Reshaping Retirement Security

Lessons from the Global Financial Crisis

EDITED BY

Raimond Maurer, Olivia S. Mitchell, and Mark J. Warshawsky



OXFORD UNIVERSITY PRESS

Great Clarendon Street, Oxford, OX2 6DP, United Kingdom

Oxford University Press is a department of the University of Oxford. It furthers the University's objective of excellence in research, scholarship, and education by publishing worldwide. Oxford is a registered trade mark of Oxford University Press in the UK and in certain other countries

© Pension Research Council, the Wharton School, the University of Pennsylvania 2012

The moral rights of the authors have been asserted

First Edition published 2012

Impression: 1

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without the prior permission in writing of Oxford University Press, or as expressly permitted by law, by licence or under terms agreed with the appropriate reprographics rights organization. Enquiries concerning reproduction outside the scope of the above should be sent to the Rights Department, Oxford University Press, at the address above

You must not circulate this work in any other form and you must impose this same condition on any acquirer

British Library Cataloguing in Publication Data Data available

Library of Congress Cataloging in Publication Data
Data available

ISBN 978-0-19-966069-8

Printed in Great Britain by MPG Books Group, Bodmin and King's Lynn

Contents

List of Figures is				
Li	List of Tables			
	List of Abbreviations			
N	otes on Contributors	xvii		
1.	Retirement Security and the Financial and Economic Crisis: An Overview	1		
	Raimond Maurer, Olivia S. Mitchell, and Mark J. Warshawsky			
	Part I. Rethinking Retirement in the New Economic Era			
2.	Changing Retirement Behavior in the Wake of the Financial Crisis Julia Coronado and Karen Dynan	13		
3.	Potential Impacts of the Great Recession on Future Retirement Incomes Barbara A. Butrica, Richard W. Johnson, and Karen E. Smith	36		
4.	Effects of the Economic Crisis on the Older Population: How Expectations, Consumption, Bequests, and Retirement Responded to Market Shocks Michael Hurd and Susann Rohwedder	64		
5.	Retirement Behavior and the Global Financial Crisis Jason J. Fichtner, John W. R. Phillips, and Barbara A. Smith	81		
	Part II. Rethinking the Resilience of Defined Contribution Plans			
6.	Trading in 401(k) Plans during the Financial Crisis Ning Tang, Olivia S. Mitchell, and Stephen P. Utkus	101		
7.	Life Cycle Impacts of the Financial Crisis on Optimal Consumption—Portfolio Choices and Labor Supply Jingjing Chai, Raimond Maurer, Olivia S. Mitchell, and Ralph Rogalla	120		

viii Contents

8.	A Stress Test for the Private Employer Defined Contribution System David Wray	151
	Part III. How Defined Benefit Plans Handled the Financial Crisis	
9.	Defined Benefit Pension Plans and the Financial Crisis: Impact and Sponsors and Government Reactions Mark J. Warshawsky	161
10.	Multiemployer Pension Plans Respond to the Financial Crisis Judith F. Mazo and Eli Greenblum	188
11.	Adopting Hybrid Pension Plans: Effects of Economic Crisis and Regulatory Reform Robert L. Clark, Alan Glickstein, and Tomeka Hill	215
12.	Collective Pensions and the Global Financial Crisis: The Case of the Netherlands Lans Bovenberg and Theo Nijman	235
13.	How Have Public Sector Pensions Responded to the Financial Crisis? Andrew G. Biggs	262
End Ind	d Pages lex	273 277

The Pension Research Council

The Pension Research Council at the Wharton School of the University of Pennsylvania is committed to generating debate on key policy issues affecting pensions and other employee benefits. The Council sponsors interdisciplinary research on private and social retirement security and related benefit plans in the United States and around the world. It seeks to broaden understanding of these complex arrangements through basic research into their economic, social, legal, actuarial, and financial foundations. Members of the Advisory Board of the Council, appointed by the Dean of the Wharton School, are leaders in the employee benefits field, and they recognize the essential role of social security and other public sector income maintenance programs while sharing a desire to strengthen private sector approaches to economic security. For more information, see http://www.pensionresearchcouncil.org

The Boettner Center for Pensions and Retirement Security

Founded at the Wharton School to support scholarly research, teaching, and outreach on global aging, retirement, and public and private pensions, the Center is named after Joseph E. Boettner. Funding to the University of Pennsylvania was provided through the generosity of the Boettner family, whose intent was to spur financial well-being at older ages through work on how aging influences financial security and life satisfaction. The Center disseminates research and evaluation on challenges and opportunities associated with global aging and retirement, how to strengthen retirement income systems, saving and investment behavior of the young and the old, interactions between physical and mental health, and successful retirement. For more information, see http://www.pensionresearchcouncil.org/boettner/

Executive Director

Olivia S. Mitchell, *International Foundation of Employee Benefit Plans Professor*, Department of Business Economics and Policy, The Wharton School, University of Pennsylvania.

Advisory Board

Gary W. Anderson, Austin, TX

David S. Blitzstein, United Food & Commercial Workers, Washington, DC Robert L. Clark, College of Management, North Carolina State University, Raleigh, NC

Julia Coronado, BNP Paribas, New York, NY

Peter Fisher, Abundant Venture Partners, Waban, MA

P. Brett Hammond, MSCI, New York, NY

Beth Hirschhorn, MetLife, New York, NY

Emily Kessler, Society of Actuaries, Retirement Systems Solutions, Schaumburg, IL

David I. Laibson, Department of Economics, Harvard University, Cambridge, MA

Annamaria Lusardi, George Washington University, Washington, DC

Jeannine Markoe Raymond, National Association of State Retirement Administrators, Washington, DC

Raimond Maurer, Finance Department, Goethe University, Frankfurt, Germany

Judith F. Mazo, Washington, DC

Alicia H. Munnell, School of Management, Boston College, Chestnut Hill, MA

Richard Prosten, Amalgamated Resources, Washington, DC

Anna M. Rappaport, Anna Rappaport Consulting, Chicago, IL

Kent Smetters, The Wharton School, University of Pennsylvania, Philadelphia, PA

Nicholas S. Souleles, The Wharton School, University of Pennsylvania, Philadelphia, PA

Stephen P. Utkus, The Vanguard Group, Malvern, PA

Jack L. VanDerhei, Employee Benefit Research Institute, Washington, DC

Mark J. Warshawsky, Towers Watson, Arlington, VA

Stephen P. Zeldes, Graduate School of Business, Columbia University, New York, NY

Senior Partners

Allianz SE

Federal Reserve Employee Benefits System Financial Engines William A. Frey Investment Company Institute Lincoln Financial Group MetLife

Morgan Stanley Smith Barney
Mutual of America Life Insurance Company
New York Life–Mainstay
Pacific Investment Mgmt. Co. LLC
Prudential
Retirement Made Simpler
Social Security Administration
State Street Global Advisors
T. Rowe Price
TIAA-CREF Institute
Towers Watson
The Vanguard Group

Institutional Members

International Foundation of Employee Benefit Plans Ontario Pension Board Society of Actuaries

Recent Pension Research Council Publications

Financial Literacy. Olivia S. Mitchell and Annamaria Lusardi, eds. 2011 (ISBN 0-19-969681-9).

Securing Lifelong Retirement Income. Olivia S. Mitchell, John Piggott, and Noriyuki Takayama, eds. 2011 (ISBN 0-19-959484-9).

Reorienting Retirement Risk Management. Robert L. Clark and Olivia S. Mitchell, eds. 2010 (ISBN 0-19-959260-9).

Fundamentals of Private Pensions. Dan M. McGill, Kyle N. Brown, John J. Haley, Sylvester Schieber, and Mark J. Warshawsky, 9th Ed. 2010 (ISBN 0-19-954451-6).

The Future of Public Employee Retirement Systems. Olivia S. Mitchell and Gary Anderson, eds. 2009 (ISBN 0-19-957334-9).

Recalibrating Retirement Spending and Saving. John Ameriks and Olivia S. Mitchell, eds. 2008 (ISBN 0-19-954910-8).

Lessons from Pension Reform in the Americas. Stephen J. Kay and Tapen Sinha, eds. 2008 (ISBN 0-19-922680-6).

Redefining Retirement: How Will Boomers Fare? Brigitte Madrian, Olivia S. Mitchell, and Beth J. Soldo, eds. 2007 (ISBN 0-19-923077-3).

Restructuring Retirement Risks. David Blitzstein, Olivia S. Mitchell, and Steven P. Utkus, eds. 2006 (ISBN 0-19-920465-9).

Reinventing the Retirement Paradigm. Robert L. Clark and Olivia S. Mitchell, eds. 2005 (ISBN 0-19-928460-1).

Pension Design and Structure: New Lessons from Behavioral Finance. Olivia S. Mitchell and Steven P. Utkus, eds. 2004 (ISBN 0-19-927339-1).

The Pension Challenge: Risk Transfers and Retirement Income Security. Olivia S. Mitchell and Kent Smetters, eds. 2003 (ISBN 0-19-926691-3).

A History of Public Sector Pensions in the United States. Robert L. Clark, Lee A. Craig, and Jack W. Wilson, eds. 2003 (ISBN 0-8122-3714-5).

Benefits for the Workplace of the Future. Olivia S. Mitchell, David Blitzstein, Michael Gordon, and Judith Mazo, eds. 2003 (ISBN 0-8122-3708-0).

Innovations in Retirement Financing. Olivia S. Mitchell, Zvi Bodie, P. Brett Hammond, and Stephen Zeldes, eds. 2002 (ISBN 0-8122-3641-6).

To Retire or Not: Retirement Policy and Practice in Higher Education. Robert L. Clark and P. Brett Hammond, eds. 2001 (ISBN 0-8122-3572-X).

Pensions in the Public Sector. Olivia S. Mitchell and Edwin Hustead, eds. 2001 (ISBN 0-8122-3578-9).

The Role of Annuity Markets in Financing Retirement. Jeffrey Brown, Olivia S. Mitchell, James Poterba, and Mark J. Warshawsky, eds. 2001 (ISBN 0-262-02509-4).

Forecasting Retirement Needs and Retirement Wealth. Olivia S. Mitchell, P. Brett Hammond, and Anna Rappaport, eds. 2000 (ISBN 0-8122-3529-0).

Prospects for Social Security Reform. Olivia S. Mitchell, Robert J. Myers, and Howard Young, eds. 1999 (ISBN 0-8122-3479-0).

Living with Defined Contribution Pensions: Remaking Responsibility for Retirement. Olivia S. Mitchell and Sylvester J. Schieber, eds. 1998 (ISBN 0-8122-3439-1).

Positioning Pensions for the Twenty-First Century. Michael S. Gordon, Olivia S. Mitchell, and Marc M. Twinney, eds. 1997 (ISBN 0-8122-3391-3).

Securing Employer-Based Pensions: An International Perspective. Zvi Bodie, Olivia S. Mitchell, and John A. Turner, eds. 1996 (ISBN 0-8122-3334-4).

Available from the Pension Research Council web site: http://www.pensionresearchcouncil.org/

Bold entries refer to **figures** and **tables**.

adaptive learning, and 401(k) trading patterns 110, 115 Affordable Care Act (2010) 38 and employment effects of Great Recession 40, 41-2, 43 and future reduction of Social Security benefits 43, **44–5**, 46 and home ownership 19, 24-5 and household asset distribution 18-19, 20 and household consumption 24 apparel spending 27 changes in (2002–9) 25–6, 27 food consumption 27 vehicles 27 and household debt 19-20 and household income 24 changes in (2002-9) 25-6 projected income for future retirees 43, 45, 46, 47-8, 50 variations in projection by individual characteristics 51-3 and household net worth: 1980-2010 20-1 2007 18 and house values 24-5 and impact of recession 43 and labor force participation 28-9 and lifecycle economic theory 18 and unemployment 20-1, 28 see also lifecycle impacts of financial crisis; older people AIG 104 American Council of Life Insurers (ACLI) 178 American Life Panel 90 apparel spending, and changes in 27

asset allocation:
by age of head of household
(2007) 18–19, 20
and changes in household
portfolios 29–32
and defined benefit (DB) plans 166–7
equity shares 166, 168
and defined contribution (DC)
plans 156–7
and impact of crisis:
near-retirement cohort 144–5
younger cohort 139–41, 142
and public sector pensions 264–5
target allocations 265–7
asset values, and consumption 67

Baby Boomers: and decline in household net worth 1-2 and decline in spending 2 and response to crisis 120-1 Bank of America 7, 215 bequests: and decline in 3 and probabilities of leaving 73-4, 75 Biggs, A. 8 Boeijen, D. 254 Bosworth, G. 82 Bovenberg, L. 7, 240, 255-6 Bricker, J. 29 Bureau of Labor Statistics (BLS) 23, 38, 83 Burtless, G. 82 Butrica, B. A. 2

Carroll, C. D. 121
Case-Shiller index 70
cash balance plans 170, 172, 215
see also hybrid pension plans

Center for Retirement Research 22-3 debt, see household debt; housing debt and Public Plans Database 263 defined benefit (DB) plans: Chai, J. 5, n. 78, n. 94, 103, 121, 124, and asset allocation 166-7 127, 128, n. 148 equity shares 166, 168 Clark, R. L. 7, 172, 215, n. 233 and conversion to hybrid collective bargaining, and plans 215-16 multiemployer pension and data sources for investment plans 188, 191-2 patterns 184n1 Congressional Research Service 83 and employer contribution Consumer Expenditure Survey patterns 169–70 (CEX) 65 Fortune 1000 companies (1999-2009) 169 and spending patterns 23-4 consumption, and impact of financial and encouraging maintenance crisis: of 185n10 and asset values 67 and funding requirements 172–3 and changes in 2, 22-7 and funding status 163-4, 183 by age of head of household concerns over 172 (2002-9) 25-6, 27 estimates and projections of apparel spending 27 (2008–14) 175 food consumption 27 Fortune 1000 companies vehicles 27 (2000-10) 164 and consumer's life cycle Fortune 1000 companies problem 125-7 (2008–10) 165 and decline in 2, 69 temporary funding relief 173-6 and lifecycle impacts 121 and impact of financial crisis 6-8, as measure of economic 161, 183 well-being 66 as management and compensation and older people 66-70, 122, 134-5, tool 170 136, 142, 143, 144 and Pension Benefit Guaranty changes in 66-7 Corporation single-employer insurance program 176–9 changes in mean and median spending 68-9, 70 annual operations finances reasons for increasing spending 68 (2007-10) 177 reasons for reducing spending 67 increased premiums 179 and younger cohorts: key indicators 177–8 net position of (2001-10) 176-7 long-term effects 138-9, 140 short-term effects 130-1, 132 return on investment portfolio 179 Consumption and Activities Mail Survey valuation methodology 178-9 (CAMS) 65-6 and plan design 172 Continuous Work History Sample and plan sponsorship 170-2 (CWHS) 85, 95n15 plans offered to new employees Coronado, J. 1 (1998–2011) 171 corporate bonds, and yields on risk considerations 170–2 (2007-10) 162-3and reform proposals 180 credit card repayment behavior flexible structured plan 180–3 (1993-2011) 30 role of employer 180-3

and temporary funding relief from and aim of new contracts 257 government 172-6, 183 and career-average scheme 236, 237 estimates of funding status and and conditional indexation 237 minimum contributions and contribution mechanisms 238, 239 (2009-14) 175 and declining mortality rates 244 Pension Relief Act (2010) 173-4 and determination of benefit Worker, Retiree and Employer entitlements 236 Recovery Act (WRERA, and examples of new pension 2008) 173 contracts 254 and termination of 170 age differentiation in and trend away from 170, 171 indexation 255 and valuation methodology 184n7, combi-contract 256 185n8 Defined Ambition model 254-5 see also multiemployer pension plans; escalating annuity contract 257 public sector pensions growth rate approach 256 defined contribution (DC) plans 120 and features of 236 and concerns over 151 and features of new contract 257-8 as dominant form of retirement and guarantees and ambitions 236–7 account 101 and impact of financial crisis 235, and impact of financial crisis 4-5 241-2 and participants' responses to crisis: ambiguity of nominal asset allocation 156-7 guarantees 245 contributions 155 ambiguous ownership of risk and buffers 246-7 hardship withdrawals 156 increase in account balances 156 communication of risk 247 loans from accounts 155 contribution rates 243 lump-sum distributions 156 fall in funding rates 241–2 resilience 155 funding rate of pension funds and Roth 401(k) plans 153-4 (1998-2010) 241 and sponsors' responses to crisis 151-4 higher retirement age 244 automatic enrollment 153 increases in pensions paid 242 eligibility requirements 152-3 investment policy 244–5 employee education 154 lack of risk-bearing capital 243-4 firm contributions 152 participants' awareness of risk 242-3 growth of system 152 tension between real and nominal investment offerings 154-5 thinking 245-6 and indexation mechanisms 237-8 Roth 401(k) plans 153-4 see also 401(k) plans and limitations of 248 Denmark 257 and more complete contracts 237–9 Dunn, W. E. 121 and optimal risk-sharing 248 Dutch pension system 235, 257–8 and pension agreement (2010) 249-50 and advisory committees on reform of: and pension funds 236 conflicting interests of fund and pillars of: participants 249 occupational pensions 235 Frijns committee 248, 249 pay-as-you-go public pension 235 Goudswaard committee 248-9 voluntary personal savings 235–6

Dutch pension system (<i>cont.</i>)	Fichtner, J. J. 3
and policy ladders 237	financial and economic crisis (2008–9):
and recovery plans 238-9	and impact of 1-4, 64-5
and solvency buffer 238	decline in household net worth 1-2
and strengths of 239	decline in spending 2
advanced risk management 239	defined benefit (DB) plans 6–8
buying power 240	defined contribution (DC)
completion of financial markets 240	plans 4–5
intergenerational risk	on retirement 2–3
sharing 240–1	retirement plan design 218-19
low expenses 240	unemployment 2
protection against behavioral	wealth loss 81
biases 239	widespread nature of 82
reduced selection 240	and impact on older population 121
and types of pension rights in new	data sources for study 65–6
contracts 250	and impact on retirement
collective buffers 251	behavior 82–4
individual guarantees 250-1	and private pension fund assets 120
individual soft rights 252–3	and responses to 120–1
Dynan, K. E. 1–2	financial education, and need for 8
_ /,	financial literacy:
economic crisis, see financial and	and promotion of 88
economic crisis (2008–9)	and saving behavior 88
Employee Benefit Research	and trading in 401(k) plans 105, 106
Institute 28, 88	flexible structured pension plans 180–3
Employee Retirement Income Security	food consumption, and changes in 27
Act (ERISA):	401 (k) plans, and trading in 4–5, 114–15
and hybrid pension plans 215	and adaptive learning 110, 115
and multiemployer pension	and contrarian strategy 102,
plans 188, 193–4, 195	110–14, 115
employment:	salience of financial
and impact of Great Recession 39,	information 114
40, 41–2 , 43	and data sources for study 104
and projected work histories of future	and differences by trader type 112–14
retirees 44	determinants of net flows to
and retirement behavior 82–3	equities 113
see also labor force participation;	and financial literacy 105, 106
unemployment	and future research 115–16
expectations of the future:	and impact of information on
and house prices 72–3	retirement wealth on trading
and retirement:	behavior 101, 102, 110, 112,
probability of working past	114, 115
62 75 -6 , 82	and impact of prior trading
probability of working past	experience 101, 102, 106, 112
65 76 –7 , 82	and incidence of 104, 105
and stock market 73, 74	and increase in 101, 102
and stock market 13, 14	and increase in 101, 104

and inertia of investors 101, 102 and projected household income of as a minority activity 102 future retirees 46, **47–8**, 50 and motivations for 101 and projected income of future contrarian strategy 112-14 retirees 45 fear factor 108-10, 110-11, 112 and projected numbers living in or momentum hypothesis 110, 111, 112 near poverty 49, 50 salience of financial and projected survival rates **54–5**, 56 information 110, 112 and projected work histories of future and multivariate analysis of trading retirees 44 patterns 108-12 and reduction of lifetime earnings 43 determinants of net flows to and reduction in Social Security equities 111 benefits 43-6 and overconfidence in minority of and variations in projected outcomes traders 101, 102 by individual characteristics 50, 51-3 and overview of trading patterns 104-5 Greenblum, E. 6-7 and portfolio trading behavior Guidolin, M. 121 research 103 Gustman, A. L. 121 and post- and pre-crisis distribution of trades 106, 108 Health and Retirement Study and proportion of participants (HRS) 65, 82 trading over time 104, 106 and Internet survey 65, 66 and response to market volatility 102 home ownership: and Roth 401(k) plans 153-4 and age distribution 24-5 and trading restrictions 115 by age of head of household and types of traders 105-8 (2007) 19, 20 active traders 106 and expansion of 15 demographic characteristics and mortgage refinancing trends 105, 107 29-30, **31** first-time traders 106, 115 over 1965–2010 period 16 infrequent traders 106 and stock ownership 16 portfolio and trading see also house values characteristics 109 Hill, T. 9 traders by type 107 Horneff, W. 103 household assets, by age of head of household (2007) 18-19 global financial and economic crisis, see financial and economic household consumption: crisis (2008-9) and age distribution 24 Glickstein, A. 9 over 2000-2009 period 24 Gomes, F. 121 apparel spending 27 Great Recession, and impact on changes by age of head 25-6, 27 retirement incomes 36–7, 56–7 food consumption 27 and average earnings 39-40 vehicles 27 and employment rates 39, 40, household debt: **41-2**, 43 by age of head of household and methodology of study 37-9 (2007) **19**–20

household debt: (cont.) Form 5500 plans with 1000+ and credit card repayment behavior participants 228-9 (1993-2011) 30 Fortune 1000 companies in Form 5500 datafiles 230-2 and increase in 16 and mean and median housing Fortune 1000 conversions 226-8 debt 70, 71 plan features by conversion and negative equity 71-2 status 227, 231 over 1965-2010 period 17 probability of conversion 227, and paying down 23 228, 229 household income: and growth of (2000-9) 219-25 and age distribution 24 conversions over time 223-4, 225 over 2000-2009 period 24 data sources 219-20 changes by age of head 25-6 number of conversions 222-3 and projected household income of as share of all DB plans in Fortune future retirees 46, **47–8**, 50 1000 (2000-7) **221** variation by individual as share of DB plans by industry (2007) 221-2 characteristics 51-3 household net worth: as share of nonfrozen DB plans by age of head of household (2000-7) **220** (1980-2010) 20-1and impact of financial crisis on by age of head of household (2007) 18 retirement plan design 218-19 and decline in 1-2 and increased popularity of 7 and legal status: and lifecycle economic theory 18 as percent of disposable income 14 conversion technique 216-17 household portfolio allocation, and discrimination 216 changes in 29-32 whipsaw effect 217 house values: and lower risk for sponsors 172 and age distribution 24-5 and Pension Protection Act and decline in 65, 81 (2006) 216, 217–18 mean and median values 70-1 negative equity 71-2 IBM 215 and geographical differences 70 income, see household income; and house price expectations 72-3 retirement income over 1985-2010 period 15 individual retirement account over 2000-2009 period 24 (IRA) 22-3, 37, 156 and pessimism over 3 Internal Revenue Code (IRC), and multiemployer pension see also home ownership plans 188, 193 housing debt, and mean and median housing debt 70, 71 Hurd, M. 3, 82, 121 Johnson, R. W. 3, 40 hybrid pension plans: and controversy over 215-16 labor force participation **28–9** and conversion of defined benefit and older people's expectations plans 215-16 75 - 7and determinants of conversion and retirement behavior 82-3 to 215, 218, 225, 232 see also employment; unemployment

labor supply: and benefit guarantees 195 and delaying retirement date 27-8 and benefit levels/formula 191 and collective bargaining 188, 191-2 and labor force participation 28-9 Lehman Brothers 104 and decline in number 188 and definition of 189 lifecycle economic theory 18 lifecycle impacts of financial crisis and egalitarian nature of 192 120-2, 146-7 and eligibility requirements 191, and asset returns 121-2 213n4 and consumer's lifecycle and Employee Retirement Income problem 125-7 Security Act (ERISA) 188, and consumption decisions 121 193-4, 195 and household portfolio choice 121 and employers' liabilities in and identifying tails of financial/ terminated plans 194 economic distribution 129-30 and employers' withdrawal and labor income 121, 122, 123-4 liability 194 and long-term effects: and financial stability 192 and 400+ plans 188 near-retirement cohort 142, **143–5**, 146 and funding rules for plans nearing younger cohort 138-9, 140-1, 142 bankruptcy 195 and model calibration 127-9 and government guarantee of 193-4 and model framework, labour and and growth in participants 188-9 capital markets 122-5 and impact of financial crisis (2008-9) 200 and responses to 122 and retirement behavior 121 difficulties in recovering from 203 and short-term effects 130 zone classification 201 near-retirement cohort 134-5, zone classification (2008–10) 202 and industries covered by 190 **136–7**, 138 younger cohort 130-1, 132-3, 134 and industry failure 192-3 Lusardi, A. 88, 105 and Internal Revenue Code 188, 193 and management of 188, 190 McFarland, B. 167, 170 and mass withdrawal 210, 213n7 Maurer, R. 5 and Multiemployer Pension Plan Mazo, J. F. 6-7 Amendments Act (MPPAA, Mitchell, O. S. 88, 103, 128, 258 1980) 194, 195-6 mortgage financing crisis 104 and operation of 190-1 mortgage refinancing, and trends and Pension Benefit Guaranty in 29-30, 31 Corporation protection 193–4 and Pension Protection Act (2006) mortgages: 188, 196-7, 199-200, 211-12 and slackening of underwriting standards 15 adoption period 200-1 and unsustainability of 15 assessment of plans 197 critical status ('red zone') 197, 198 Multiemployer Pension Plan Amendments Act (MPPAA, endangered status ('yellow zone') 1980) 194, 195-6 197 - 8multiemployer pension plans Funding Improvement Plan

188, 211-12

(FIP) 197-8

multiemployer pension plans (cont.) Obama, Barack 38, 174, 179 recovery programs 198-9 older people, and impact of economic rehabilitation plan 198 crisis 3, 65, 77-8, 82, 121, 147 safety valve 199 and adjusting to economic crisis 21-2, 32-3 zone certifications (2008) 199-200 and Pension Relief Act (2010) 210-11 and asset allocation 144-5 and performance over 1980-2008 and bequest probabilities 73-5 and consumption 25-6, 27, 66-70, period 195-6 and plans in critical status (2010 plan 122, 134-5, **136**, 142, **143**, 144 year) 203 apparel spending 27 'dark-red' plans with extended changes in 66-7 zone-exit goals 208 changes in mean and median default schedules 206-7, 207-8 spending 68-9, 70 distribution of red/bright red zone food consumption 27 reasons for increasing spending 68 plans 205 funded percentage and asset reasons for reducing spending 67 value **211** vehicles 27 geographical and industry and data sources for study 65-6 and equity investments 30-2 distribution 204 plan characteristics 203-4 and housing 70-2 preferred schedules 206-7, 208 decline in mean and median red-zone plans 204-8 values 70-1 rehabilitation plans 205-8 house price expectation 72-3 'rusty-red' plans aiming to avoid mean and median housing insolvency 209-10 debt 70, 71 safety valve 205 negative equity 71–2 sub-categories of 204-5 and labor force participation 28-9, trustee decision-making 206-7 75–7, 83 and portability of 190-1 and long-term effects 142, and Segal Company 188, 189 **143–5**, 146 and termination of 194 and retirement 75–7 and trust structure 190, 192 delaying 27-8 and variety of 189-90 probability of working past 62 75**-6**, 82 and Worker, Retiree and Employer Recovery Act (WRERA, probability of working past 2008) 198, 200-1 65 76–7, 82 mutual funds, and cash flows into 30, 31 and retirement age 145, 146 and saving behavior 134-5, 137, 143 National Academy of Science 50 changes in 22-7 National Bureau of Economic and short-term effects 134-5, **136-7**, 138 Research 3, 36 negative equity 71–2 and stock investment 134–5, 137 Netherlands, see Dutch pension system and stock market expectations 73, 74 New York Stock Exchange, and trading and unemployment 83 volumes (1995-2011) 30-2 and working hours 134-5 Nijman, T. 7, 258 see also age

Pang, G. 172, 173, 174 public sector pensions, and response to Pension Benefit Guaranty Corporation financial crisis 8, 271 (PBGC) 58, 161, 176, 178, 182 and asset allocation 264-5 and multiemployer pension in 2007 **264** plans 189, 193-4 in 2009 **265** changes in risk 269-70 and single-employer insurance program 176-9 correlation matrix for asset annual operations finances classes 268 (2007–10) 177 expected risk and return 268 increased premiums 179 increase in risk taking 269 key indicators 177-8 risk of target asset allocations 267-9 net position of (2001-10) 176-7 standard deviation of annual return on investment portfolio 179 return 268-9 valuation methodology 178-9 target allocations 265-6, 267 Pension Funding Equity Act (2004) 196 and benefit reductions 262 Pension Insurance Modeling System and contribution increases 262 (PIMS) 58 and data sources for study 263 Pension Protection Act (2006) 4, and decline in pension assets 262 151, 169 and funding status 262 and funding requirements 172–3 and investment practices 263 and hybrid pension plans 7, 172, and legal difficulties in 216, 217-18 changing 262-3 and multiemployer pension plans 188, 196-7, 199-200, 211-12 retirement age: adoption period 200-1 and delaying 27-8, 75 assessment of plans 197 and earlier retirement 75 and factors affecting 94n5 critical status ('red zone') 197, 198 endangered status ('yellow and impact of crisis: zone') 197-8 near-retirement cohort 145, 146 Funding Improvement Plan younger cohort 141-2, 144 (FIP) 197-8 and impact of recession 75–7 recovery programs 198-9 and Netherlands 244 rehabilitation plan 198 and subjective probability of working safety valve 199 past 62 75-6, 82 zone certifications (2008) 199-200 and subjective probability of working past 65 76–7, 82 Pension Relief Act (2010) 173-4 and multiemployer pension retirement behavior: plans 210-11 and employment shocks 82-3 Phillips, J. W. R. 128 and impact of financial crisis 81-4 Piggott, J. 258 and wealth shocks 82 Retirement Confidence Survey (RCS) 88 portfolio trading, and research on 103 see also 401(k) plans, and trading in retirement income, and impact of poverty, and projected numbers living crisis 3, 36–7, 56–7 in or near **49**, 50 and average earnings 39-40 Profit Sharing/401k Council of America and employment rates 39, 40, (PSCA) 152-5 **41–2**, 43

retirement income, and impact of crisis	Schieber, S. 215
(cont.)	Segal Company, and multiemployer
and methodology of study 37-9	pension plans 188–9, 196,
and projected household income of	199–200, n. 202 , n. 204–5 ,
future retirees 46, 47–8 , 50	211, n. 213
and projected income of future	Shapiro, M. D. 80, 121, 147
retirees 45	Smith, B. A. 9
and projected number in or near	Smith, K. E. 58, 59
poverty 49, 50	Social Security Administration (SSA):
and projected survival rates 54–5 , 56	and informing public about
and projected work histories of future	retirement planning 88
retirees 44	and promotion of financial
and reduction in Social Security	literacy 88
benefits 43–6	and research on retirement 90
	and Social Security Statement 88–9
and variation by individual characteristics 51–3	
	and 'Thinking of Retiring?' 89
risk:	and 'What Young Workers Should Know' 89
and decline in willingness to take 29	
and defined benefit (DB) plans 170–2	and 'When to Start Receiving
and Dutch pension system:	Retirement Benefits' 89–90
advanced risk management 239	Social Security Advisory Board
intergenerational risk-sharing 240–1	(SSAB) 89
participants' awareness of 242–3	Social Security benefits:
lack of risk-bearing capital 243–4	and changes in claiming patterns 3–4
communication of 247	and deciding to collect 83
optimal risk-sharing 248	and determining insured
and hybrid pension plans 172	status 95n16
and need for greater understanding	and flexible collection age 124
of 8	and future reduction because of
and public sector pension asset	recession 43–6
allocation 267–9	and retirement earnings test 94n12
Rogalla, R. 9	and role in retirement security 83
Rohwedder, S. 3, 14, 36, 65, 75, 82, n.	and Social Security Statement 88–9
78, 82, n. 94, 121, 147	and trends in claiming behavior
Roth 401(k) plans 153–4	84–8
_	benefit awarded at age 62 84
saving behavior:	claims at age 62 by birth
and changes in 22–7	cohort 85 –6, 91
and changes in rates 2	claims at age 62 by birth cohort and
and financial literacy 88	race 86
and impact of crisis:	impact of unemployment 86-7, 88,
near-retirement cohort 134–5,	92–3
137, 143	see also Social Security Administration
younger cohort 130–1, 133 ,	(SSA)
139, 141	Social Security Board of Trustees 38–9,
and increase in rates 23, 82	n. 40 , 57
and mercase in races 45, 64	11. 10, 01

Society of Actuaries, and Retirement trade unions, and multiemployer 20/20 initiative 180 pension plans 189-90 socio-economic status, and projected household income of future unemployment 2 retirees 50-6 and age distribution 20-1, 28 soft rights, and Dutch pension and increase in 17, 81, 120 system 252-3 and long-term unemployment stock market: trends 17 and decline in 64, 81, 101 and older people 83 and expectations of 73, 74 and retirement behavior 82-3 and NYSE trading volumes and Social Security benefit (1995-2011) 30-**2** claiming 86-7, 88, 92-3 and returns of S&P 500 (2007-10) and underemployment rate 17 161**-2** and vulnerability to 64-5 and stock prices (1986-2010) 15 see also employment; labor force stock ownership/investment: participation by age of head of household Urban Institute's dynamic simulation (2007) 18**-19**, **20** model (DYNASIM3) 36-38, and expansion in 15-16 n. **44–5**, n. **49**, n. **55**, 57–59 and home ownership 16 Utkus, S. P. n. 116 and impact of crisis: near-retirement cohort vehicle purchases, and changes in 134-5, **137** 2, **26**, 27 younger cohort 130-1, 133 and trading volumes (1995-2011) Warshawsky, M. J. 6, 167, 169, 172-4, 30**-2** 178, 180, n. 184–5, 212 wealth shocks, and impact on Storesletten, K. 121, 127, 129, n. 148 Survey of Consumer Finances (SCF) 15, retirement behavior 81-2 17-8, 20, 23, 27-9 Wilshire Consulting 267 and stock ownership 15-16 Worker, Retiree and Employer Recovery Survey of Income and Program Act (WRERA, 2008) 173, Participation (SIPP) 37, 57–9 n. 184, 198 survival rates, and projected rates by and multiemployer pension individual characteristics 56 plans 198, 200-1 working hours, and impact of crisis: and near-retirement cohort 134-5, 136 Taft-Hartley Act, and multiemployer pension plans 188, 190, and younger cohort 130-1, 132, 192, 206 138. **140** Tang, N. 4–5, n. 33, 155 Wray, D. 4 target-date funds (TDFs) 4, 154, 167 Timmerman, A. 121 Young, J. n. 116

OUP CORRECTED PROOF - FINAL, 11/8/2012, SPi