

RETIREMENT RISK MANAGEMENT IN TIMES OF TURMOIL

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The recent economic recession has made many Americans acutely aware that they do not fully understand and appreciate risk. This lecture identifies individual, institutional, national, and global sources of retirement risk. As individuals are handed more control in planning and managing their retirement, not all of them do so in a completely rational and informed manner because they are not educated in financial economics and fail to consult those who are. Even the financially literate may not follow through with or adhere to a sound plan. On the institutional and national levels, pension systems and Social Security, respectively, are in need of immediate reform. Meanwhile, our world continues to both integrate and age. After examining these risks, the author proposes ways to mitigate, finance, and insure them in order to better assist future retirees.

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In seeking better ways to think about and manage retirement risk, we must identify the risks, mitigate the risks, and most importantly, find ways to finance and insure the risks where possible. Accordingly, my lecture focuses on identification, mitigation, and financing for each of the four key sources of retirement risk. First, I sketch the challenges facing individuals as they construct their own retirement plans and a few solutions to these challenges. Second, I describe institutional risks and how to strengthen the financial institutions that we anticipate relying on during our retirement. Third, I offer some thoughts about our most important country risks, and last, I close with a brief mention of global risk.

I. Risks Facing Households

Economists who study financial decision making generally begin with a model of the “rational economic decision-maker.”¹ In the context of retirement planning, this involves the so-called life cycle theory of saving, wherein people are assumed to act as informed and thoughtful calculators.² That is, when people start working, they are likely to expect an upward-sloping earnings profile through middle age.³ Then, at some point, they will want to stop working and retire.⁴ Because labor income does not continue forever, individuals will rationally consume less than their labor earnings, building up assets until retirement; post-retirement, people will rationally draw down their nest eggs in a systematic way.⁵ If all goes well, individuals will strategically end up with nothing on the day they die (assuming that they have no bequest motive).⁶

In this context, the idea of retirement financing boils down to a plan to forecast labor earnings growth and investment returns, and to

1. See Olivia S. Mitchell & Stephen P. Utkus, *Lessons from Behavioral Finance for Retirement Plan Design*, in PENSION DESIGN AND STRUCTURE: NEW LESSONS FROM BEHAVIORAL FINANCE 3, 3–4 (Olivia S. Mitchell & Stephen P. Utkus eds., 2004).

2. See James F. Moore & Olivia S. Mitchell, *Projected Retirement Wealth and Saving Adequacy*, in FORECASTING RETIREMENT NEEDS AND RETIREMENT WEALTH 68, 69 (Olivia S. Mitchell et al. eds., 2000) [hereinafter Moore & Mitchell, *Projected Retirement Wealth*].

3. Mitchell & Utkus, *supra* note 1, at 4–5.

4. See *id.*

5. Olivia S. Mitchell & James F. Moore, *Can Americans Afford to Retire? New Evidence on Retirement Saving Adequacy*, 65 J. RISK & INS. 371, 390 (1998) [hereinafter Mitchell & Moore, *Retirement Saving Adequacy*].

6. *Id.*

save, invest, and draw down the money just right, so as not to run out of money while still alive.⁷ This model is extremely useful for many analytical purposes, but at the same time, current economic conditions have made us all painfully aware that sometimes things go awry.⁸

For instance, to do the job right, consumers must be well-informed and adept enough to make smart saving and investment decisions so as to formulate an optimal asset accumulation and decumulation path. The economic life cycle model also presumes that people not only plan, but also carry out their plans—that is, that the decision maker has no problems with self-control.⁹ But recent research has shown that real people are not always as efficacious as the life cycle model would assume.¹⁰ For instance, for many years, I have maintained several different bank accounts: one is to pay for household expenses, another is to save for my children's college, and two others are intended for other objectives (like replacing the old car and vacations). The rational "me" thinks that it is foolish to have to balance four separate accounts each month, but the realistic "me" knows that following this separate account tactic gets me to pay attention to how near or far I am from each goal.

In the context of the workplace, pensions play the same role as the "separate account." In other words, a traditional defined benefit pension was developed in part as a self-control device, one which helped workers set aside the money they earned by saving it before it was even noticed on the "if you don't see it, you won't spend it" principle.¹¹ In this sense, one's pension accrual represents deferred labor earnings, which are saved so that the money will be there to support

7. Olivia S. Mitchell, James F. Moore & John W. Phillips, *Explaining Retirement Saving Shortfalls*, in FORECASTING RETIREMENT NEEDS AND RETIREMENT WEALTH, *supra* note 2, at 139, 140–41.

8. See, e.g., Wolfram Horneff et al., *Variable Payout Annuities and Dynamic Portfolio Choice in Retirement*, J. PENSION ECON. & FIN. (forthcoming 2009); Olivia S. Mitchell et al., *New Evidence on the Money's Worth of Individual Annuities*, 89 AM. ECON. REV. 1299, 1312–15 (1999) (discussing problems that can arise with annuity contracts).

9. See Annamaria Lusardi & Olivia S. Mitchell, *Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth*, 54 J. MONETARY ECON. 205, 220–22 (2007) [hereinafter Lusardi & Mitchell, *Baby Boomer Retirement Security*].

10. Robert L. Clark et al., *Sex Differences, Financial Education, and Retirement Goals*, in PENSION DESIGN AND STRUCTURE: NEW LESSONS FROM BEHAVIORAL FINANCE, *supra* note 1, at 185, 197.

11. See Amy B. Monahan, *Addressing the Problem of Impatients, Impulsives and Other Imperfect Actors in 401(k) Plans*, 23 VA. TAX REV. 471, 478 (2004).

one's old age.¹² The process of taking out a mortgage to buy a home and making the monthly payments can also be seen as a self-enforced commitment mechanism to build up assets in a regular and periodic fashion.¹³

All of this indicates that it is actually more difficult to save for retirement than the simple life cycle model suggests.¹⁴ The next question is: how well does the average American do when saving for retirement? To address this point, we are fortunate to have an invaluable survey called the Health and Retirement Study (HRS).¹⁵ HRS is a massive effort following a nationally representative sample of 22,000 Americans over the age of fifty for the last seventeen years.¹⁶

Of particular interest is the subset of the HRS respondents on the verge of retirement in their fifties.¹⁷ Figure 1 shows the distribution of households by wealth in each of twenty five-percentile groups arrayed from poorest, on the left, to wealthiest, on the right.¹⁸ Focusing on the midgroup, the median, for the moment, one salient trait is that the median older household is actually rather well-diversified.¹⁹ That is, it has about one-fifth of its assets in housing, one-fifth in employer pensions, and one-fifth in financial assets.²⁰ This leaves two-fifths of the retirement wealth represented by expected Social Security benefits.²¹

Of course, there is also important variability across the population with regard to retirement wealth, with the richest having the highest concentration in financial wealth, and the poorest being "underwater," that is, aside from anticipated Social Security benefits, they have substantial personal debt and also negative net equity in their homes.²² The bottom third of the wealth distribution is seriously underdiversified in that it relies heavily on the Social Security program

12. *See id.*

13. Lusardi & Mitchell, *Baby Boomer Retirement Security*, *supra* note 9, at 211.

14. *Id.* at 206.

15. Mitchell & Moore, *Retirement Saving Adequacy*, *supra* note 5, at 372.

16. Health and Retirement Study, About the Health and Retirement Study, <http://hrsonline.isr.umich.edu> (last visited Oct. 24, 2009).

17. Mitchell & Moore, *Retirement Saving Adequacy*, *supra* note 5, at 372.

18. *Id.* at 375 fig.1.

19. *Id.*

20. *Id.*

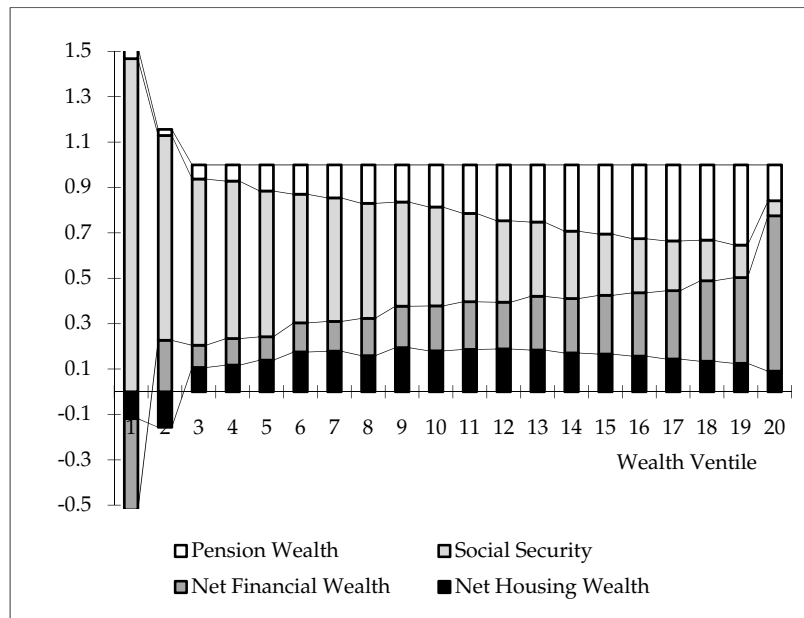
21. *Id.*

22. *Id.* at 374-75.

that is gravely underfunded and faces insolvency within about eight years.²³

FIGURE 1

COMPOSITION OF OLDER HOUSEHOLD'S WEALTH AS PERCENT OF TOTAL WEALTH



Note: Computed from the Health and Retirement Study; households median age 56. Olivia S. Mitchell & James F. Moore, *Can Americans Afford to Retire? New Evidence on Retirement Saving Adequacy*, 65 J. RISK & INS. 371, 375 fig.1 (1998).

Yet it is not only the poor who are at risk as they look ahead into retirement.²⁴ The data also indicate that savings shortfalls are widespread, affecting people up and down the earnings distribution.²⁵ My research also examines whether people have accumulated enough to continue consuming at the same levels for the rest of their lives.²⁶ Of course, this might not be everyone's preferred benchmark; some

23. *Id.*

24. See NAT'L INST. ON AGING, U.S. DEP'T OF HEALTH & HUMAN SERVS., *GROWING OLDER IN AMERICA: THE HEALTH & RETIREMENT STUDY* 57-60 (2007), http://www.nia.nih.gov/NR/rdonlyres/D164FE6C-C6E0-4E78-B27F-7E8D8C0FFEE5/0/HRS_Text_WEB.pdf.

25. *See id.*

26. *See Mitchell & Moore, Retirement Saving Adequacy, supra note 5, at 375-76.*

people surely will need less income, and many certainly will require more.²⁷ In any event, taking that criterion as a starting place, the research conducted before this most recent crash estimated that the median older family would have to boost savings by around 20% of annual income if it sought to retire young at age sixty-two and preserve the same lifestyle.²⁸ Given the market crash, this figure is now most likely double.²⁹ Interestingly, we also found that those who earned the most during their work lives would have to do even more, as they experience the worst savings shortfalls.³⁰ Although this is a disturbing finding, the rate can be cut by at least half by working longer and postponing retirement to age sixty-five or beyond.³¹

So why do people in the real world seem to fall so far short of what the simple theory predicts? Behavioral finance research, which studies how people make saving and investment decisions, has uncovered one explanation, and the evidence is a bit discouraging if not surprising.³² The sad truth is that many people simply lack the necessary tools to plan sensibly for retirement.³³ For instance, when asked where they get their financial advice, very few people appear to seek out those trained in financial counseling.³⁴ Instead, people are much more likely to rely on their own judgment or on that of relatives.³⁵

Another angle on the problem is that many fail to understand basic financial economics.³⁶ I have tested this proposition in a wide range of countries and settings, with young adults as well as people on the verge of retirement.³⁷ We have devised three questions that we term the "basic" financial literacy indicators, namely a Percentage

27. *Id.*

28. *Id.* at 395.

29. *See, e.g.*, Carla Fried, A Personal Bailout Plan for Your Retirement (Apr. 17, 2009), <http://moneywatch.bnet.com/retirement-planning/article/rebuild-your-retirement-savings/289683> (recommending additional retirement savings to maintain the same lifestyle after the market crash).

30. Mitchell, Moore & Phillips, *supra* note 7, at 143.

31. Moore & Mitchell, *Projected Retirement Wealth*, *supra* note 2, at 85.

32. Annamaria Lusardi & Olivia S. Mitchell, *Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education*, *BUS. ECON.*, Jan. 2007, at 35, 36 [hereinafter Lusardi & Mitchell, *Financial Literacy and Retirement Preparedness*].

33. *Id.*

34. Mitchell & Moore, *Retirement Saving Adequacy*, *supra* note 5, at 388.

35. *Id.*

36. Lusardi & Mitchell, *Financial Literacy and Retirement Preparedness*, *supra* note 32, at 36.

37. *Id.* at 36–37.

Calculation, a Lottery, and a Compound Interest question.³⁸ The wording of these questions in the HRS is as follows:

- Percentage Calculation: If the chance of getting a disease is 10%, how many people out of 1,000 would be expected to get the disease? [Correct answer: 100].³⁹
- Lottery: If five people all have the winning number in the lottery and the prize is \$2 million, how much will each of them get? [Correct answer: \$400,000].⁴⁰
- Compound Interest: Let's say you have \$200 in a savings account paying 10% interest per year. How much would you have in the account at the end of two years? (in this case possible responses included "less than \$240," "exactly \$240," or "more than \$240.") [Correct answer: more than \$240].⁴¹

In the HRS, we uncovered strikingly low performance on these basic financial literacy questions: 16% could not answer the percentage question, one-third could not respond to the lottery question, and almost 80% of the respondents did not understand compound interest.⁴² This is despite the fact that these people were, on average, around age fifty-five, having made a wide variety of saving, investment, loan, mortgage, and other decisions over the previous thirty years.⁴³ It is no wonder we have a subprime mortgage problem.

What can be done about this woeful state of financial illiteracy? One perhaps comforting finding is that more educated people are, as a rule, more likely to get the answers right.⁴⁴ Yet even so, the concept of compound interest still remains murky, even to those with college degrees and more.⁴⁵ As a former central banker has said:

There can hardly be a better time to make the case for economic and financial literacy . . . While the current troubles in the housing industry stem from a number of causes, a better-informed citizenry would likely have resulted in more-prudent decision making and, consequently, less harm to the economy.⁴⁶

38. *Id.* at 37.

39. *Id.*

40. *Id.*

41. *Id.*

42. *Id.* at 37 tbl.1.

43. *Id.* at 37.

44. Lusardi & Mitchell, *Baby Boomer Retirement Security*, *supra* note 9, at 216.

45. *Id.* at 217 fig.2.

46. Governor Frederic S. Mishkin, The Importance of Economic Education and Financial Literacy, Speech at the Third National Summit on Economic and Fi-

In related research, we also have found that financial literacy is quite a bit higher when consumers are exposed to economics in high school and in employer-sponsored programs.⁴⁷

However, it is not sufficient to “take the horse to water” per Dorothy Parker’s famous quote; one must also get it to drink. Thus a related issue contributing to America’s retirement crisis is that very few people plan for retirement and even fewer still successfully execute their plans.⁴⁸ My research shows that fewer than one-third of the older Americans surveyed had ever tried to figure out how much they needed to live on in retirement, and fewer still had actually developed a plan to get there.⁴⁹ Strikingly, only 18% said that they always or mostly stuck to their plan, and those who figured out their needs, planned, and stuck to their plans were much wealthier than those who failed.⁵⁰

As management guru Peter Drucker has noted, “The best plan is only good intentions unless it degenerates into work.”⁵¹ Recent studies have confirmed this, including one that followed employees who participated in an employer-sponsored retirement planning seminar.⁵² Some workers had not yet agreed to set money aside for retirement, while others were already participating in the company’s 401(k) plan.⁵³ After the seminar, all of the attendees confirmed that they were going to immediately begin saving in the plan if they were not yet members, and the plan sponsor felt confident about the day’s efforts.⁵⁴ Yet a follow-up shortly afterward revealed that very few ac-

nancial Literacy, Washington, D.C. (Feb. 27, 2008) (transcript available at <http://www.federalreserve.gov/newsevents/speech/mishkin20080227a.htm>).

47. Our work thus extends prior findings using smaller and more specialized samples. B. Douglas Bernheim & Daniel M. Garrett, *The Effects of Financial Education in the Workplace: Evidence from a Survey of Households*, 87 J. PUB. ECON. 1487, 1490 (2003).

48. See Lusardi & Mitchell, *Financial Literacy and Retirement Preparedness*, *supra* note 32, at 41; see also Annamaria Lusardi, Planning and Saving for Retirement 5 (December 2003) (unpublished manuscript, on file with the Dartmouth College Department of Economics), available at http://www.dartmouth.edu/~alusardi/Papers/Lusardi_pdf.pdf.

49. Lusardi & Mitchell, *Baby Boomer Retirement Security*, *supra* note 9, at 213.

50. See *id.* at 214–15.

51. PETER FERDINAND DRUCKER & JOSEPH A. MACIARIELLO, THE DAILY DRUCKER: 366 DAYS OF INSIGHT AND MOTIVATION FOR GETTING THE RIGHT THINGS DONE 81 (2004).

52. James J. Choi et al., *Defined Contribution Pensions: Plan Rules, Participant Choices, and the Path of Least Resistance*, in 16 TAX POLICY AND THE ECONOMY 67, 101–03 (James M. Poterba ed., 2002).

53. *Id.* at 102.

54. *Id.*

tually ever signed up for the plan.⁵⁵ So, as policymakers concluded in 2006 with the passage of the Pension Protection Act, it may be prudent to set up auto-enrollment pensions—plans that both encourage saving and make it easy, benefitting those prone to defer making decisions, who lose their PIN numbers, or who otherwise are distracted by the demands of real life.⁵⁶

Having touched on factors enhancing peoples' ability (or inability) to plan and save for retirement, I will next identify the risks inherent in the drawdown or decumulation phase. This refers to how one manages one's assets during retirement.⁵⁷ Unfortunately for both Baby Boomers and retirees, this topic has been given far too short shrift by employers and financial advisers,⁵⁸ but in the current environment it is crucial. Here, the essential question is how not to live too long; that is, how one can draw down the money accumulated so as not to outlive one's assets.⁵⁹ The problem is that to answer this question we need to know how long we will live, which is not the easiest thing to predict for most of us.

Many retirees face a conundrum: on the one hand, they will need to draw down a portion of their assets to live on in retirement, but on the other, some will want to leave a bequest.⁶⁰ Such computations are confounded by not knowing how much one's investments will earn and how long one will live, which makes it hard to know how much to draw down from one's retirement assets each year.⁶¹

My experience with people thinking about these decisions is that few fully appreciate the risk of outliving their assets.⁶² One reason is that people cannot fathom how much money will be needed to simply

55. *Id.*

56. Compare Pension Protection Act of 2006, Pub. L. No. 109-280, § 902, 120 Stat. 780, 1033 (allowing safe harbor for employers that automatically enroll employees in pension plans), with Choi et al., *supra* note 52, at 74–82 (describing the benefits of auto-enrollment pensions).

57. Olivia S. Mitchell, *Developments in Decumulation: The Role of Annuity Products in Financing Retirement*, in AGEING, FINANCIAL MARKETS AND MONETARY POLICY 97, 97 (Alan J. Auerbach & Heinz Herrmann eds., 2002).

58. See Jeffrey R. Brown, *A Paycheck for Life: The Role of Annuities in Your Retirement Portfolio*, TIAA-CREF INSTITUTE TRENDS AND ISSUES, June 2008, at 1, http://www.tiaa-crefinstitute.org/pdf/research/trends_issues/TrendsIssues_0608Brown_01.pdf.

59. *Id.* at 2.

60. Mitchell & Moore, *Retirement Saving Adequacy*, *supra* note 5, at 390.

61. *Id.*

62. See Mitchell et al., *supra* note 8, at 1299.

cover out-of-pocket medical care costs.⁶³ For instance, it has been estimated that a sixty-five-year-old man with median drug expenditures would need to have current savings amounting to \$159,000 just to cover his future medical expenses if he wanted to be 90% certain to have enough money (this assumes he is covered by Medicare but lacks employer-based retiree health insurance and buys Medigap Plan F and Medicare Part D outpatient drug coverage).⁶⁴ A woman with median drug expenditures would need to set aside \$184,000 just for her health care costs.⁶⁵ Nursing home costs would be on top of these levels.⁶⁶ Most early retirees also will need to buy private health insurance up to the age of Medicare eligibility, as well as substantial out-of-pocket costs for deductibles, co-pays, and so forth.⁶⁷

A related problem is that people have little idea of the risk of living a very long time.⁶⁸ Here, I fault some retirement calculators which tend to emphasize the concept of the "life expectancy" to compute how long the money must last.⁶⁹ The problem with this difficulty is that one's life expectancy is simply a measure of the average number of years remaining, but at least half the people will live longer than this, leaving 50% of the people facing a shortfall.⁷⁰

For this reason, I have argued in favor of the type of protection offered by a payout annuity.⁷¹ In its simplest form, this is a financial contract providing the buyer with the opportunity to protect himself against the risk of outliving his assets by risk pooling.⁷² In other

63. See Paul Fronstin, *Savings Needed to Fund Health Insurance and Health Care Expenses in Retirement*, EMP. BENEFIT RES. INST. ISSUE BRIEF, July 2006, at 11, available at http://www.ebri.org/pdf/briefspdf/EBRI_IB_07-20061.pdf.

64. Paul Fronstin, Dallas Salisbury & Jack VanDerhei, *Savings Needed to Fund Health Insurance and Health Care Expenses in Retirement: Findings from a Simulation Model*, EMP. BENEFIT RES. INST. ISSUE BRIEF, May 2008, at 7, available at http://www.ebri.org/pdf/briefspdf/EBRI_IB_05-20081.pdf. Fronstin also notes that a man with drug expenses at the ninetieth percentile would need a nest egg of about \$331,000 and a woman would need \$390,000 at age sixty-five, simply to cover retiree medical costs. *Id.* at 8 fig.2.

65. *Id.* at 7.

66. *Id.* at 9.

67. See Fronstin, *supra* note 63, at 14–16.

68. See Ivica Dus, Raimond Maurer & Olivia S. Mitchell, *Betting on Death and Capital Markets in Retirement: A Shortfall Risk Analysis of Life Annuities Versus Phased Withdrawal Plans*, 14 FIN. SERVICES REV. 169, 170 (2005).

69. See James Daw, *The Pension Calculator Shootout*, TORONTO STAR, Jan. 31, 2002, at K5.

70. See Rob Brown, *The Duration Dilemma*, ON WALLSTREET, Mar. 2007, at 76, 76.

71. Mitchell et al., *supra* note 8, at 1299–1300.

72. James M. Poterba, *A Brief History of Annuity Markets*, in JEFFREY R. BROWN ET AL., *THE ROLE OF ANNUITY MARKETS IN FINANCING RETIREMENT* 23, 23 (2001).

words, the buyer turns over a sum of money to an insurer which then spreads longevity risk over a large number of people.⁷³ The company can pay those who live a long time because those who die young forfeit some or all of the amount paid.⁷⁴

Much research on annuities has explored the so-called money's worth ratio, which compares the expected benefit received to the premium paid.⁷⁵ Some payout annuities have been criticized as poor investments, and indeed there are many complex features of the products currently on the market.⁷⁶ Yet what many people miss is that these are insurance products rather than investments, so they should be valued as such.⁷⁷ My research shows that typical money's worth ratios can be rather close to 1.0, reflecting the reasonable need of insurers to cover administrative fees and normal profit.⁷⁸

Having demonstrated that payout annuities may be good value, why do so few people actually purchase annuities during the retirement phase of life? One reason is that people have only recently started to recognize their essential importance for providing reliable retirement income.⁷⁹ Other countries are ahead of us in this regard. For example, the United Kingdom and Germany have mandated payout annuities to ensure that people do not run out of income.⁸⁰ Singapore is also following suit.⁸¹

I anticipate that payout annuities providing true survival insurance will become much more widespread and popular in the future if insurers can overcome several obstacles.⁸² First, retirees are justly concerned about the staying power of the insurers themselves.⁸³ Today,

73. *Id.* at 24.

74. *Id.*

75. Mitchell et al., *supra* note 8, at 1299–1300.

76. See Jeanne Finberg, *Financial Abuse of the Elderly in California*, 36 LOY. L.A. L. REV. 667, 672 (2003).

77. See Jeffrey R. Brown, Olivia S. Mitchell & James M. Poterba, *Mortality Risk, Inflation Risk, and Annuity Products*, in INNOVATIONS IN FINANCING RETIREMENT 175–97 (Z. Bodie, B. Hammond & O. Mitchell eds., 2002).

78. David McCarthy & Olivia S. Mitchell, *Annuities for an Ageing World*, in DEVELOPING AN ANNUITY MARKET IN EUROPE 13, 33 (Elsa Fornero & Elisa Luciano eds., 2004).

79. Zvi Bodie, *An Analysis of Investment Advice to Retirement Plan Participants*, in THE PENSION CHALLENGE: RISK TRANSFERS AND RETIREMENT INCOME SECURITY 19, 28–31 (Olivia S. Mitchell & Kent Smetters eds., 2003).

80. Dus, Maurer & Mitchell, *supra* note 68, at 190.

81. Suzanne Doyle, Olivia S. Mitchell & John Piggot, *Annuity Values in Defined Contribution Retirement Systems: Australia and Singapore Compared*, 37 AUSTRALIAN ECON. REV. 402, 403 (2005).

82. McCarthy & Mitchell, *supra* note 78, at 42.

83. *Id.* at 41.

state solvency guarantees usually protect payout annuities to about \$100,000, but this will drive people to spread their purchases across insurers.⁸⁴ Second, some financial advisers are quite antagonistic toward annuities and argue that they can manage retirees' money more cost-effectively than can insurers.⁸⁵ But one should note that this depends on how one values the risk of outliving one's assets, versus the protection that insurance provides.⁸⁶ A single approach is unlikely to fit everyone.⁸⁷ For this reason, many new products that offer a range of new options are coming to the market for Baby Boomers; these include a lower benefit level when the retiree is healthy and a second, higher benefit that is triggered if the retiree becomes disabled (as certified by a medical expert).⁸⁸ Inflation-linked annuities also need a new focus now that the United States and Europe offer inflation-indexed bonds.⁸⁹ In other words, there is ample opportunity for growth in both the demand for and supply of payout annuities in decades to come.⁹⁰

II. Institutional Risk

Let me turn now to the role of institutions in helping workers build their nest eggs and in helping retirees find security in their golden years. For many in the United States, company pensions have long played a key role in this process, but pensions today are also in turmoil, to the point where it seems clear that there must be a major overhaul in the way these function.⁹¹ What we need are new risk mitigation measures, including better transparency in accounting and

84. See Kristen McNamara & Shelly Banjo, *Look Before You Leap into Fixed Annuities*, WALL ST. J., Feb. 20, 2009, at D4.

85. Olivia S. Mitchell, Executive Dir., Pension Research Council, Presentation for the Accademia Nazionale dei Lincei: The Value of Annuities 5 (Jan. 9, 2004) (transcript available at <http://web.econ.unito.it/cerp/Pubblicazioni/archivio/OTHER/Mitchell-INAPrizeLecture1-9-04.pdf>) [hereinafter *The Value of Annuities*].

86. See *id.*

87. See Poterba, *supra* note 72, at 32–33.

88. *The Value of Annuities*, *supra* note 85, at 5.

89. *Id.*

90. *Id.* at 4.

91. See Robert L. Clark & Olivia S. Mitchell, *The Changing Retirement Paradigm*, in *REINVENTING THE RETIREMENT PARADIGM* 3, 4–5 (Robert L. Clark & Olivia S. Mitchell eds., 2005).

actuarial reporting, and new financing measures, including better funding and reinsurance structures.⁹²

In the old days, the traditional pension was a defined benefit plan.⁹³ Here, the worker knew what his benefit would be according to a formula, and it was up to the employer to ensure that the plan was sufficiently well-backed by assets to pay out promises.⁹⁴ In a defined benefit plan, the sponsoring firm would make investment decisions and bear capital market risk.⁹⁵ If the parent company went bankrupt, workers' pensions were at risk.⁹⁶ These plans tended to reward most long-term employees and penalize job changers.⁹⁷

The second type of pension is the defined contribution model, which many know as the 401(k).⁹⁸ Here, a sponsoring employer will offer a salary-deferred account into which employees contribute, and employees also have leeway over where to invest the money.⁹⁹ Both defined benefit and defined contribution plans allow workers to set aside pre-tax money and to take benefits during retirement when many are in a lower tax bracket; however, the defined contribution model was appealing to Boomers because it made job changing easy, as the accruals were portable.¹⁰⁰ This model also permitted workers to select their own investments and offered a more tangible buildup than the old-fashioned defined benefit model.¹⁰¹ But as many are now painfully aware, the defined contribution model also exposes participants directly to the volatility of the capital market.¹⁰²

92. See Robert Palacios, *Securing Public Pension Promises Through Funding*, in THE PENSION CHALLENGE: RISK TRANSFERS AND RETIREMENT INCOME SECURITY, *supra* note 79, at 116, 119, 121.

93. Olivia S. Mitchell & Kent Smetters, *Overview: Developments in Risk Management for Retirement Security*, in THE PENSION CHALLENGE: RISK TRANSFERS AND RETIREMENT INCOME SECURITY, *supra* note 79, at 1, 2.

94. *Id.*

95. *Id.* at 2–3.

96. *See id.* at 6.

97. *See id.* at 4.

98. Olivia S. Mitchell & Sylvester J. Schieber, *Defined Contribution Pensions: New Opportunities, New Risks*, in LIVING WITH DEFINED CONTRIBUTION PENSIONS 1, 1 (Olivia S. Mitchell & Sylvester J. Schieber eds., 1998).

99. Clark et al., *supra* note 10, at 186–87.

100. See Leora Friedberg & Michael T. Owyang, *Not Your Father's Pension Plan: The Rise of 401(k) and Other Defined Contribution Plans*, FED. RES. BANK ST. LOUIS, Jan.–Feb. 2002, at 23, 31.

101. *Id.* at 25–26.

102. Mitchell & Smetters, *supra* note 93, at 7.

Notwithstanding which type of pension one has, most experts agree that it is preferable to have a funded versus an unfunded plan.¹⁰³ That is, workers and retirees are likely to be better off having assets backing the promises rather than simply relying on the plan sponsor to still be around to pay during retirement.¹⁰⁴ In contrast, with pay-as-you-go plans, taxes or contributions must be charged to the young in order to pay benefits to the retired.¹⁰⁵ In my view, a pay-as-you-go approach has become too expensive given population aging, as more and more elderly are being supported by fewer workers.¹⁰⁶ By contrast, retirement security is enhanced in a funded plan because money is collected and invested in advance to pay out future benefits.¹⁰⁷ In a funded pension, the assets can also be diversified, which, if properly done, will protect retirees better than pay-as-you-go pensions.¹⁰⁸ But regardless of the type of plan, building up pension assets requires that there be good governance structures to ensure sensible investment strategy and transparency.¹⁰⁹ Many of today's pension problems stem from failures in this dimension, particularly with regard to the mismatch of pension assets and promises.¹¹⁰

To illustrate this point, it is worth noting what the global pension picture looked like as of January 2008. At that time, U.S. pensions were the largest in the world, with their combined \$15 trillion in assets dwarfing those of all other nations.¹¹¹ Yet, the dominant U.S. pension plan investment strategy was equity-based, as collective pensions held 60% of their assets in stocks compared to more conservative patterns in Europe.¹¹² As a result, U.S. pensions were more se-

103. *Public-Sector Pensions: Unsatisfactory State*, ECONOMIST, July 11, 2009, at 77, 77.

104. *Id.*

105. John F. Cogan & Olivia S. Mitchell, *Perspectives from the President's Commission on Social Security Reform*, 17 J. ECON. PERSP. 149, 149 (2003).

106. *See id.*

107. *See, e.g.*, E. Philip Davis, *An International Comparison of the Financing of Occupational Pensions*, in SECURING EMPLOYER-BASED PENSIONS: AN INTERNATIONAL PERSPECTIVE 244, 247-48 (Zvi Bodie, Olivia S. Mitchell & John A. Turner eds., 1996).

108. *See id.* at 249.

109. *See* Palacios, *supra* note 92, at 117-18.

110. *See* Mitchell & Smetters, *supra* note 93, at 9-10.

111. Matt Ackermann, *10-Year Doubling in Retirement Assets*, AM. BANKER, Mar. 31, 2008, at 9.

112. *Id.*

verely hit by the stock market downturn than those in many other countries.¹¹³

Although the defined benefit plans of America are in poor shape, some may take solace in the federally managed agency charged with reinsuring these pensions.¹¹⁴ Known as the Pension Benefit Guaranty Corporation (PBGC), this entity collects premiums and stands behind bankrupt companies' defined benefit plans to a point.¹¹⁵ That is, it insures benefits only up to a limit (\$54,000 per year in 2009 for an age sixty-five retiree), and the payments are actuarially reduced for younger workers (for instance, to \$24,300 per year for a fifty-five-year-old).¹¹⁶

Unfortunately, the PBGC itself faces shortfalls.¹¹⁷ In a very short time span, the system went from a surplus position (having close to \$10 billion in the late 1990s)¹¹⁸ to a staggering deficit more recently.¹¹⁹ One reason was that it too was investing in equities.¹²⁰ Another was that it had underpriced the insurance that it was offering, which provided firms with an incentive to bet even more heavily in equities.¹²¹ In my view, greatly enhanced reporting and transparency regarding defined benefit plan assets and liabilities is needed today.¹²² Meanwhile, however, many firms are freezing or terminating their plans rather than fixing them.¹²³

113. See EDWARD WHITEHOUSE, ORG. FOR ECON. COOPERATION & DEV., PENSIONS AND THE CRISIS 1–2 (2009), <http://www.oecd.org/dataoecd/10/26/43060101.pdf>.

114. Pension Benefit Guaranty Corporation, <http://www.pbgc.gov> (last visited Oct. 24, 2009).

115. Pension Benefit Guar. Corp., Mission Statement, <http://www.pbgc.gov/about/about.html#1> (last visited Oct. 24, 2009).

116. Press Release, Pension Benefit Guar. Corp., PBGC Announces Maximum Insurance Benefit for 2009 (Nov. 3, 2008), <http://www.pbgc.gov/media/news-archive/news-releases/2008/pr09-03.html>.

117. Ann Hynek, *Is the PBGC Next in Line to Ask for a Bailout?*, FOX BUSINESS, Jan. 15, 2009, <http://www.foxbusiness.com/story/markets/industries/government/pbgc-line-ask-bailout>.

118. Press Release, Pension Benefit Guar. Corp., PBGC Reports First Financial Surplus (Mar. 31, 1997), <http://www.pbgc.gov/media/news-archive/news-releases/1997/pr97-22r.html>.

119. Hynek, *supra* note 117.

120. Michael Kranish, *Pension Insurer Shifted to Stocks*, BOSTON GLOBE, Mar. 30, 2009, News, at 1.

121. Bradley D. Belt, Executive Dir., Pension Benefit Guar. Corp., Remarks to the United States Chamber of Commerce (Oct. 8, 2004) (transcript available at <http://pbgc.gov/media/news-archive/speeches/sp1155.html>).

122. See Mitchell & Smetters, *supra* note 93, at 9–10.

123. Gordon T. Butler, *American Paternalism and the One Fund Solution*, 9 WYO. L. REV. 485, 509 (2009).

Some hope that defined contribution plans might offer a better alternative, and indeed they do for the average U.S. employee who expects to have ten different jobs over a lifetime.¹²⁴ After all, defined contribution plans permit employees to decide whether and how much to participate, where to hold their assets, and when to access the money.¹²⁵ But few people are well-versed in finance, and the market shock has made many realize that they simply do not understand risk.¹²⁶ One response to the current turmoil is to suggest that 401(k) plans could include a guarantee protecting the participant from losing all his money in a downturn.¹²⁷ Indeed, this is already a feature of defined-contribution-type plans in some other countries.¹²⁸ In Japan, for instance, participants must be offered a principal-guaranteed fund which pays back at least one's contributions.¹²⁹ Others have asked for richer guarantees, for example, paying at least the return on bonds.¹³⁰ The danger of this approach is that it quickly can get very expensive.¹³¹ A principal guarantee costs virtually nothing over a forty-year holding period, but a bond promise is expensive, costing an estimated 16% of annual contributions.¹³²

III. Country Risk Considerations

Thus far we have discussed individual and institutional factors influencing retirement; let me now turn to country risk as it impacts retiree well-being. One of the enormous unknowns facing the older as well as the younger population is political risk, meaning what will happen to future taxes, benefits, inflation, and other factors under politicians' control.¹³³ Clearly, the risk could be mitigated with steady fis-

124. See Friedberg & Owyang, *supra* note 100, at 25–26.

125. Clark et al., *supra* note 10, at 186–87.

126. Lusardi & Mitchell, *Financial Literacy and Retirement Preparedness*, *supra* note 32, at 36.

127. Mitchell & Smetters, *supra* note 93, at 10.

128. *Id.* at 10–11.

129. *Id.* at 10.

130. See John A. Turner & David M. Rajnes, *Retirement Guarantees in Voluntary Defined Contribution Plans*, in *THE PENSION CHALLENGE: RISK TRANSFERS AND RETIREMENT INCOME SECURITY*, *supra* note 79, at 251, 257–58 (Olivia S. Mitchell & Kent Smetters eds., 2003).

131. Marie-Eve Lachance & Olivia S. Mitchell, *Guaranteeing Individual Accounts*, *AM. ECON. REV.*, May 2003, at 257, 258–59.

132. *Id.*

133. See, e.g., Jeffrey R. Brown et al., *Taxing Retirement Income: Nonqualified Annuities and Distributions from Qualified Accounts*, 52 *NAT'L TAX J.* 563, 575, 578, 584 (1999) (discussing effects of various taxation schemes on payouts).

cal and monetary policy, but I believe that we are unlikely to have lower tax rates during my lifetime.¹³⁴ Accordingly, our best efforts to project our own retirement incomes must be taken down a notch in recognition of the government's need for new revenue.¹³⁵

Was there anything else we could have done (or could do in the future) to protect ourselves from such a massive economic shock? In the past, many have advocated international trade and investment, on the argument that we could take advantage of global diversification: when our economy was cooling, someone else's would be heating up.¹³⁶ But the current crisis has made us realize that the supposed advantage of diversification is far less than previously thought.¹³⁷

Another approach, which we turned to in the past when our nation last faced deep economic problems, is Social Security. This system was established on the notion that the older generation had been wiped out financially through no fault of its own, and so it could be supported by taxes on younger workers.¹³⁸ In turn, the young at the time would grow older and levy taxes on the next generation of young workers.¹³⁹ This "generational" approach to risk sharing then resulted in passing some of the shock of the Great Depression on to future generations.¹⁴⁰ The question is whether we can, or should, try to do this again. My answer is probably not, at least not as it was done in the 1940s.

The problem is that our Social Security system is running out of money.¹⁴¹ The 2008 Trustees report stated that the Social Security system took in \$785 billion in revenue and paid benefits worth about

134. See Salvador Valdés, *Market Innovations to Better Allocate Generational Risk*, in *RESTRUCTURING RETIREMENT RISKS* 226, 277 (David Blitzstein et al. eds., 2006).

135. See Cogan & Mitchell, *supra* note 105, at 149.

136. See Axel Börsch-Supan et al., *Ageing and International Capital Flows*, in *AGEING, FINANCIAL MARKETS AND MONETARY POLICY*, *supra* note 57, at 55, 58.

137. SATYA DEV PRADHUMAN, *SMALL-CAP DYNAMICS: INSIGHTS, ANALYSIS, AND MODELS* 119–20 (2000).

138. President Franklin D. Roosevelt, Message to Congress on Social Security (Jan. 17, 1935) (transcript available at <http://www.ssa.gov/history/fdrstmts.html#message2>).

139. *Id.*

140. John Geanakoplos, Olivia S. Mitchell & Stephen P. Zeldes, *Social Security Money's Worth*, in *PROSPECTS FOR SOCIAL SECURITY REFORM* 79, 84 (Olivia S. Mitchell et al. eds., 1999).

141. Andrew B. Abel, *The Social Security Trust Fund, the Riskless Interest Rate, and Capital Accumulation*, in *RISK ASPECTS OF INVESTMENT-BASED SOCIAL SECURITY REFORM* 153, 153 (John Y. Campbell & Martin Feldstein eds., 2001).

\$585 billion to 50 million recipients.¹⁴² Inasmuch as the system currently collects more taxes than it pays in benefits, it runs a surplus which by law is turned over to the U.S. Treasury, which then issues Trust Fund Bonds, or IOUs, to the Social Security system.¹⁴³ Many do not know that the Treasury then spends the money but is obligated to pay it back, with interest, when the Social Security Administration needs it.¹⁴⁴ Within just eight years, however, payroll taxes will permanently fall short of what is needed to pay retiree benefits.¹⁴⁵ At that point, the Treasury must redeem the IOUs, but because the funds were spent, Congress will either have to raise taxes, cut spending on military, education, or health, or authorize new national debt to cover the bills.¹⁴⁶ The system's shortfalls persist into the indefinite future, generating an underfunding problem worth about \$13 trillion in present value.¹⁴⁷ If nothing is done, by the time the IOUs run out, benefit promises must be cut by 25–30%, or payroll taxes would have to rise by 50–80%.¹⁴⁸

Retirement risk management at the national level therefore demands that Social Security be restored to solvency. Many reforms might be fashioned, but the bipartisan Commission to Strengthen Social Security offered a reasonable and sensible approach.¹⁴⁹ The key element in the plan was to retain the traditional Social Security benefit formula with one key change—moving to price indexing rather than wage indexing.¹⁵⁰ The plan ensured that benefits would be at least as high as today's and the payments would be sustainable; thus this approach would make the system more reliable.¹⁵¹ The Commission also proposed enhancing the safety net for the poorest, including low-wage workers and poor widows, which made the approach more equitable.¹⁵² Last, at President George W. Bush's request, the Commis-

142. BD. OF TRS., FED. OLD-AGE & SURVIVORS INS. & FED. DISABILITY INS. TRUST FUNDS, 2008 ANNUAL REPORT, H.R. DOC. NO. 110-104, at 2 (2d Sess. 2008), available at <http://www.ssa.gov/OACT/TR/TR08/tr08.pdf> [hereinafter BD. OF TRS. 2008 ANNUAL REPORT].

143. See Cogan & Mitchell, *supra* note 105, at 152.

144. Olivia S. Mitchell & Thomas R. Saving, *About That Trust Fund*, WASH. POST, July 31, 2001, at A23.

145. See Cogan & Mitchell, *supra* note 105, at 149.

146. *Id.* at 153.

147. BD. OF TRS. 2008 ANNUAL REPORT, *supra* note 142, at 13.

148. Cogan & Mitchell, *supra* note 105, at 159.

149. *Id.* at 150.

150. *Id.* at 157–59.

151. See *id.* at 159–60.

152. *Id.*

sion devised a Personal Retirement Account into which workers could voluntarily contribute a portion of their payroll tax up to \$1000 per year (indexed).¹⁵³ Those funds could be invested in a limited and carefully selected set of index funds.¹⁵⁴ Those who opted for this personal account would have their traditional benefit offset, but if they anticipated earning more than 2% on the accounts, they would expect to be better off.¹⁵⁵

As is necessary to restore solvency, the proposal had the virtue of bringing the tax and benefit lines back together.¹⁵⁶ Of course, other approaches are feasible, but the point remains clear. As citizens and voters, we must not let Social Security flounder along in such a sorry state. Every day we wait makes it more difficult to fix and threatens our own retirement security substantially. As my mother used to say, "Time is money," which is also true here.

One reason that this is so critical is that there is another looming problem, namely medical care costs for the elderly, which are estimated at several times the cost of Social Security.¹⁵⁷ And Medicare will be a much harder problem to solve as fixing Social Security is "just about money," whereas fixing Medicare will require revamping the way the government provides, or rations, health care benefits.¹⁵⁸

IV. Global Risks

Before concluding my discussion of the issues in retirement risk management, let me spend a moment on the rest of the world. In the last decade, and starting well before the current crisis, a debate had begun about the possibility that Baby Boomers would retire and sell

153. *Id.* at 160–61.

154. *Id.* at 162.

155. *Id.* at 161.

156. PRESIDENT'S COMM'N TO STRENGTHEN SOC. SEC., STRENGTHENING SOCIAL SECURITY AND CREATING PERSONAL WEALTH FOR ALL AMERICANS 15 (2001).

157. See BDS. OF TRS., FED. HOSP. INS. & FED. SUPP. MED. INS. TRUST FUNDS, 110TH CONG., 2008 ANNUAL REPORT 4 (Comm. Print 2008) (estimating total Medicare expenditures to reach 10.8% of GDP in 2082), available at <http://www.cms.hhs.gov/ReportsTrustFunds/downloads/tr2008.pdf>; see also BD. OF TRS. 2008 ANNUAL REPORT, *supra* note 142, at 3 (estimating total Social Security expenditures to reach 5.8% of GDP in 2082).

158. See *One on One with Olivia Mitchell*, PREA Q. (Pension Research Council, Philadelphia, Pa.), Summer 2005, at 43, 43–45, available at <http://www.pensionresearchcouncil.org/pdf/news/23.pdf>.

their assets all at once, precipitating a global asset meltdown.¹⁵⁹ Speaking as a Boomer, I must report that the meltdown occurred without *my* having lifted a finger. But more soberly, the present crisis is making us all deeply aware of the exposure we face from world-wide events including bird flu, subprime mortgage breakdowns, and oil price shocks.¹⁶⁰ The end result is that, as noted earlier, there is less value added from diversifying one's portfolio around the world now than in the past, and simultaneously, more exposure to contagion from anywhere on the globe.¹⁶¹

One inevitable result of this global integration is that governments are finding that they require new tools to supervise and regulate financial risks on an international scale.¹⁶² This also will require the creation of new institutions with the ability to enforce transparency, reporting, and capital requirements for banks, insurance companies, hedge funds, and all the other players in the global marketplace.¹⁶³

What is not getting enough attention, in my view, is how global aging will shape the need for more retirement risk management in the future.¹⁶⁴ Of course, population aging has been with us for a while, spurred by the long-term trend of low fertility and declining mortality rates.¹⁶⁵ These changes are having a dramatic impact on the way we look, work, retire, and feel.¹⁶⁶

To make this concrete, let us only note the changes in the fraction of people age sixty-five and older in a range of different nations. At the turn of the last century, only 4% of the U.S. population was age

159. Axel Börsch-Supan, *Demographic Change, Saving and Asset Prices: Theory and Evidence*, in DEMOGRAPHY AND FINANCIAL MARKETS 132, 134 (Christopher Kent et al. eds., 2006).

160. See Hewitt Assocs., *Avian Flu: Impact on Employee Benefits and Employment Conditions*, <http://www.hewittassociates.com/Intl/NA/en-US/KnowledgeCenter/ArticlesReports/ArticleDetail.aspx?cid=2917&tid=45> (last visited Oct. 24, 2009); see also Asia Econ. Inst., *Global Oil Crisis: What It Means to the Asian Market* (June 23, 2008), http://www.asiaecon.org/special_articles/read_sp/11551.

161. See Burhan F. Yavas, *Benefits of International Portfolio Diversification*, GRAZIADIO BUS. REP., 2007, <http://gbr.pepperdine.edu/072/diversification.html>.

162. Olivia S. Mitchell et al., *Financial Innovation for an Ageing World*, in DEMOGRAPHY AND FINANCIAL MARKETS, *supra* note 159, at 299, 331–32.

163. See Kenneth Rogoff, *International Institutions for Reducing Global Financial Instability*, J. ECON. PERSP., Autumn 1999, at 21, 31.

164. ROBERT STOWE ENGLAND, *GLOBAL AGING AND FINANCIAL MARKETS: HARD LANDINGS AHEAD?* 2–4 (2002).

165. Leonid A. Gavrilov & Patrick Heuveline, *Aging of Population*, in THE ENCYCLOPEDIA OF POPULATION 32 (Paul Demeny & Geoffrey McNicoll eds., 2003).

166. See *id.*

sixty-five and older; currently the proportion stands at about 14%, and by 2050, it will exceed 20%.¹⁶⁷ But other countries are aging even faster.¹⁶⁸ In Japan, for instance, over 17% of the population is age sixty-five and older now, and the ratio will be around one-third by 2050.¹⁶⁹ The aging phenomenon is also deepening.¹⁷⁰ For instance, the numbers of people older than 85 and 100 years old are growing faster yet.¹⁷¹ And within the aging population, the composition is changing.¹⁷² For example, there are 143 women per 100 men in the population at large, but among those eighty-five and older, the ratio is 245 women per 100 men.¹⁷³ As the world ages, it grows more female, so global aging is not only an elder issue, but a feminist issue as well.

V. Conclusions

One of the most important consequences of our economic and demographic times is that, as individuals and as a society, we must find new ways to finance and plan for living a century or more. It is not feasible to continue to rely on taxing the earnings of a shrinking younger population to sustain so many nonworkers who hope to spend forty or fifty years in retirement. So in my view, a key way to manage retirement risk is to get people to save more and work longer.

It is clear that retirement security in the twenty-first century has become disintermediated—that is, the employers, financial institutions, and governments will no longer take on as much of the burden as they did in the past.¹⁷⁴ Instead, workers are asked to decide if and when they want to participate in their retirement saving plans, what they will invest in, and how they will manage their own money in retirement.¹⁷⁵ This is a tall order for the less-than-financially literate, the procrastinators, the busy, and the simply overwhelmed.

This leaves a huge task for those of us who strive to be educators and educated members of the public. We must teach ourselves and others how to “do what we know we should,” namely save more, invest wisely, work longer, and avoid outliving our assets. Financial in-

167. *Id.*

168. *Id.* at 35.

169. *Id.* at 34–35.

170. *Id.* at 34.

171. *Id.*

172. *Id.* at 34–35.

173. *Id.*

174. See Cogan & Mitchell, *supra* note 105, at 149–50.

175. See Mitchell & Smetters, *supra* note 93, at 7–8.

stitutions also must help more, by developing more attractive, sensible, and low-cost ways to meet retirement objectives. And last but not least, our politicians must be called on to take up the challenge to make retirement security an objective and to design a more coherent structure for workers and retirees of the future.

The bottom line, in my view, is to design new ways to convert good intentions into good behavior and to get people to save for old age more effectively. To this end we need a better public/private partnership that can create, regulate, and educate the public about new financial products and markets for an aging world. But most important is a favorite quote of mine from Theodore Roosevelt, who said, "Old age is like everything else. To make a success of it, you've got to start young."¹⁷⁶

176. LOUIS J. COZOLINO, *THE HEALTHY AGING BRAIN: SUSTAINING ATTACHMENT, ATTAINING WISDOM* 80 (2008).