adult learning 225-7 asset ownership, and education 163 influence on participant behavior 227-32 attitudes and changing behavior 48-9 advisory services, and sponsored retirement plans 207-18 risk attitude and risk perception 55-6 affect-driven decisions, and risk perception auto-pilot plan designs 115-16 53, 54-6, 59-60, 63-4 automatic enrollment in retirement saving plans 9-10, 11, 31, 33 age and employee investment in company and participation rates 100 stock 123, 128, 129, 131, 133 and savings behavior 47-8, 49-50 and money attitudes 103, 113 see also Save More Tomorrow (SMT) and participation in 401(k) retirement availability heuristic, and investment plans 88, 89, 90 decisions 21 and pre-retirement household wealth axiomatic studies, and risk perception 56 165, 173 and retirement goals 193, 194 baby boom generation and retirement satisfaction 262-3, 264, and annuities 28 267, 269-70, 272 and retirement satisfaction 259-60 banking analogy, and adult learning 226 and the selection of annuity options Barber, B. M. 24-5 251 - 2and sex differences in saving and Barsky, R. 160 Bayer, P. 159, 188 investment choices 196, 197, 198, 199, 200-1behavior, knowledge, attitudes and age of retirement changing behavior 48-9 and mortality risk 275-6 behavior-first model of attitude formation and the savings gap 6 49-50 sex differences in 192, 193, 240 behavioral decision research, and risk TIAA-CREF participants 240 management decisions 53, 54-61, 63-4 AIDS/HIV, and motivation to change behavioral finance 3-36 behavior 44 and advisory services on DC plans 207-18 American Psychological Association, Board decumulation decisions 26-30 of Educational Affairs 223 and economic decision making 3-4 analytic processing, and risk perception investment decisions 13-26 54, 63 policy and plan design alternatives 30-6 anchoring effects, for pension investors 18 saving decisions 4-13 Anheuser-Busch 121 see also motivating retirement planning behavioral portfolios 67–79 annuities and DC pension plans 237 downside and upside protection layers and longevity risk 27-9 75, 76, 78 and mortality risk 276, 280-2, 283-4 and gambling 67-8, 75-6 and the insurance-lottery framework patterns in the selection of options 249-51 and policy and plan design 35 68-9, 71, 78-9 and retirement satisfaction 259-73, and mean-variance theory 67, 68-9, 72-4, 264-8, 270 and TIAA-CREF participants 240-3, and prospect theory 69-71, 79 244-5, 246, 248, 249-51, 254-5 and public policy 77-8

behavioral portfolios (cont.) company stock as pyramids of assets 71 analysis of trading behavior 132-4 simple version of the theory 71-5 and behavioral portfolios 77 two-layer version of the theory 75-6 contribution fractions 124, 126-32 behavioral theories of risk-taking 25 and investment decisions 19-20, 34-5. Bem, D., Beliefs, Attitudes and Human 121 - 35Affairs 48 conjoint-expected risk model 56 Benartzi, S. 19-20, 49, 63, 100, 116, 122, Consultative Approach, influencing 134, 137, 138 participant behavior 228-30 benefits information fair attendance, and consumption 401(k) plans participation 140-2, 143, adequate flows of in retirement 237-8 145, 147 patterns after retirement 5-6, 187 Berbaum, K. S. 60 contrarian investors, in company stock 122 Bernheim, B. 159, 164, 170, 188 contribution fractions, and investment in Bernouilli utility theory, and behavioral company stock 124, 126-32 portfolios 67, 68 Black people, and pre-retirement household Damasio, A. R. 59, 222, 223 wealth 163, 171-2 DB (defined benefit) plans 97, 186 Blue Sky Laws 77-8 and behavioral portfolios 67 bounded rationality, and saving decisions and investment decisions 13, 14 annuities 27, 28 bounded self-control, and saving and mortality risk 281, 283 decisions 6-9 and policy and plan decisions 35 brokerage accounts, and participation in and retirement satisfaction 264, 266-8 401(k) plans 92 and retirement seminars 190 and sex differences in saving and Brothers, L. S. 279 Brown, J. R. 270, 277, 280, 283 investment choices 195-8, 199, 200 business equity, and pre-retirement and TDA (Tax Deferred Account) household wealth 161, 162 retirement plans 137 DC (defined contribution) plans 3, 4, 97 capital market risk, and decumulation advisory services 207–18 decisions 26, 29-30 and behavioral portfolios 67, 77 CES-D (Center for Epidemologic Studies and the Consultative Approach 230 Depression) scale, and retirement employee knowledge of number of satisfaction 261-2, 264 vendors 144-5 and flows of income in retirement Chao, Elaine 185 Chinese investors, and risk 237 - 56perception 55 and individual responsibility for Choi, J. J. 47, 49, 100, 137, 146 retirement saving 186-7 choice overload 83-7 and investment decisions 13, 14, 15, 16 and Financial Engines Advice Action Kit and mortality risk 281, 282 (AAK) 217 participation rates 114 and investment plans 33 and the planner model 97, 117–18 and participant-directed 401(k) plans and planning for retirement 159 87-93, 115 and policy and plan decisions 31-2, 32 - 3, 35and savings plans 12 CIGNA Retirement & Investment Services and retirement satisfaction 264-5, 270 and retirement seminars 190 Participant Service Center 227–32 Clark, R. L. 8, 170, 188, 283 and sex differences in saving and commitment devices, and saving decisions investment choices 198-201 De Bondt, W. 25 communications and education programs, decision framing, and automatic enrollment and adult learning 230-2 in retirement saving plans 9-10

decision making see behavioral finance; expected utility theory, and behavioral pension decisionmaking portfolios 67 decision modes, and investment decisions 63 feedback trading, in company stock 122 decumulation decisions 26-30 financial education and inflation and capital market risk effectiveness of 187-9 26, 29-30 focus groups on mortality risk 283-4 and longevity risk 26, 27-9 literacy programs 116-17, 118 default choices and pre-retirement household wealth and 401(k) plans 137, 138-9, 148-9 and automatic enrollment in retirement see also retirement seminars saving plans 9-10, 11 Financial Engines sponsored advice 208–18 and policy and plan design 35 Advice Action Kit (AAK) 216-17 and risk management decisions 62-3 changing participant behavior 214-17 depression in retirement 261-2, 264, 266, Online Advice 209, 210-11, 214, 215-17, 268, 271 218 ordered probit estimates of 272 Personal Statements 209, 214, 215, 217 disclosure, to employees of DC plans 208 reaching participants 209-14 disposition effect, and investment financial risks, perceptions of 277, 278 decisions 25-6 Fiske, S. T. 278 dread and predictability, as determinants of 401(k) plans see participant-directed 401(k) perceived risk 56-8 retirement plans Duflo, E. 12, 64, 100, 138, 139, 147, framing effects 170, 221 and investment decisions 16-17 and saving decisions 9-10 EBRI (Employee Benefits Research Friedman-Savage utility function 68, 69, 78 Institute) 98, 100-1, 124, 158 fund windows, and participation in 401(k) Edelman, G. M. 222 plans 92 education and asset ownership 163 gambling, and behavioral portfolios 67-8, and money attitudes 103, 111, 113 and pre-retirement household wealth Gambling in America 67, 75-6 Garman, T. 171 162-3, 173 Garrett, D. 159, 164, 170 and retirement plan design 98, 99-100 gender see sex differences and retirement seminars 168, 170–1 on saving and investment 46-7 Germany, participant-directed DC plans 3 and sex differences in saving and Goetzmann, W. N. 25 investment choices 196, 197 Grable, J. 47 and women 191 Greenspan, A. 201 see also financial education Gustman, A. L. 98 email communications, and adoption of DC plans 211–13, 217 health Employee Benefits Research Institute perceptions of health-related risks 277, (EBRI) 98, 100-1, 221 employer plan design, and employee savings and retirement satisfaction 263, 264 behavior 99-101 health insurance employer stock see company stock and employer retirement saving plans endorsement effect, employer stock and 31 - 2investment decisions 20 employer-provided for retirees 280 equity holdings Hershey, D. A. 47 in company stock 124, 127, 128, 134 Hewitt Associations, data on employee see also business equity; housing equity investment decisions in company stock equity markets, overconfidence in 24-5 121, 122-9

Hispanics, and pre-retirement household reliance on past performance 20-1 wealth 163, 171-2 and risk perception 63-4 Holden, S. 123, 124, 127, 221 sex differences in 195-201 household retirement provision see older investment-related risks, perceptions of households and retirement provision 277, 278 housing equity, and pre-retirement IPRO (Interest Payment Retirement household wealth 161 Option) 243, 245-7, 249, 251, 253, 254 HRS (Health and Retirement Study) IRAs (Individual Retirement Accounts) 30 of the financial situation of older and mortality risk 276 households 157, 159-82 and pre-retirement household wealth and mortality risk perceptions 279, 280 157, 161-2, 164, 166 of retirement satisfaction 260-73 and retirement satisfaction 265 on retirement seminars 188-9 Iyengar, S.S. 84, 85, 115, 215, 221 Hsee, C. 55 Jiang, W. 12, 33, 55, 61, 115, 215, 221 Huberman, G. 12, 33, 55, 61, 115, 215, 221 Hurd, M. 158, 265, 270, 276, 279 job tenure, and company stock contributions 127 inadequate pension saving, perceived John Hancock Financial Services 98 risk of 58-9 joint-life annuities, and TIAA-CREF incomes participants 241, 246, 248, 249, 250, 251 and money attitudes 103, 111, 113 Joo, S. 47 and pre-retirement household wealth Juster, T. 172 161, 165, 173, 179, 181 and retirement satisfaction 262, 269 Kahneman, D. 21, 22, 23, 26, 69 TIAA-CREF participants and retirement Kahneman and Tversky's prospect theory income options 240-4 utility function 69, 79 individual responsibility, for retirement Kansas Blue Sky Law 77-8 saving 186-7 Keoghs, and pre-retirement household Individual Retirement Accounts see IRAs wealth 161, 164, 166 (Individual Retirement Accounts) knowledge, behavior and attitudes 48-9 inflation risk, and decumulation decisions Knowles, M. 225 26, 29-30 Kolb, D. A. 226 Kumar, A. 25 insurance-lottery framework, and behavioral portfolios 68-9, 71, 78-9 Interest Payment Retirement Option Laibson 99 (IPRO) 243, 245-7, 249, 251, 253, 254 "Lake Wobegone" effect 24 interest rates, and annuities 28 Latin America, participant-directed DC investment decisions 13-26 plans 3 learning, research-based principles of 222-7 and education 47 and employer stock 19-20, 34-5, 121-35 LeDoux, J. 222 and framing effects 16-17 Lee, J. W. 63 inertia and procrastination in 17-19, 34 Lepper, M. 84, 85, 115, 215 "laundry list" approach to 34 Liang, N. 121, 122 loss-aversion and the disposition effect libertarian paternalism, and participation in 401(k) plans 92-3 and mean-variance theory 14-15, 19, 21, life annuity options, and TIAA-CREF 34 participants 240-2, 244-5, 246, 248, menu designs 17, 33 249, 252, 253 and modern portfolio theory (MPT) life expectancy 13-15, 20-1and the baby boom generation 259 narrow framing of 26 and longevity risk 27-8 overconfidence in 23-5, 26 and mortality risk 276-7, 278 and prospect theory 21-3 and retirement satisfaction 273

life insurance, and mortality risk 275, 276, momentum investors, in company stock 122 282, 283 money attitudes survey 97-118, 221 life-cycle theories attitude segments 104-14 of consumption 237 avoiders 102, 104-7, 108-9, 110-11, 112, of saving 5-6, 187 113, 117, 118 limited liability, and behavioral portfolios 74 and cluster analysis 104 and degree of participant direction living standards, after retirement 5-6 long-term planning, and retirement 114 - 15satisfaction 269 demographic and behavioral longevity risks 260, 270-1, 275-6 characteristics 111-14 and decumulation decisions 26, 27-9 doers 102, 104-10, 111-12, 117, 118 loss-aversion, and investment decisions planners 102, 104-7, 108-9, 110, 111-12, 25-6, 28 113, 116-17, 118 lottery-insurance framework, and qualitative/interview phase 101-2 behavioral portfolios 68-9, 71, 78-9 quantitative/survey phase 102-4 lump sum decisions at retirement 28–30, 35 Moore, J. F. 113-14, 158 Lusardi, A. 9, 158, 170, 171, 189 Morgenstein, O. 67 mortality risk 275-84 MacFarland, D. M. 9, 168, 187, 213, 221, and annuities 276, 280-2, 283-4 283, 284 decision-making and judgment 277-80 insurance products for 280-2 McGarry, K. 276 Madrian, B. C. 9, 11, 17, 100, 115, 137, 138, and life insurance 275, 276, 282, 283 146, 189 market implications of 282-3 Maki, D. 189 perceptions 276–7 Marconi, C. D. 168, 187, 213, 221, 283, 284 motivating retirement planning 43-50 marital status and automatic enrollment in savings plans 47-8, 49-50 and money attitudes 103, 112 and pre-retirement household wealth and the behavior-first model of attitude 165, 173 formation 49-50 and retirement satisfaction 263, 264 and education about saving 46-7 Markowitz, H., customary wealth utility and future orientation 46 theory 68-9, 78-9 and knowledge, behavior and attitudes Marshall, A., Principles of Economics 98 Mayer, R. E. 222 reasons for not saving 45-6 MDO (Minimum Distribution Option) and Social Security 46 contract 243, 247, 248, 253, 254, 255 Mowen, J. C. 47 Muller, L. 188-9 mean-variance theory and behavioral portfolios 67, 68-9, Munnell, A. H. 238, 255 72-4,77and investment decisions 14-15, 19, narrow framing, of investment 21, 34 decisions 26 negative affect, and risk perception 53, 60 memory, and adult learning 225 mental health, and retirement neoclassical economic theory, and the satisfaction 264 decision to save 4 Merrill Lynch 98 Newey-West, robust standard errors 129 Meulbroek, L. 121 nondiscrimination testing, and auto-pilot mind-as-computer metaphor 222-3, 226 plan designs 116 Minimum Distribution Option (MDO) contract 243, 247, 248, 253, 254, 255 occupation Mitchell, O. S. 19, 77, 113-14, 121, and money attitudes 103, 111, 113 158, 270, 283 and sex differences in saving and modern portfolio theory (MPT) investment choices 196, 197, 199 13-15, 20-1 Odean, T. 24-5, 25-6

older households and retirement provision Pietranico, P. 71 158 - 82Pigou, A. 99 effects of planning 158-9 planner model, and participant-directed and financial education 163-8 retirement plans 97 and income needed for retirement 187 planner paradigm lack of preparedness for retirement 157-8 and retirement plan design 98, 117-18 and pension wealth 168-9, 171 and saving decisions 9, 98 policy and plan design alternatives 30-6 saving close to retirement 160-3 and Social Security 159, 160, 165, 166, and behavioral research 30-2 168-9, 171 positive affect, and risk perception 53, 60 option-pricing techniques, and investment Poterba, J. M. 273, 283 in company stock 121 poverty, and the elderly 259 overconfidence, and investment decisions Procter & Gamble 121 23-5, 26 prospect theory and behavioral portfolios 69-71, 79 Panis, W. A. 171, 265, 270 and investment decisions 21-3 participant-directed 401(k) retirement plans provider integration, and advice on DC 83-93, 97, 137, 140-51 plans 213-14 and auto-pilot plan designs 115-16 psychometric paradigm of risk and benefits fair attendance 140-2, 143, perception 56 145, 147 public policy, and behavioral portfolios 77-8 and choice overload 87-93, 115 Putnam mutual fund company, investment and default choices 137, 138-9, 148-9 pyramid 71-2 default rules and commitment 138-9 and degree of participant direction 115 Quick, Carol 127 and education in financial literacy 117 effect of returns on company stock race choices 122 and money attitudes 103, 112 effects on saving 149-50 and pre-retirement household wealth future research on 146-50 163, 171-2 and longevity risks 260 Rae, J. 98 misinformation about 98 Ramaswamy, K. 121 and the motivational reward hypothesis re-cognition, adult learning as 226 142, 145 recognition-and-rule based decisions 64 peer effects on decisions to enroll representativeness heuristic, and investment in 140-6 decisions 21 and Personal Statements 214 research-based principles of learning questionnaire on 150-1 222 - 7participant-directed plans see DC (defined Retirement Confidence Survey 100 retirement plan design contribution) plans and behavioral finance 3-36 past returns, influence on investment decisions in company stock 130, 132, and money attitudes 97–118 134 - 5retirement rates, and the changing nature payroll deduction plans 8-9 of retirement 238-40 peer influences, on retirement savings retirement satisfaction 259-73 decisions 12, 100, 139-46 analysis sample 260 pension decisionmaking, and risk and annuitization 264-8, 270 expectations prior to retirement 261 management decisions 58-9, 61-4 pension participant behavior, and adult and long-term planning 269 learning principles 221–33 measures of well-being 261-4 pension wealth, and household wealth methodology appendix 271-3 measures 168-9, 171 ordered probit estimates of 272 personality types, and money attitudes 100-1 and retirement seminars 271 Pfizer 191 and risk aversion 268-9, 272-3

retirement security, and advice on DC Scholz, J. K. 159, 188 plans 208 self-control retirement seminars 157, 159, 160, and pension saving 58-9 163-4, 167-8 and rule-based decision situations 64 company-sponsored 188 and saving decisions 6-9, 11 design of 221-2 self-directed learners, adults as 226-7 Selnow, G. W. 32, 169, 221 effects on retirement accumulation 167-8 seminars see retirement seminars establishing retirement goals 191–5 evaluation of effectiveness 169-71, 188 Sethi-Iyengar, S. 12, 33, 55, 61 HRS study of 188-9 sex differences 185-203 and retirement satisfaction 271 and earnings 191 and sex differences in saving and and money attitudes 112, 113 investment choices 195-201 and overconfidence 24, 25 surveys of 189-91 and participation in 401(k) retirement Riepe, M. 71-2 plans 88, 89 risk aversion, and retirement satisfaction and pre-retirement household wealth 268-9, 272-3 161, 165 risk perception 53-64, 221 and retirement goals 191-5 and action 59-60 and retirement satisfaction 260, 263 and affect 53, 54-6, 59-60, 63-4 saving and investment choices 195-201 and analytic processing 54, 63 in saving and investment choices 195-201 dread and predictability as determinants in the selection of annuity options of perceived risk 56-8 249 - 51implications for pension decisionmaking see also women 61 - 4Shaez, E. 138 of inadequate pension saving 58-9 Sharpe-ratio approach, to investment in measuring 56 company stock 121 mortality risk and annuities 275-84 Shea, D. F. 9, 11, 17, 100, 115, 137, 138, and risk attitude 55-6 146, 189 and single action bias 60-1 Shefrin, H. 25, 67, 73, 74, 79 risk-taking, behavioral theories of 25 Simon, H. 3, 5 risky decisions, and prospect theory 21-3 single action bias, and risk perception 60-1 Roosevelt, Franklin D. 78 single-life annuities, and TIAA-CREF Russia, participant-directed DC plans 3 participants 240-1, 248, 249, 250-1 SMT program see Save More Tomorrow Saez, E. 12, 64, 100, 139, 147, 170, 221 (SMT) program Samuelson, Paul 14 Smith, James 172 Save More Tomorrow (SMartT) program social influence techniques 64 12-13, 35, 49, 100, 116, 138, 139, 147 Social Security effect on saving 149 and behavioral portfolios 78 saving decisions 4-13, 33 and financial education 164 and education 47 and household retirement resources 159, fatalistic view of 43 160, 165, 166, 168-9, 171 framing and default choices 9-10, 137 lower tax penalties on payments 254 inertia and procrastination 11, 12, 13, 33 and mortality risk 279, 283 life-cycle theory of 5-6, 187 and motivation to save for retirement 46 motivating retirement planning 43-50 and participation in 401(k) plans 83, 91 peer influences on 12, 100, 139-45 and retirement satisfaction 259, 261, 264, and risk perception 61-3 265, 271 and self-control 6-9 and retirement seminars 157 sex differences in 195-201 sociocultural paradigm of risk see also Save More Tomorrow (SMT) perception 56 program Statman, M. 25, 61, 67, 73, 74, 79 Schieber, S. 170, 188 Steinmeier, T. L. 98

Sunstein, C. R. 31, 92 SWAT (Systematic Withdrawals and Transfers) 243, 247, 248, 251, 253 Sweden, participant-directed DC plans 3 Systematic Withdrawals and Transfers (SWAT) 243, 247, 248, 251, 253 taxation and investment in company stock 121-2 and retirement income options 254 Taylor, S. E. 277, 278 TDA (Tax Deferred Account) retirement plans 137, 150-1 Thaler, R. H. 6, 31, 49, 63, 92, 100, 116, 137, 138 Thompson, Congressman Huston 78 TIAA-CREF participants 238-56 levels of income payments 244-7 longitudinal patterns in selection of retirement income options 247-9 and retirement income options 240-4 retirement rates and the changing nature of retirement 238-40 settlement sequences 253-4 Von Neumann, J. 67 time diversification, and modern portfolio theory (MPT) 14 time-series valuation, and investment in company stock 122, 135 Tononi, T. 222 Tough, A. 226

uncertainty, and saving for retirement 45 United Kingdom, living standards after retirement 5

Treasury Inflation-protected Securities

United States

(TIPS) 29

Tversky, A. 21, 22, 69

annuity providers and mortality risk 283 Blue Sky Laws 77-8

Department of Defense employees and annuities 29

Department of Labor (USDOL) and DC plans 207

Employee Retirement and Income Security Act (ERISA) 259 employees and education on financial matters 47

health insurance and employer retirement saving plans 31-2 HRS survey of older households and retirement provision 157, 159-82 investment decisions 15-16, 19 living standards after retirement 5, 6 savings decisions 8-9 Social Security 46, 78 Treasury Inflation-protected Securities (TIPS) 29 see also DB (defined benefit) plans; DC (defined contribution) plans Utkus, S. P. 19, 77, 121, 168, 187, 213, 221, 283, 284

VanDerhei, J. 123, 124, 127 Vanguard Group and investment decisions 17-18, 19 money attitude survey 101-14 and participation in 401(k) plans 87-91, 98 variable annuity payments, and TIAA-CREF participants 242–3

Waring, B. 72 Weber, E. V. 7-8, 55, 60, 61, 63, 221, 222, 276, 277

Wechler deterioration quotient, and adult learning 225

Weisbenner, S. 121, 122

women age of retirement 192, 193, 240

as conservative investors 191 and participation in 401 (k) retirement plans 88, 89 pension plans 191 and retirement goals 191-5 and retirement plans 185-6, 191 and retirement seminars 191 saving and investment choices 195-201 and widowhood 157-8, 275 and worry about financial risks 55 see also sex differences

Yates, J. F. 63

Zissimopoulos, J. 158