and low-income young, 71
- Cobb-Douglas production technology, 21, 54, 224
- coefficient of relative risk aversion (CRRA), 95–6, 98
  - bias in regression estimates of, 115
  - effects on the effects of DC plans, 138
  - equal to 1, 121–7
  - selection of, 129
- cohort effects
  - allowing for, 275
  - in asset demands, 274
  - in the hyperbolic model, 88
  - impact on the estimated age structure of asset holdings, 277
- cohort growth, declining in the U.S. population, 255
- cohorts
  - allowing for different lifetime asset levels for different, 275
  - benefits of, 171
  - capturing the risk of being born into large or small, 252
  - small differences across for net worth, equities, and net financial assets, 278
- college graduates
  - elasticities of intertemporal substitution, 101
  - liquidity constrained, 110, 112
  - long-term discount rates, 98
  - welfare impact of DC plans, 134
- commercial banks, providing investment capital, 199
- Commission to Strengthen Social Security, 1
- commitment devices
  - available to hyperbolic consumers, 139
  - helping the hyperbolic consumer, 76
- commitments
  - using external to prevent overconsumption, 74
- common stock. *See* stock
- compensated demands, 150
- complexity of public pension systems, 185
- composition of wealth, 272
- Computer Assisted Telephone Interviews (CATI), 337
- concave consumption functions, 106
- concave function, 212
- concave technologies, 168–70
- conditional opting out, 341, 342
- constant-returns-to-scale neoclassical production function, 251
- constrained model, 249, 256, 263
- consumer behavior in the rational expectations model, 314–15
- consumer choice problem, 150
- consumer goods
  - demands for, 150
  - for the diversification model, 150
- consumers. *See also* citizens; individuals
  - aggregate consumption, 316
  - bequests received by, 82–3
  - conflict between long- and short-term preferences, 77
  - consumption problems of, 81–6
  - continuing to hold assets throughout old age, 311
  - decumulating assets during retirement, 307
  - defined for the diversification model, 149–52
  - demographic structure and risk aversion of, 299–302
  - economy with representative, 189
  - low level of financial sophistication of American, 73
  - rate of survival, 82
  - rationality of, 81
  - self-reports about preferred consumption paths, 74
  - utility function of representative, 284
- consumption. *See also* risky consumption; safe consumption
  - by bequest recipients, 279
  - closely tracking income, 100
  - of consumers in the high school graduate group, 99
  - decline in old age, 13
  - demand and supply for, 179
  - deviations for Baby Boom generations, 260

- modeling choices as an intrapersonal game, 86
- profiles, 13
- consumption functions
  - concavity of, 106
  - of exponential and hyperbolic households, 106
- consumption goods technology, 313–14
- consumption measure, 301
- consumption paths, 74, 75
- consumption tax
  - arguments for, 4
  - financing pension transitional benefits, 31
  - intergenerational redistribution, 33
  - rates for the world economy model, 23
- contingent futures contract, 150
- contingent valuation, 336
- continuation payoff function of self, 86
- contribution rate, lack of knowledge of, 340
- corporate sector, net cash outflows from, 285
- corporate stock. *See* stock
- countries. *See* nations
- critical ages
  - alternative projections, 65
  - NPVs of projected taxes and benefits turning positive, 64
  - sensitivity to specification issues, 66–8
- cross-sectional age wealth profiles
  - from the 1995 Survey of Consumer Finances, 274
  - difficulty with, 273
  - reconciling, 275
- Cross-Sectional Moments parameters, 222
- crowding out of capital, 29
- CRRA. *See* coefficient of relative risk aversion
- current consumption. *See* consumption
- DB (defined-benefit) pension system, 7, 192, 252
  - dampening the macroeconomic effects of demographic change, 56
  - offsetting movements in the capital-labor ratio, 263
  - optimality in terms of intergenerational insurance, 247
  - partially funded, 151
  - periodic changes in, 171
  - with risky investment, 171
  - stronger case for trust fund investment in private securities, 172
- DC (defined contribution) pension plans, 76, 83, 192, 250
  - accumulation representing new savings, 125
  - assumptions about, 84
  - behavioral facets of, 139
  - calibrated economies without, 98–114
  - compared to a defined-benefit system, 252
  - economies with, 115–32
  - effectiveness in hyperbolic economies, 120
  - effects of implementing, 139
  - effects on educational groups, 123
  - exponential economies with and without, 121
  - higher government revenues associated with, 124
  - hyperbolic consumer reaction versus exponential, 138
  - hyperbolic households responding more favorably to, 127
  - impact in the hybrid simulations, 135
  - impact on hyperbolic economies, 123
  - institutional properties of, 117
  - new savings, 130
  - periodic changes in, 171
  - transition to steady state, 97
  - welfare impact of, 127, 131
- debt, government, 20, 219
- debt-financed transfer, 329
- decision making
  - sophistication in, 73
- decomposition of welfare gains, 230–8
- decreasing absolute risk aversion (DARA), 150
- decumulation, reasons for slow, 273
- defined-benefit pension assets, 279
- defined-benefit pension plan. *See* DB (defined-benefit) pension system
- defined-benefit structure, 170
- defined-benefits, 170–1
- defined-contribution pension plans. *See* DC pension plans
- defined-contribution social security system, 170
- defined-benefit Social Security. *See* DB (defined-benefit) pension system
- defined-contribution social security. *See* DC (defined-contribution) pension plans
- delayed gratification, 74
- demand for capital, 312
- demographic change, 279–81
  - efficient responses, 53–8
  - equity premium effect, 263
  - in Germany and Italy, 334
  - impact of, 272
  - inferences about low-frequency, 289
  - macroeconomic effects of, 55
  - parametric approach to testing, 300
  - predicted effects of, 289
  - relationship with asset returns, 7–8
  - returns on financial assets and, 284

- demographic change (*cont.*)
  - unprecedented, 11
  - welfare effect, 54
  - without government, 54–5
- demographic factors, correlating with the level of asset prices, 286
- demographic pressure on public pension systems, 186
- demographic shocks
  - asset market reactions to, 304
  - effects of plausible-sized, 272
- demographic structure
  - asset prices and asset returns effects, 284
  - correlation with asset returns, 302
  - global, 303
  - independent variables measuring, 288–90, 291–3
  - link with asset prices, 298
  - potential link with asset returns, 269
  - potential measures of, 287
  - risk aversion of the representative consumer and, 299–302
  - of the U.S. population, 279
  - of a world economy model, 14–17
- demographic variables, effect on asset prices and returns, 308
- demographics domain of the hyperbolic model, 82, 87
- dependency ratios
  - doubling of, 11
  - for industrialized countries and East Asia, 196
  - negative correlation with labor tax rates, 331
  - negative correlation with per capita social transfers, 331
  - in the U.S., Japan, and Europe, 16
  - for the world economy model, 16
- detrended population series, 255
- detrended TFP series, 255
- developed markets
  - moving pension assets into the stock market, 189
  - stock market investment effect, 186
- developing countries
  - different demographic outlook faced by, 184
  - investing pension assets in the stock market, 199–201
  - moving from small pay-go systems, 199
  - transition from pay-go systems, 189
- developing markets, stock returns lower in, 200
- developing world, 195–201
- Dickey-Fuller test statistics, 290, 292, 296, 298
- difference-in-difference approach, 348
- disability benefits of social security, 63
- disability component (DI) of OASDI, 51
- disability insurance
  - in the EU and Japan, 21
  - Social Security tax rate for, 20
- disability payroll taxes, modeling, 21
- discount function, 85
- discount rates
  - calibrated long-term, 98
  - declining, 80
  - short-run higher than long-run, 76
  - social security support weakened by higher, 67
  - SSA Intermediate Projection selected, 64
- discrete time framework versus continuous time, 97
- distortionary capital taxation, 231, 232
- distortionary effect of social security on capital accumulation, 211
- distortionary taxation, 57
- diversification
  - investing retirement savings in the equity market, 323
  - into private securities, 6
- diversification perspective of limiting stock market investments, 199
- diversified funds, restricting investment choices to, 200
- domains of the hyperbolic model, 81
- domestic equity markets, bias toward, 303
- Dow Jones Industrial Average, 285
- dynamic budget constraint, 83
- dynamic games
  - model of social security as, 59
  - reducing behavioral pathologies in, 90
- Dynan's equation, 113
- early withdrawal penalty
  - for 401(k) plans, 117
  - for a DC plan system, 117
  - hyperbolic consumer response, 123
  - varying, 133
- East Asia. *See also* Australia; Japan
  - dependency ratios for, 196
  - elderly dependency ratio and youth dependency ratio, 196
  - pension coverage in, 196
- economic growth, alleviating demographic pressures, 186
- economic self-interest, 346
- economic viability of national old-age security systems, 321
- educational groups
  - bequest magnitudes by age profile, 93
  - calculating retirement age by, 91
  - DC plan effects, 123

Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

## Index

359

- evenly dividing between exponential and hyperbolic consumers, 134
- income regressions for, 88
- population weights for, 87
- probabilities of receiving a bequest, 92
- time preference parameters representing, 97
- welfare impact of DC plans on, 131, 134
- education-cost parameter in the political economy model, 325
- elderly dependency ratio, 281
- employee contribution cap on DC plans, 84
- employers
  - contributions to 401(k) plans, 116
  - matching of DC plan contributions, 94
- endogenous heterogeneity in implicit patience levels, 106
- endogenous production of capital, 270
- endogenous rates of return, 168
- endowment of a household, 221
- envelope theorem, 167, 178
- equilibrium
  - as fixed point in the strategy space, 86
  - in the pension alternatives model, 214–15
  - with social security, 59
  - types of, 154
- equilibrium asset returns, 271
- equilibrium domain of the hyperbolic model, 86
- equilibrium effects
  - contribution to welfare loss, 232
  - isolating, 234
- equilibrium equations, solving simultaneously, 168
- equilibrium price
  - of capital, 308, 318
  - of risky land, 162
- equilibrium strategies, solving for, 86
- equity investment
  - compared to a risky asset, 256
  - compared to government bonds, 3
  - no gain in risk-adjusted return over government bonds, 323
- equity market returns in Canada and the U.K., 294
- equity ownership, home bias in, 303
- equity premium
  - Baby Boom effects on, 271
  - defined as, 155
  - equal to the risk premium, 322
  - in models with nontrivial production sectors, 248
- equity shares, age profile of, 278
- estate tax rate, 121
- estate taxation, eliminating, 236
- estate taxes. *See* accidental bequests
- EU (European Union). *See also specific country*
  - baseline path with open economies, 35
  - capital shortages, 29
  - capital stock, 29, 33
  - closed economy simulation results, 27
  - consumption tax rate, 31
  - current pension systems insolvent, 324
  - doubling immigration, 31, 36
  - fertility rate, 16
  - impact of immigration policy, 30
  - interest rate increase, 29
  - labor supply growth, 29
  - life expectancy, 16
  - macroeconomic variables in 2000, 25
  - old-age dependency ratios, 1
  - open economy simulation results, 38
  - payroll-tax rate increases, 29
  - population decrease, 16
  - privatizing pensions, 42
  - wage-tax rate increases, 29
  - welfare effects of privatizing pensions, 33
- Euler equation
  - generalized, 103–6
  - generalizing, 300
  - inadequacies of the linearized, 114
  - indeterminacy in, 265
  - linearization or aggregation of, 95
  - sensitivity of results to alternative demographic variables, 301
  - standard, 105
  - Taylor expansions of, 113–14
- Europe. *See* EU (European Union)
- European citizens, opinions on the welfare state, 335
- European Union. *See* EU
- exogenous shocks, 255
- expectations
  - mutations in, 69
  - possible major shift in, 69
- expected lifetime utility, 149
- expected utility maximization, 149
- exponential consumers, 96
  - calibrated long-term discount rates, 98
  - compared to hyperbolic, 138
  - consumption functions, 99
  - DC plan savings, 130
  - elasticities of intertemporal substitution, 101
  - government revenue as a share of labor income, 124, 129
  - high school graduate group without a DC plan, 134
  - less impatient in the hybrid simulation, 135
  - lower new savings compared to hyperbolic, 125
  - modeling together with hyperbolic, 133–7
  - savings rates with CRRA equal to 3, 128
- exponential discount function, 78, 79

Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

360

## Index

- exponential economies, 96, 121
- exponential households
  - DC plans impact on, 137
  - liquidity constrained, 107
  - savings rates results for CRRA, 121
  - simulated asset, income, and consumption paths, 118
  - welfare effects, 127
  - welfare impact of DC plans on, 131
- externalities
  - associated with retirement savings, 243
- factor prices, 24
- Federal Advisory Council 1996
  - reform proposals with specific alternatives, 215
- federal government. *See* government
- fertility rates
  - applying past relative, 15
  - projected for the United States, EU, and Japan, 16
- financial assets
  - limited decline as individuals age, 277
  - projected demand for each year between 1925 and 2050, 281
- financial implications of the aging population, 50
- firms
  - production decisions to maximize profit, 153
  - profit maximization of, 153
  - safe production chosen by, 153
  - satisfying profit maximization, 214
- fiscal deficits
  - placing a ceiling on, 324
  - relaxing the ceiling on, 329–31
- fiscal policy, distortionary effects of, 207
- fixed effects, 241–2
  - as a component of labor market uncertainty, 241
  - in the endowment of agents, 210
  - enhancing risk-sharing benefits, 241
  - incorporating agent-specific, 222
  - incorporating into the pension alternatives model, 223
- Fixed-Tax-Rates calculations, 65
- flat age-wealth cross sectional profile, 275
- flat longitudinal panel, 221
- floor on retirement income, 203
- 401(k) plans
  - institutional features of, 116–17
  - introduction of, 97
  - loan provisions, 117
  - regulations motivating DC plan assumptions, 84
  - simulations, 117–19
- framing biases, 337
- France, 335
- fully funded component of alternative social security plans, 212
- future benefits, voting for, 59
- futures contract, 150
- game-theoretic reasoning, 59, 326
- Gauss-Seidel algorithm, 24
- general equilibrium effects, 231, 234, 238
  - contribution to welfare loss, 232
  - welfare gain associated with social security reform, 232
  - welfare gains moving from the SQ, 235
  - on welfare loss, 234–6
- general equilibrium issues, 68
- general equilibrium models
  - with convex adjustment costs, 308
  - link between age structure and returns, 302
  - quantitative, 206
- general equilibrium repercussions of social security portfolio diversification, 145
- generalized Euler equation, 103–6
- generalized method of moments (GMM), 90, 222, 223
- generational account of the old cohort, 56
- generational contracting explanation, 59
- generational imbalances, neglected, 324
- generations
  - allocation of risk between, 5
  - future paying the cost of transition, 220
  - shifting risk within and between, 184
  - transferring within and across, 190
  - unfunded transfer to initial, 207, 218
- Germany
  - awareness of unsustainability of the pension system, 338
  - decline in real return on capital, 249
  - first survey wave, 335
  - generous PAYG pension system, 333
  - grim demographics, 321
  - indexation of pensions, 334
  - multipillar pension system, 334
  - opinions on the effectiveness of pension reforms, 338
  - pension reforms, 333, 338, 348–50
  - preferences over reform options, 341
  - projected doubling of the old-age dependency ratio, 334
  - public pension expenditures, 333
  - reducing the status quo bias, 349
  - replacement rate, 333
  - retirement age, 333
  - second survey wave, 335
  - survey on reform options, 9
- globalization, impact on the welfare state, 324



Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

## Index

361

- GMM (generalized method of moments), 90, 222, 223
- government
- assigning a lower cost to stock market risk, 194
  - disguising equivalence of investing in stocks and bonds, 194
  - financing expenditures, 20
  - general expenditures of, 21
  - issuing debt to meet a liability, 322
  - operating budget directly affected by social security, 207
  - in the pension alternatives model, 211
  - positive role of, 55
  - putting some of the trust fund in equities, 323
  - receipts ratio to total labor income, 121
  - social security system and, 151–2
  - spreading risk over successive cohorts, 172
  - in the world economy model, 20–1
- government bonds. *See also* bonds
- compared to equity investment, 3
  - increasing the supply available to savers, 160
  - interest rate redistributing income, 158
  - interest rate redistributing wealth, 160
- government budget constraint in the pension alternatives model, 214
- government debt
- impact on the effects of demographic change, 55–7
  - interest rate increased by trust fund purchases, 165
  - interest rate on, 157
  - in the trust fund, 151
- government revenue
- defined as, 124
  - percentage as a share of labor income, 129
  - as a percentage of labor income, 124
  - for varying time preference parameters, 133
- government trust fund. *See* trust fund
- gratification, delayed versus instantaneous, 74
- hazard rates
- of receiving a bequest, 83
  - of survival, 87
- health care expenditures profiles, 23
- heterogeneity
- in production, 146
  - in saving behavior, 146
- heterogeneous discount rates, 114
- heuristic model, 308, 309–12
- HI (hospital insurance fund)
- critical ages for voters, 64
  - medical services provided by, 57
  - projected outlays and revenues of, 51
- Hicksian substitutes, goods as, 150
- high income households, lower mortality rates of, 278
- high net worth households, 273
- high school dropouts
- calibrated long-term discount rates, 98
  - elasticities of intertemporal substitution, 101
  - liquidity constrained, 108, 111
  - welfare impact of DC plans, 134
- high school graduate group
- calibrated long-term discount rates, 98
  - coefficient of relative risk aversion equal to 1, 107
  - consumption, pretax income, and asset accommodation, 99
  - elasticities of intertemporal substitution, 101
  - life-cycle choices of, 118
  - liquidity constrained, 109, 112, 135
  - varying early-withdrawal penalties, 135
  - without a DC plan, 134
- higher average rate of return of stock market investments, 183
- higher savings rates, 185
- historical equity premium, 256, 263
- Hodrick-Prescott filter, 255
- hospital insurance fund. *See* HI
- hours worked, 221
- house prices
- related to age-specific asset demands, 286
  - sharp decline predicted, 284
- households. *See also* hyperbolic households
- average welfare of, 127
  - composition changes as agents age, 17
  - constant size for the hyperbolic model, 88
  - endowment of, 221
  - lower mortality rate of high income, 278
  - net worth, 273, 277
  - percentage liquidity constrained, 107
  - preferences and budget constraints, 17–20
  - in the SCF, 273
  - slow decumulation of assets after retirement, 272
  - wealth held at different ages, 272
- housing demand, 281
- human capital, capital per unit of, 29
- hybrid economy, impact of DC plans, 135
- hybrid system, 212
- hyperbolas, modeling discount functions, 76
- hyperbolic consumers, 76, 96
- calibrated long-term discount rates, 98
  - commitment devices available to, 139
  - compared to exponential, 138
  - consumption functions compared to exponential, 99
  - DC plan savings representing new, 130

Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

362

## Index

- hyperbolic consumers (*cont.*)
  - elasticities of intertemporal substitution, 101
  - facing a realistic life-cycle decision problem, 77
  - government revenue as a share of labor income, 124, 129
  - high school graduate group without a DC plan, 134
  - higher new savings compared to exponential, 125
  - impatient behavior of, 106
  - intrapersonal strategic struggle, 80
  - levels of wealth and, 106
  - with low levels of cash on hand, 106
  - lower discount rates, 98
  - modeling together with exponential, 133–7
  - more impatient in the hybrid simulation, 135
  - response to penalties for early withdrawal, 123
  - savings rates with CRRA equal to 3, 128
  - sensitivity to elimination of employer matching, 123
  - simulation model of the behavior of, 80–6
- hyperbolic discount functions, 77–80
  - alternative approximation to, 139
  - assumed for consumers, 77
  - graph of, 78
  - implying declining discount rates, 79
  - inducing dynamically inconsistent preferences, 80
- hyperbolic discounting
  - explaining Dynan's results, 114
  - three-period model, 5
  - undersaving of the young and, 5
- hyperbolic economies
  - DC plans impact on, 123
  - simulating, 96
- hyperbolic households. *See also* households
  - commitment valued by, 137
  - DC plans impact on, 137
  - liquidity constraints, 107
  - responding more favorably to DC plans, 127
  - simulated asset, income, and consumption paths, 119
  - welfare effects, 127
  - welfare impact of DC plans on, 131
- hyperbolic models
  - analyzing the problem of undersaving, 76
  - cruder than exponential analogs, 80
- hyperbolic preferences, 105
- hypothetical situation bias, 337
- IA (Individual Accounts) plan, 215
- Ibbotson Associates, 287
- idiosyncratic endowment process, 222
- idiosyncratic labor income, 225, 238
- idiosyncratic risk, 207
  - fundamental source of, 220
  - measuring, 220–5
  - modifying to include fixed effects, 241
- idiosyncratic shocks, 213
- illiquid assets, 107
  - availability of, 76
  - constraining future choice sets, 116
- illiquid markets, transaction costs of trading in, 201
- immediate gratification, 74
- immigrants in the world economy model, 14
- immigration
  - age-specific, 15
  - for the baseline path, 15
  - doubling in open economies, 36
  - doubling in the world economic model, 30–1
  - as a false elixir, 3
  - fiscal implication of increased, 12
- imperfect annuities
  - accounting for markets, 56
  - effects on welfare loss, 236–7
  - removing, 243
- incentives for work and savings, 202
- income
  - broad definition for the hyperbolic model, 87
  - classes for cohorts, 15
  - deflating nominal using the CPI, 221
  - distribution change, 159
  - inequality, 70
  - stochastic variation in, 96
  - uncertainty reducing behavioral pathologies, 90
- income redistribution
  - pay-go systems often effective in, 187
  - as a public pension system goal, 184
- income risk-sharing
  - changes in, 231
  - contribution to welfare loss, 232
  - effects on welfare loss, 237–8
- income shocks, persistence of, 89
- incomplete markets, 239
- increasing relative risk aversion (IRRA), 150
- indebtedness
  - adjustment, 208
  - incorporating into the pension alternatives model, 229
  - with respect to the SQ environment, 218
- indexation rate, 216
- Individual Accounts plan. *See* IA plan
- individual accounts-based systems, 2

- individual characteristics, opposition to pension reform and, 344
- individual fixed effect on preretirement nonasset income, 88
- individual optimization problems, 214
- individual portfolio risk, 192
- Individual Retirement Accounts (IRAs), 97, 323
- individual risk preferences, 190
- individual risk-taking, 200
- individuals. *See also* citizens; consumers
  - asset holdings of older, 275
  - informed about pension systems, 337–40
  - net present value of benefits, 63
  - surviving into retirement, 54
- induction algorithm, 86
- industrialized countries. *See also* nations; *specific nations*
  - dependency ratios for, 196
- infinitely lived assets, 161–3
- informed individuals, 337–40
- INGENUE (2002) team, 12
- inheritances
  - age distribution of, 13, 91
  - of agents, 18
  - modeling, 13
- initial generations. *See* generations
- initial old, cost of the transfer to, 220
- instantaneous gratification
  - erring in the direction of, 74
  - short-run desire for, 78
  - short-run preferences for, 76
- institutional constraints, 8
- insurance provision, 184
- integrated labor income process, 82
- intentions and actions, gap between, 73, 74–5
- interest payments on government debt, 151
- interest rates
  - average realized short-term real, 289
  - changes requiring a change in income taxes, 158
  - decreasing land prices, 162
  - on government debt, 157
  - long-run increases in, 29
  - lowered by higher survival rates, 54
  - pretax real, 94
  - sensitivity to changes, 100
- intergenerational insurance, defined-contribution social security and, 250
- intergenerational reallocation of transfers, 346
- intergenerational redistribution
  - associated with a consumption tax, 33
  - of changing the financing of Social Security, 173
  - between old savers and later cohorts, 174
  - reform option implications for, 344
- social security, debt, and direct transfers, 55
- of wealth, 161
- intergenerational risk sharing, 5
- intergenerational selfishness, 335, 347, 349
- intergenerational social contract, 326
- internal rate of return (IRR) on expected social security contributions, 218–19
- international tax competition, 324
- intertemporal arguments, 59
- intertemporal dimension of social security, 49
- intertemporal elasticity of substitution, *See also* intertemporal substitution
- intertemporal models
  - literature on, 59
  - of social security, 4, 49
  - studying shifting age structures, 271
  - for voting in favor of social security, 59
- intertemporal substitution. *See also* intertemporal elasticity of substitution
  - elasticity of, 100
  - elasticity rising as education increases, 100
  - hyperbolic elasticity of, 103
  - measured elasticity of, 95, 96
- interviews for the pension system survey, 337
- intracohort income inequality, 69
- intrahousehold bequests, 92
- intrapersonal games, 80, 86
- invertible matrix, 169
- investment behavior, 264
- investment opportunities, short-term, 148
- investment-based pension systems, 191
- investment-capital ratio, 317
- investment-output ratio, 317
- investments. *See also* risky investments; safe investments
  - general equilibrium ramifications, 145
  - making well-diversified in a developing stock market, 199
  - marginal costs of, 22
- investor, utility function of the representative, 300
- IRAs (individual retirement accounts), 97, 323
- Italy
  - awareness of the unsustainability of the pension system, 338
  - doubling of the old-age dependency ratio, 334
  - first survey wave, 335
  - generous PAYG pension system, 333
  - indexation of pensions, 334
  - opinions on the effectiveness of pension reforms, 338
  - pension reforms, 338
  - preferences over reform options, 341

- Italy (*cont.*)  
   public pension expenditures, 333  
   replacement rate, 333  
   retirement age, 333  
   second survey wave, 335  
   spending on pensions, 321  
   survey on reform options, 9  
   virtually funded pension regime, 334  
 iterated expectations, 104
- Japan. *See also* East Asia  
   baseline path with open economies, 35  
   capital stock, 29  
   closed economy simulation results, 28  
   consumption tax rate, 31  
   doubling immigration, 31, 36  
   effect of capital shortages, 29  
   fertility rate, 16  
   immigration policy, 31  
   increasing capital stocks, 33  
   interest rate increase, 29  
   labor supply growth, 29  
   life expectancy, 16  
   macroeconomic variables in 2000, 25  
   old-age dependency ratio, 1  
   open economy simulation results, 39  
   payroll tax rate increases, 29  
   population decrease from 2000 to 2100, 16  
   privatizing pensions, 33, 42  
   wage-tax rate increases, 29
- key decision makers, 335
- KID function, 17
- knife-edge stationary equilibria, 154
- labor  
   assumed to be a separable input from capital, 172  
   as a nonseparable input to production, 168  
 labor and pension income domain, 87–91  
 labor efficiency units, 220  
 labor force  
   growth rate of the U.S., 44  
   households in, 89  
 labor income  
   of agents, 19  
   government revenue as a percentage of, 124, 129  
 labor income domain of the hyperbolic model, 82  
 labor income payments, reducing all  
   preretirement, 84  
 labor income risk-sharing. *See* income risk-sharing  
 labor market  
   earnings, 221  
   risks, 208  
   uncertainty, 241  
 labor supply  
   of agents, 20  
   augmented by technical progress, 25  
   decision, 207  
   in the political economy model, 325  
   in the public pension incentives model, 203  
   reductions in, 33  
 land. *See also* risky land; safe land  
   allowing for distinct models of, 168  
   old savers affected by change in the value of, 164  
   one-period gross return from purchasing, 162  
   price of, 162  
   stationary equilibrium with, 163  
   stationary equilibrium without, 152–4  
   worker utility not affected by prices of, 178  
 large corporate stocks, 287. *See also* stock  
 “latent” altruism, 49  
 Latin America. *See also specific countries*  
   public pension assets allocated to domestic equities, 200  
   recent pension reforms, 195  
   restricting investment choices to diversified funds, 200  
 life-cycle  
   of agents, 14  
   saving, 74  
 life expectancy  
   effect on savings, 54  
   increase in, 11, 50, 334  
   projected, 16  
   rising, 44, 50, 57  
 life-cycle models, 3, 13  
 lifespan uncertainty, 13  
 lifetime annuity, 184. *See also* annuities  
 lifetime budget constraint, 314  
 lifetime consumption, Baby Boomers better off, 260  
 lifetime resources  
   of a cohort, 316  
   of a consumer, 314  
 lifetime utilities  
   of generations, 17–18  
   maximizing, 13  
   of workers, 151  
 lifetime utility function, 203  
 lifetime wages, retirement benefits as function of, 70  
 limited diversification, argument for, 156  
 linear model  
   generalizing, 170  
   safe, 172

Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

## Index

365

- linear short-term technology, 148
- linearized Euler equation, 114
- liquid assets
  - definition of, 107
  - holdings, 83
- liquidity constrained consumers, 107, 111
- liquidity constrained high school graduates, 135
- liquidity constrained households, 107
- liquidity constraints
  - binding, 107–14
  - hyperbolic consumers likely to face binding, 77
- loan provisions for 401(k) plans, 117
- longitudinal panels of PSID household data, 221
- long-lived assets, 161, 166
- long-term capital values, 172
- long-term discount rates, 98
- long-term government bonds, 287
- low-income workers, 70. *See also* workers
- macroeconomic structures of open economies, 35
- Maintenance of Benefits plan, 215
- majority support
  - as a necessary condition for social security, 47
  - overwhelming for social security, 67
  - for social security, 49
- mandatory saving
  - as the second tier of a pension system, 185
- marginal propensities to consume
  - intermediate values of, 106
  - polar cases of, 105–6
- marginal return from working, 204
- marginal social benefit to diversification, 172
- market clearing
  - reducing to a single equation, 157
  - in the risky good market, 153
  - in terms of consumption demands, 153
- market liquidity, 201
- market meltdown
  - attenuated by substantial assets held until death, 311
  - caused by Baby Boomers retirement, 7–8
  - finding contrasting with, 281
  - hypothesis, 307
  - independent of the strength of the bequest motive, 318
  - recent theoretical models, 307
- market price of risk, 194
- Markov equilibria, 86
- match payments, employers offsetting, 84
- maximizing consumer, 75
- MB (Maintenance of Benefits) plan, 215
- mean holdings versus median holdings, 274
- mechanisms, inducing 401(k) plan contributions, 116
- median age of the U.S. population, 280
- median voter
  - age of, 60–1
  - cost-of-education parameter, 328
  - rise in the age of, 61
- medical benefits, rising value of, 64
- medical care, rising cost of, 57–8
- medical needs, strongly correlated with age, 57
- medical services
  - incentives of insured patients to overuse, 58
  - privately funded, 57
  - share in total spending, 58
- medical spending
  - efficiency of a growing share of, 58
  - increasing the growth of Medicare, 52
- Medicare
  - costs projected by SSA, 44
  - payroll tax rate for, 20
  - potential inability to handle moral hazard problems, 71
  - projections for, 51
  - total cost exceeding retirement insurance, 52
  - uncertain cost, 69
- Medicare Part A. *See* HI
- Medicare Part B, 56
- meltdown. *See* market meltdown
- Mexico, pension reforms, 195, 201. *See also* Latin America
- middle age as the most risk-averse group, 299
- missing precautionary savings, 115
- models
  - bequest motive, 308
  - Diamond two-period OG, 54
  - dynamic life-cycle, 13
  - general equilibrium, open-economy, 12
  - incentives for work and savings, 202–4
  - large open economy, 12
  - overlapping generation, 12
  - pension alternatives, 209–15
  - political economy, 325–8
  - quantitative general equilibrium of pension alternatives, 206
  - simulation of the behavior of hyperbolic consumers, 80–6
  - stock and bonds returns, 248, 250–2
- Modigliani Miller theorem, 161, 190
- monetary policy, 304
- “money’s worth” comparisons of rates of return, 191
- monozygotic reproduction, 13
- monthly retirement benefits. *See* retirement benefits
- moral commitment, social security as a, 47
- moral hazard, 58, 185

Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

366

## Index

- mortality
  - assumptions for the hyperbolic model, 87
  - effect on asset holding, 278–9
- mortality risk, 206
  - for an agent, 210
  - eliminating the need to hedge, 239
  - isolating effects related to, 236
- multipillar pension system, 348
- “mutant” expectations, 69
- myopic agents, 149
- naïf assumption, 81
- narrow pre-funding, 188
- national aggregates, 119
- national income, 24
- National Income and Product Accounts, 301
- national old-age security systems, 321. *See also* social security system
- national savings
  - bias against finding that DC plans increase, 120
  - increasing as a public pension system goal, 185
  - relative to the no DC plan economy, 121
- nations. *See also* industrialized countries; *specific nations*
  - investment-based pension systems, 191
  - widely disparate sizes of capital markets, 294
- net cash outflows from the corporate sector, 285
- net financial assets
  - age-specific, 274
  - no decline in old age, 277
  - no evident decline in, 275
- net present value. *See* NPV
- net risk position for an individual, 193
- net worth, 97, 275
  - age-specific, 274
  - definition of, 107
  - held by individuals in an age group, 276
  - mortality correlated with, 278
  - peak for, 277
  - projected demand for each year, 281
- nondurable consumption, 301
- nonsavers, workers modeled as, 150
- normal goods, 150
- normative saving rates, 76
- notation for welfare loss, 231
- NPV (net present value) of social security, 62, 68
- numerical simulation model, 76
- OASI (Retirement Insurance Fund)
  - critical ages for voters, 64
  - funding shortfall program, 50
  - rising cost projected by SSA, 44
- OG model
  - diamond two-period, 54
- macroeconomic effects of alternative policies, 56
- many-period with stochastic survival, 62
- reinterpreting old-age consumption, 57
- within-cohort incomes and mutual altruism, 71
- old-age dependency ratio, 1, 334
- old consumers, 316
- “old dependency ratio,” 196
- old savers, 164. *See also* savers.
- old workers. *See also* workers
  - consumption of, 264
  - forcing to hold risky capital, 249, 256
  - investing in bonds, 256
  - seeking to reduce consumption risk, 248
  - total wealth, 264
- old working age for agents, 250
- older individuals, asset holdings of, 275
- OLG model. *See* overlapping generations model
- “one-country time-series approach,” 294
- open economies
  - compared to closed economies, 22
  - initial equilibrium and baseline path in, 33–6
  - policy reforms in, 36–42
  - year 2000 baseline path, 35
- operational altruism, 49
- opposition to pension reform, 343–8
- opting out of pension systems, popularity of in Germany, 341
- opting-out proposals, 341
- ordered probit regression, 344
- output
  - produced with Cobb–Douglas technology, 54
  - safe and risky, 146
- overconsumption, 74
- overfitting, 285
- overhang of existing pension systems, 188
- overlapping generations economy, equilibrium of, 148
- overlapping generations model (OLG), 12, 207, 325–8
  - achieving aggregation through, 120
  - asset-life cycle in, 272
  - for pension alternatives, 209–15
- overlapping generations neoclassical growth model, 272
- Panel Study of Income Dynamics. *See* PSID
- parameterized expectations approach. *See* PEA
- parametric approach, 300
- partial commitment devices, 116
- partial equilibrium reasoning, 68
- partially funded defined benefit system, 151
- pathologies in discrete time simulations, 96
- patience levels, 106

Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

## Index

367

- pay-as-you-go (PAYG) pension systems, 186
  - abolition of, 218
  - versus accounts-based, 2
  - compared to prefunded, 188
  - creating a drag on the growth of capital, 187
  - imbalances caused by demographic and economic shocks, 187
  - increasing fragility of, 323
  - in need of reform in European countries, 333
  - no invested assets, 191
  - in the political economy model, 326
  - rates of return of, 191
  - reduced incentive for current workers to save, 187
  - shifting to individual retirement accounts, 9
  - sunk cost of the windfall gain to the first generation, 191
  - understanding of, 338
  - as a zero-sum game, 191
- pay-as-you-go component
  - of alternative social security plans, 212
  - of the pension alternatives model, 217
  - of the PSA proposal, 217
  - of social security, 214
- payroll tax
  - base, 20
  - distortionary effects of, 207
  - imposed by social security, 63
  - rates, 29
  - shared by OASI and Medicare, 45
- P/D ratio. *See* price-dividend ratio
- PEA (parameterized expectations approach), 256
  - proceeding in a step-by-step approach, 265
  - replacing conditional expectations, 265
- penalties for early withdrawal. *See* early-withdrawal penalty
- pension alternatives model, 206, 209–15
  - calibration of, 220–5
  - implementing, 224–5
  - quantitative results, 225–42
- pension assets. *See also* public pension assets
  - in developing countries, 199–201
  - domestic investment of, 200
- pension benefits
  - of agents, 21
  - of a cohort, 171
  - contingent on trust fund returns, 193
  - defined, 170–1
  - interpretation of promised, 47
  - minimum level for the SQ economy, 216
  - in the political economy model, 326
  - present value of at retirement, 63
  - providing only to those with very low savings, 185
  - recognizing as taxable income, 213
  - regressive with respect to past contributions, 212
  - smoothing in a defined-benefits system, 171
  - taxation of in the pension alternatives model, 217
  - unchanged with trust fund half invested in stocks, 193
  - voting for future, 59
- pension crisis, awareness of, 338
- pension gap, filling with occupational and individual pensions, 348
- pension plans, categories of, 192
- pension policy, distortionary effects of, 207
- pension reforms
  - addressing the unsustainability of current pension policy, 343
  - in Federal Advisory Council 1996 proposals, 215
  - in Germany, 348–50
  - intergenerational selfishness as an explanation for opposition to, 349
  - opinions on the effectiveness of, 338
  - opposition and individual characteristics, 344
  - opposition to, 343–8
  - political difficulties of, 335
  - political viability of, 8
  - popularity of, 340, 341
- pension structures, political risks associated with, 195
- pension system survey, 336
- pension systems. *See also* public pension systems
  - awareness of unsustainability of, 338
  - constructed as three-tiered structures, 185
  - fostering a transition to more provision for old age, 350
  - increasing future resources available to, 186
  - limited in many developing countries, 195
  - viability in industrial countries, 1
- pensions
  - costs and future trends, 338
  - indexation of, 334
  - privatizing, 31–3, 42
- per-capita cost increases, caused by rising life-expectancy, 50
- per-capita magnitudes, linking to national aggregates, 119
- perfect annuities, 236
- perfect commitment
  - compared to no, 115
  - in a one-asset economy, 115–16
- perfect rationality, assumption of, 81
- persistent component of an agent's endowment, 210
- Personal Security Accounts plan. *See* PSA plan



Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

368

## Index

- policy
  - politics affecting decisions, 335
  - preferences, 336
  - reforms in closed economies, 30–3
- policy makers, rules set by, 202
- political economy
  - dilemma created by moral hazard, 58
  - equilibrium for the social security tax, 327
  - equilibrium tax rate, 327–8
  - model, 325–8
  - of social security, 58–69
  - two-stage process, 331
- political power balance, 323
- political risk, 195, 200
- political system, inertia of the U.S., 69
- politics of social security, 49
- popularity of pension reform options, 340–2
- population
  - age-specific, 15
  - changes, 16
  - growth, 272
  - growth rate, 272
  - increases, 16
  - shocks compared to production shocks, 255
- population age structure
  - low-frequency variation in, 291
  - new evidence on relating to asset returns, 287
  - previous empirical evidence, 284–7
  - slowly evolving character of, 286
- population aging. *See* aging
- population vector, 15
- portfolio, adjusting for workers, 156
- portfolio behavior
  - of agents in the stock and bonds returns model, 248
  - generated by the stock and bonds returns model, 256
  - in the unconstrained model, 257
- portfolio diversification. *See* diversification
- postretirement income, 90
- postwar baby bust, 257
- Poterba's heuristic model, 308
- PP (privately provided) economy, 217
  - contributing factors to welfare loss, 232
  - eliminating estate taxation, 236
  - properties of the stationary steady state, 228
  - society saving more, 232
  - welfare effects of capital taxation, 234
  - welfare implications incorporating debt adjustment, 229
  - welfare loss with fixed effects, 241
- precautionary saving, 77, 113–14, 115
- preference parameters
  - for the hyperbolic model, 95–8
  - for the world economy model, 22
- preference structure of the world economy model, 17–18
- preferences
  - for agents, 210
  - dynamic inconsistency in, 80, 86
  - gap between short- and long-term, 78
  - for individual agents, 225
  - long-term versus short-term, 77
- preferences domain of the hyperbolic model, 85–6
- preference-technology framework, 58
- prefunded public pension systems, 187–9
  - costs and benefits of transitioning to, 192
  - distinguishing from “pay-go,” 186
- prefunding, narrow compared to broad, 188
- preretirement income, 88
- preretirement labor income payments, 84
- preretirement nonasset income, 88
- preretirement wealth holding, 97
- present discounted value (PDV) of taxes, 153
- present value of taxes, 191
- prewar baby bust, 257
- price dividend ratios, 292–4, 297
- prices
  - general equilibrium ramifications, 145
  - for solving welfare measure maximization problems, 228
- primary wage earner, 184
- private accounts
  - allowing individuals to assume risk, 190
  - high cost of transactions, 190
  - intergenerational transfers within and across, 190
  - transparency principle favoring, 190
  - versus trust fund investments, 190–1
- private savings. *See also* savings
  - choosing in the public pension incentives model, 203
  - as the third tier of a pension system, 185
- privately provided pensions. *See* PP economy
- privatization of pensions
  - advantageous macroeconomic effects of, 33
  - compared to a defined-benefit system, 252
  - lower interest rates as an argument against, 68
  - in an open economy, 42
  - rates of return projected, 322
  - in the world economy model, 31–3
- probit formulation, 83
- probit regression, 92, 344
- problem solving, 80
- procrastination, 335, 347
- production. *See also* risky production; short-term production
  - decisions of firms, 153
  - function, 211, 309



- heterogeneity in, 146
- labor as a nonseparable input to, 168
- technologies, 313–14
- in the world economy model, 21–2
- productivity
  - effects of a changing age structure, 270
  - shocks compared to population shocks, 255
- progressive tax structure, 85, 94
- projected asset-demand variable
  - equal weight on retired individuals and prime-age workers, 298
  - excluding defined-benefit pension plans currently, 303
  - projected to decline, 303
  - relating to asset returns and asset prices, 295–9
- projected asset demands, 281
  - calculating, 308
  - price-dividend ratios and, 297, 302
- pro-tax coalition of old and young, 327
- PSA (Personal Security Accounts) economy
  - contributing factors to welfare loss, 232
  - eliminating estate taxation, 236
  - properties of the stationary steady state, 228
  - society saving more, 232
  - welfare effects of capital taxation, 233
  - welfare implications incorporating debt adjustment, 229
  - welfare loss with fixed effects, 241
- PSA (Personal Security Accounts) plan, 215, 216–17
- PSID (Panel Study of Income Dynamics), 87
  - age-dependent, cross-sectional variance from, 223
  - measuring types of labor-market risks, 220
  - panel of households, 221
- public pension assets. *See also* pension assets
  - asset allocation restrictions on Latin American, 200
  - contemplating stock market investment of, 183
  - investing in stocks, 6
- public pension expenditures in Germany and Italy, 333
- public pension funds
  - investments restricted to government securities, 189
  - principles for designing, 184–6
- public pension systems. *See also* pension systems
  - complexity of, 185
  - demographic pressure on, 186
  - goals of, 184
  - history of stock-market investments in, 202
  - ideal time to restructure, 196
  - ignoring or underestimating the cost of, 338
  - incentives for work and savings under, 202–4
  - universal participation in, 184
  - publicly held debt, 56
- quasi-hyperbolic discount function, 78, 85
  - finite horizon for, 78
  - graph of, 78
  - no direct analog in continuous time, 139
- rate-of-return argument for accounts-based systems, 2
- rate-of-return inefficiency, with pay-go, 192
- rates of return
  - assuming a positive safe, 149
  - comparing, 191–2
  - government financing obligations below, 219
- rational agents, 149
- rational expectations general equilibrium model, 310, 312–18
- real wages
  - covariance with stock returns, 156
  - decline in, 29
- redistributive nature of social security benefit rules, 159
- redistributive tier of a pension system, 185
- reform options. *See* pension reforms
- regressive benefits, 212
- regular economies, 169
- regularity hypothesis, 179
- reinforcement for savings decisions, 81
- reinforcement learning literature, 81
- relative risk aversion. *See* coefficient of relative risk aversion
- rental of earned capital, 314
- replacement rate
  - of actual social security benefits, 252
  - in Germany and Italy, 333
- retirees
  - asset demands by, 319
  - consumption of, 264
  - funding of medical care, 57
  - in the pension alternatives model, 210
  - ratio to contributors, 50
- retirement
  - asset decumulation during, 307
  - decumulating at, 273
  - early discouraged in Germany, 334
  - income replacement rates at, 91
  - in the pension alternatives model, 225
  - privately owned accounts in the PSA plan, 217
  - in the stock and bonds return model, 250

- retirement age
  - calculating by educational group, 91
  - early average in German and Italy, 333
- retirement benefits
  - as a concave function of average lifetime wages, 69
  - cost of, 44
  - as function of lifetime wages, 70
  - as share of GDP, 50
  - of social security, 63
  - variability of, 63
  - as variable, 152
- Retirement Confidence Survey, 73
- retirement income of workers, 156
- Retirement Insurance Fund. *See* OASI
- retirement savings
  - externality associated with, 243
  - mechanisms for, 4–8
  - returns earned by Baby Boomers, 260
- return risk, spreading over many generations, 171
- revealed preference data versus stated preferences, 337
- reversals in preferences, 78
- Riester reform, 338, 348
  - fairness of, 349
  - fostering an awareness of pension crisis, 348
  - lack of success of, 351
  - reducing the status quo bias, 349
- risk
  - allocating back, 189
  - diversifying, 194
  - ignoring the market price of, 194
  - market price of, 194
  - political, 195, 200
  - representing idiosyncratic, 207
  - shifting financial from the wealthy elite, 200
  - tracking the allocation of, 192–4
- risk and return, shifts in the distribution of, 192
- risk aversion
  - evidence of age-dependent, 284
  - increasing with age, 302
  - of savers, 155
- risk premium, 194
  - demographic shocks affecting, 271
  - equal to the equity premium, 322
  - forecasted lower when Baby Boomers retire, 249
  - generated by the stock and bonds returns model, 256
  - moving to benefit Baby Boomers, 260
  - rising from 1980 to 2000, 260
- risk-sharing
  - across generations, 152
  - benefits of social security, 241
  - benefits of the U.S. social security system, 7
  - intergenerational, 5
- technology, 243
  - tradeoff with savings distortion, 206
- risk tolerance
  - age-specific patterns of, 300
  - declining as households age, 284
  - relating age to, 299
- riskless returns, Baby Boom effect on, 271
- risky assets, 149. *See also* assets
  - Baby Boom effects on returns, 271
  - first bit of investment in, 155
  - in the trust fund, 151
- risky capital, 256, 257
- risky consumption. *See also* consumption
  - demand and supply for, 179
  - price of, 150
  - supply of, 163
- risky financial asset, 150
- risky investments. *See also* investments
  - defined-benefits system with, 171
  - expected return on, 154
  - increase in, 155
  - social security diversification with, 157–60
  - stimulated by social security diversification, 172
  - undertaking in equilibrium, 160
- risky land, 161. *See also* land
  - buying one unit of, 162
  - as the only source of risky consumption, 167
  - output increased by the supply of risky consumption, 163
  - price reduced by trust fund purchases, 165
- risky linear technology model, 172
- risky private securities, 189
- risky production, 163. *See also* production
- role of the state, 346
- Roy's identity, 167
- S&P 500, annual inflation-adjusted returns for, 256
- safe and risky output, 146
- safe asset, 149. *See also* assets
- safe bond, annualized expected returns, 257
- safe consumption. *See also* consumption
  - demand and supply for, 179
  - supply from the presence of land, 163
- safe financial asset, 150
- safe investments. *See also* investments
  - decreased by social security diversification, 172
  - economy without any, 157–60
  - social security diversification with, 154–7, 166–8
- safe land, 161. *See also* land
  - buying one unit of, 162
  - price reduced by trust fund purchases, 165
- safe linear model, 172. *See also* linear model
- safe linear technology, 148
- safe real investment in equilibrium, 153

Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

## Index

371

- safe technology, 168. *See also* technologies
- safety net, incentives for savings muted by, 185
- savers, 146
- as both demanders and suppliers of real investment, 153
  - changes in the utility of, 158
  - expected utility of, 167
  - income for, 169
  - interest rates, effects of increased, 159
  - as less tolerant on the margin than workers, 155
  - lower fraction of wealth invested in stocks, 156
  - maximizing expected lifetime utility of
    - consumption, 149
  - obtaining a benefit from trust fund diversification, 159
  - old affected by land values, 164
  - optimization problem, 152
  - owning productive sectors of the economy, 168
  - risk-averse, 155
  - in the social security diversification model, 149
- saving behavior
- heterogeneity in, 146
- saving policies, 117
- saving rates
- aggregate, 121
  - with CRRA equal to 3, 128
  - as the primary determinant of the capital stock, 199
  - in selected simulated economies, 122
  - survey data contrasting actual and normative, 75
  - for varying time preference parameters, 133
- savings. *See also* private savings
- calculating for DC plans, 125
  - DC plan contributions representing, 130
  - in DC plans, 133
  - disincentives in developing countries, 199
  - distortion tradeoff with risk-sharing, 206
  - effect of life-expectancy on, 54
  - interaction of annuities with aggregate, 238–9
  - minimizing the disincentives for, 185
  - precautionary, 113–14, 115
  - as the residual between income and consumption, 121
  - supplemental old-age, 329
- SCF (Survey of Consumer Finances), 273
- for 1983, 97
  - age-wealth profiles in, 273–9
  - cross-sectional age wealth profiles, 274
  - data analyzing age patterns in asset allocation, 248
  - liquidity-constrained consumers reported in, 107
  - measuring average levels of asset holdings, 273
  - percentage of liquidity-constrained consumers from, 111
  - relating age to risk tolerance, 299
  - repeated cross-sections of, 275
- self-confirming skepticism within the population, 71
- self-interest, 351
- selfishness, 335, 347, 349
- self-regulation, 80
- sequential equilibrium, 326
- Sharpe ratio, 250, 256, 263
- shell games, 189–90
- shocks
- demographic, 272, 304
  - estimation of unconditional moments for exogenous, 255
  - idiosyncratic, 213
  - persistence of income, 89
  - productivity, 255
- short-term assets, 163, 164. *See also* assets
- short-term production, 175. *See also* production
- simulations, 80
- skilled workers. *See also* workers
- less likely to oppose pension reform, 346
  - in the political economy model, 325
- Slutsky equation, 173, 174, 175, 176, 177
- SMI (Supplemental Medical Insurance), 57
- social contract, 322, 326
- social security
- basic nature of, 46
  - benefits, 156
  - building momentum for privatizing, 247
  - burden, 218–20
  - comparing environments with differing levels of, 219
  - criterion for viability, 49
  - current U.S. plan, 215
  - distortionary effect on capital accumulation, 211
  - effect of aging on, 328
  - effects of demographic change and, 55–7
  - existing law, 46
  - internal rate of return on contributions, 218–19
  - overwhelming majority support for, 67
  - payroll tax rate for, 20
  - political economy of, 58–69
  - politics of, 47, 49
  - portfolio diversification, 145
  - privatizing, 322
  - reforms, 331
  - as a response to the inadequacy of retirement saving, 156
  - role as a risk-sharing technology, 243

Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

372

## Index

- social security (*cont.*)  
 as a sequential equilibrium, 326  
 specifics of, 215–18  
 under strain from aging population, 328–9  
 as an unfunded pay-as-you-go system, 146  
 viability of, 71  
 welfare gain associated with abolishing, 243
- Social Security Administration (SSA)  
 alarming projections, 44  
 High Cost and Low Cost projections for critical age values, 65  
 intermediate projections as baseline, 50
- social security benefits, 213
- social security debt, 7, 211, 218–20, 243  
 financing a bond with face value equal to, 208  
 incorporated in comparisons, 207  
 measure of the gross magnitude of, 227
- social security diversification. *See also* trust fund diversification  
 aggregate investment and, 172  
 argument for limited, 156  
 with both safe and risky investment, 154–7  
 effect on social welfare, 176  
 effects in a generalized model, 168  
 effects on short-term prices and investments, 169  
 effects on young savers, 167  
 with only risk investment, 157–60  
 with only safe investment and land, 166–8  
 optional level of, 156  
 redistribution between savers and workers, 158  
 with risky investment and land, 163–6  
 welfare gains to nonsavers, 157
- social security diversification model  
 adding infinitely lived assets, 161–3  
 assumptions for, 147  
 extending to most investment technologies, 160
- Social Security income, 145
- social security portfolio policy. *See* trust fund portfolio
- social security system  
 debt-financed transfer to, 329  
 modeling, 151  
 in the pension alternatives model, 212–13
- social security tax, political-economy equilibrium for, 327
- social security trust fund. *See* trust fund
- social welfare, effect of social security diversification on, 176
- societal wealth, increase in, 236
- sophisticate model versus the naïf model, 81  
 sophisticates, 81
- Spain, first survey wave, 335
- splurges, 401(k) assets protected from, 116
- spouses  
 higher net worth of surviving, 279  
 not modeling the mortality of both, 87
- “spurious regression,” 290, 292, 294
- SQ (status quo) economy, 215–16  
 aggregate features of, 225  
 effects of capital income taxation, 232  
 eliminating estate taxation, 236  
 level of debt associated with, 229  
 properties of the stationary steady-state, 228
- SSA. *See* Social Security Administration
- SSI benefits. *See* Supplemental Social Security (SSI) benefits
- Stability and Growth Pact  
 in the EU, 8, 324  
 making fiscal constraints of more flexible, 331  
 political-economy impediments created by, 331
- standard Euler equation, 105
- stated preference questionnaire technique, 336
- stated preferences versus revealed preference data, 337
- stationary equilibrium  
 equations describing, 169  
 with land, 163  
 safe and risky assets held in, 155  
 without land, 152–4
- status quo. *See* SQ economy
- status quo as a majoritarian outcome, 335
- steady-state simulations, 120
- steady states, 208, 243
- stock  
 age-specific holdings, 274  
 correlation between population and real returns on, 285  
 downside risk of buying, 323  
 downturn in holdings at older ages, 275  
 effect of demographic variables on prices of, 308  
 equal value to bonds, 194  
 exposure of workers, 156  
 in government trust funds versus mandated private accounts, 190  
 increase in prices of, 307  
 investing internationally, 199  
 no clear link with population age structure, 279, 291  
 predicted decline in the price of, 307  
 projected demand for each year between 1925 and 2050, 281  
 purchasing from high wealth and older households, 192  
 real returns and measures of population age structure, 287

Cambridge University Press

0521844959 - Social Security Reform: Financial and Political Issues in International Perspective

Edited by Robin Brooks and Assaf Razin

Index

[More information](#)

## Index

373

- returns on, 151
- as a share of net financial assets, 278
- stock and bonds return model, 248, 250–2
  - calibration of, 252–6
  - comparing to reality, 256
- stock market
  - in developing countries, 195
  - historical performance of, 323
  - investments in, 323
  - optimism about, 68
- stock market investments
  - effect on the rate of capital formation, 186
  - financing, 186
  - increasing complexity of public pension systems, 185
  - potential value for a public pension system, 183
  - in public pensions, 6
- stock prices
  - demographic variables and, 292
  - projected wealth holdings and, 297
- stock returns
  - ignoring the riskiness of, 171
  - related to age-specific asset demands, 286
- stylized economy, 325
- stylized model. *See* heuristic model
- Supplemental Medical Insurance (SMI), 56, 57
- Supplemental Social Security (SSI) benefits, 67
- Survey of Consumer Finances. *See* SCF
- surveys
  - pension system survey, 336
  - PSID (Panel Study of Income Dynamics), 221
- survival
  - effect on wages and interest rates, 54
  - hazards rates of, 87
- surviving spouse, higher net worth of, 279
- survivor benefits, 64
- survivors premium, 236
- systematic mistakes, not allowed by economic theories, 75
- tax policy, short-run effects of, 117
- tax rates, time path of, 24
- tax risk, investing pension fund assets and, 193
- taxable benefits, 215, 216
- taxable income, recognizing benefits as, 213
- taxable wages, ceiling on, 20
- taxation, distortionary, 57
- tax-deferred defined-contribution pension plans. *See* DC pension plans
- taxes
  - of an agent, 19
  - determining to achieve budget balance, 211
  - raised by higher interest costs, 159
  - treated as benefit reductions, 64
- taxes domain of the hyperbolic model, 85, 94
- taxpayers
  - shifting risk back to future, 195
  - transferring risk to, 193
- Taylor expansions of the Euler equation, 113–14
- technical progress, augmenting labor supply, 25
- technological assumptions, 148
- technological change as a determinant of secular growth, 19
- technologies
  - linear short-term assumed, 148
  - marginal utility of beginning to use, 149
  - mixing investment in risky, 161
  - prices determined by, 154
  - recognition of the return from owning, 169
  - rent or profit from ownership of, 168
  - risky, 168
  - safe, 168
- TFP (total factor productivity)
  - sources of data, 255
  - wave-like pattern for long-run, 255
- time effects
  - in asset demands, 274
  - proxied by the unemployment rate, 88
- time endowment of successive generations, 19
- time preference parameters
  - hyperbolic effects, 139
  - for the hyperbolic model, 96–8
  - varying the value of, 132
- Time Series Moments parameters, 222
- total welfare loss, 231
- tradeoff between risk-sharing and savings
  - distortions, 206
- transaction costs
  - associated with illiquid markets, 201
  - reducing, 190
- transfers, intergenerational reallocation of, 346
- transition between steady states, 243
- transition burden
  - asymmetric opting-out proposal with, 341
  - awareness of, 344
- transitional dynamics, 220
- transitory component of an agent's endowment, 210
- transparency
  - favoring investing via private accounts, 190
  - maximizing for public pension systems, 185
  - observed market premium and, 195
- Treasury bills
  - annual inflation-adjusted returns for, 256
  - population age structure and asset returns, 288, 291
  - real returns and measures of population age structure, 287
  - return associated with population in prime saving years, 285

- Treasury securities, held by the social security trust fund, 55
- trigger strategy models, 59
- trust fund, 189
  - budget set in any period, 151
  - financing redemptions, 56
  - government, 189
  - proposal to shift half into stocks, 193–4
  - purchases of risky investment, 168
  - relative size of, 159
  - total value of, 151
- trust fund diversification. *See also* social security diversification
  - aggregate investment declining after, 176
  - effects modified by the presence of land, 161
  - effects on the utility of young savers, 160
  - long-lived assets decreasing the sensitivity of interest rates to, 166
- trust fund investments
  - versus private accounts, 190–1
  - in risky assets, 154
  - susceptibility to political interference, 190
- trust fund portfolio
  - changing, 173
  - real effects of choices, 172
  - welfare effects of diversification, 177
- two-stage political economy process, 331
- U.K. *See* United Kingdom
- unborn agents
  - greater welfare loss due to fixed effects, 241
  - preferences for, 210
- unconditional opting out, 341, 342
- unconstrained model, portfolio behavior in, 249, 257
- undersaving of the young, 5
- unfunded liabilities, 3–4, 171
- unfunded transfer to initial generations, 218
- unit root test statistics, 290, 297
- United Kingdom
  - population age structure and asset returns, 294–5
  - providing more investment flexibility, 200
  - real interest rates, 289
  - real stock returns and population, 295
- United Nations Population Division (UNPD), 16
- United States
  - age distribution for 2001, 60
  - aggregate economy, 225
  - asset returns, 287–94
  - capital stock, 29
  - closed economy simulation results, 26
  - consumption tax rate, 31
  - demographic structure of the population, 279
  - doubling immigration, 31, 36
  - effect of capital shortages, 29
  - fertility rate, 16
  - financial problems facing the social security system, 44
  - impact of immigration policy, 30
  - increasing capital stocks, 33
  - inflation-indexed bonds, 289
  - information on asset ownership in, 273
  - labor supply growth, 29
  - life expectancy, 16
  - macroeconomic variables in 2000, 25
  - old-age dependency ratio, 1
  - open economy simulation results, 37
  - payroll-tax rate increases, 29
  - political system built-in inertia of, 69
  - population, 252, 255
  - population age structure, 287–94
  - population increases, 16
  - privatizing pensions, 33, 42
  - real interest rates, 289
  - rising stock values, 29
  - social security system, 207
  - total factor productivity (TFP), 252
  - wage-tax rate increases, 29
  - year 2000 baseline path with open economies, 35
- universal participation in public pension systems, 184
- usage tax system, 20
- utility
  - of consumption, 18
  - function, 300
  - levels, 145
  - perturbations, 104
  - of self, 85
- utils, 104
- viability of social security, 71
- virtually funded pension regime, 334
- voters
  - age of median, 60–1
  - evaluating social security, 62
  - registration and participation, 61
- voting population, NPV of social security, 68
- voting theory, social security and, 58
- wage income, buffering consumption, 248
- wage tax
  - increases in rates, 29
  - progressive parameters of systems, 23
- waves of the pension survey, 336
- weak Pareto improvement of initial diversification, 155
- wealth
  - allowing for different at different ages, 275

- composition of, 272
- cross-sectional age profiles, 273
- large dispersion at various ages, 278
- redistributing across generations, 161
- redistributing from younger workers to older retirees, 184
- relation to the level of stock prices, 297
- wealth-to-income ratios, 97
- welfare
  - effects of demographic change on, 54
  - quantitative decomposition of overall results, 208
  - reduced by the provision of annuities, 243
- welfare comparisons
  - across alternative economies, 227–9
  - across alternative steady states, 207
  - making, 207
- welfare effects
  - of doubling immigration, 31
  - increasing monotonically with education, 127
  - of privatizing pensions, 33
  - of trust fund portfolio diversification, 177
- welfare gains
  - decomposing, 230–8
  - generated by perfect commitment, 115
  - moving from SQ to PP or PSA, 243
  - to nonsavers from social security diversification, 157
  - from social security diversification, 156
  - from social security reform, 230–8
  - for workers, 147
- welfare impact of DC plans, 127, 131, 134
- welfare losses
  - associated with moving from SQ to the alternative, 227
  - contingent upon age, 242
  - incorporating a fixed effect, 242
  - notation for, 231
  - total, 231
- welfare state
  - opinions of European citizens on, 335
  - views on, 346
- windfall gain to the first generation of retirees, 191
- withdrawal penalties. *See* early-withdrawal penalty
- within-cohort heterogeneity, 69
- work, minimizing disincentives for, 185
- workers, 146. *See also* old workers; skilled workers
  - adjusting the portfolio for, 156
  - better off with land, 165
  - claim on benefits exceeding payroll taxes, 159
  - differences in saving and investing among, 146
  - educated less likely to oppose pension reform, 346
  - expected lifetime utility of, 158
  - expected utility of, 152, 159, 177, 178
  - falling number of, 322
  - higher fraction of wealth invested in stocks, 156
  - interest rate change and, 159
  - low-income voting for social security, 70
  - modeled as nonsavers, 150
  - as more tolerant on the margin than savers, 155
  - in the pension alternatives model, 210
  - in the political economy model, 325
  - raising the expected utility of, 147
  - reasons for favoring social security, 58
  - in the social security diversification model, 149
  - stock holdings of, 157
  - trust fund investment effects for, 158
  - what is best for heterogeneous, 156
- workers to retirees, ratio, 44
- working, marginal return from, 204
- working cohort, driving up asset prices, 270
- world assets. *See also* assets
  - distributing across regions, 23
  - giving regions an initial share of, 33
- World Bank, pension systems as three-tiered, 185
- world capital markets
  - degree of integration of, 303
  - role of integrated, 303
- world economy model, 14–24
- young consumers, 316
- young individuals
  - effects of social security tax rates, 327
  - expecting reduced social security benefits, 329
- young savers
  - affected by changing land values, 164
  - consumption of, 173
  - effect of a drop in the value of land, 175
  - effects of diversification on, 167
  - expected utility decreased by the rising price of land, 177
  - welfare of, 171
- young workers
  - arbitraging into risky capital, 248, 256
  - doubts regarding the implicit social contract, 323
  - driving the saving rate from an optimizing model, 270
  - dropping out of financial markets, 249, 256
  - investing in risky capital, 256
  - less likely to oppose pension reform, 346
  - maximizing expected utility, 264
  - total wealth, 264
- young working age, 250
- “youth dependency ratio,” 196
- zero population growth, 16
- zero-sum game between generations, 191