



University of Pennsylvania
ScholarlyCommons

Wharton Pension Research Council Working
Papers

Wharton Pension Research Council

7-14-2020

Introduction: New Models for Managing Longevity Risk: Public/ Private Partnerships

Olivia S. Mitchell

The Wharton School, Univ. of PA, mitchelo@wharton.upenn.edu

Follow this and additional works at: https://repository.upenn.edu/prc_papers



Part of the [Economics Commons](#)

Mitchell, Olivia S., "Introduction: New Models for Managing Longevity Risk: Public/Private Partnerships" (2020). *Wharton Pension Research Council Working Papers*. 682.
https://repository.upenn.edu/prc_papers/682

This paper is posted at ScholarlyCommons. https://repository.upenn.edu/prc_papers/682
For more information, please contact repository@pobox.upenn.edu.

Introduction: New Models for Managing Longevity Risk: Public/Private Partnerships

Abstract

Public/private partnerships (PPPs) usually involve a governmental organization that collaborates with private sector firms to provide needed goods and services, to accomplish goals that neither party could likely achieve on its own. Typically PPPs involve government financing, while the private sector partner provides expertise, management responsibility, and accountability. This overview identifies perspectives from experts in the field to explore how governments and the private sector can be tapped to provide and enhance retirement security along several dimensions. In addition to empirical evidence, our contributors detail case studies, discuss survey results, and examine a variety of different financial and insurance products to better meet the needs of the aging population.

Keywords

Longevity risk, public-private partnerships, retirement, pension, security

Disciplines

Economics

**Introduction: New Models for Managing Longevity Risk:
Public/Private Partnerships**

Olivia S. Mitchell

July 14, 2020

PRC WP2020-13

Pension Research Council Working Paper

Pension Research Council

The Wharton School, University of Pennsylvania

3620 Locust Walk, 3302 SH-DH

Philadelphia, PA 19104-6302

Tel.: 215.573.3414 Fax: 215.573.3418

Email: prc@wharton.upenn.edu

<http://www.pensionresearchcouncil.org>

**Introduction: New Models for Managing Longevity Risk:
Public/Private Partnerships**

Olivia S. Mitchell

Abstract

Public/private partnerships (PPPs) usually involve a governmental organization that collaborates with private sector firms to provide needed goods and services, to accomplish goals that neither party could likely achieve on its own. Typically PPPs involve government financing, while the private sector partner provides expertise, management responsibility, and accountability. This overview identifies perspectives from experts in the field to explore how governments and the private sector can be tapped to provide and enhance retirement security along several dimensions. In addition to empirical evidence, our contributors detail case studies, discuss survey results, and examine a variety of different financial and insurance products to better meet the needs of the aging population.

Keywords: Longevity risk, public-private partnerships, retirement, pension, security

Olivia S. Mitchell

Executive Director, Pension Research Council

The Wharton School

University of Pennsylvania

3620 Locust Walk

Philadelphia, PA 19104, USA

mitchelo@wharton.upenn.edu

New Models for Managing Longevity Risk: Public/Private Partnerships Introduction

There are now half a million centenarians in the world, and their number is projected to grow eightfold by 2050 (Stepler 2016). Inevitably, longer human lifespans, especially at older ages, are reshaping how we must think about work, planning, saving, investing, insuring, and financing our livelihoods in retirement. This volume offers a perspective on how public/private partnerships (PPPs) can play an important role in enhancing retirement security.

Such partnerships generally involve a governmental organization collaborating with private sector firms to provide needed goods and services, in ways that neither party could likely achieve on its own. Typically PPPs involve government financing, while the private sector partner provides expertise, management responsibility, and accountability.¹ This book captures perspectives from experts in the field to explore how governments and the private sector can be tapped to provide and enhance retirement security along several dimensions. In addition to empirical evidence, our contributors detail case studies, discuss survey results, and examine a variety of different financial and insurance products to better meet the needs of the aging population.

Several key themes emerge from the research reported in this volume, as follows:

1. Longevity may be a difficult concept for many people to understand. Empirically, however, peoples' expectations about their chances of survival generally agree with data on the factors predictive of longer lifetimes. Nevertheless, people confront much uncertainty about how likely they are to become disabled in old age, which can threaten financial security if assets are required to pay for long term care.

2. Working longer can enhance retirement security, partly because it protects older employees against social isolation and the negative consequences of isolation, including mental health. It also reduces the drawdown of peoples' savings, and it usually boosts the value of public and private pensions drawn at the later claiming age.
3. Many older people would prefer to age in place rather than entering long term care facilities. This can be facilitated through PPPs providing coordinated care, community-based services, and adequate housing for the older population. Nevertheless, the supply of long-term care has proven to be inadequate in many countries.
4. Technological innovation as well as public/private cooperation for insurance can help. Nevertheless, the rising rate of dementia among older persons requires much greater policy attention from both the private and public sectors.
5. Innovative financial products such as pooled annuities and tontines can help defined contribution pensions provide assured lifetime income, thus protecting against longevity risk. Additionally, PPPs can help pension funds transfer longevity risk to the capital markets, thus enlarging the risk pools.
6. Inasmuch as many older persons have net equity in their homes, PPPs can help the elderly find new ways to tap into this source of wealth. Reverse mortgages are one useful tool, and another is property tax deferral until such time as the homeowner sells the house. Both arrangements can be provided under the auspices of public/private partnerships.

Next we offer a brief overview of the chapters to come, representing the perspectives of practitioners, academics, financial market specialists, medical experts, and gerontologists, among others, on how PPPs can help the world better manage longevity risk.

Understanding Longevity Risk

Here we define longevity risk as the chance that someone will outlive his or her retirement resources, potentially to fall into old-age poverty. One reason people may be vulnerable to such risk is that they might not understand the chances that they will live to older ages. In such an eventuality, workers might underestimate how much they need to save for retirement, and retirees could overestimate how much they can spend from their savings. In such circumstances, peoples' expectations about longevity as well as disability-free longevity could lead to suboptimal behavior.

Fortunately, many longitudinal datasets have elicited peoples' subjective survival expectations including the widely-used Health and Retirement Study (HRS), a nationally representative panel of Americans over the age of 50 followed until their deaths. In her chapter, Kathleen McGarry (2021) uses the HRS survey waves from 1992 to 2016 to explore whether older people accurately perceive their survival chances, and whether these change over time in ways that are consistent with changes in their known risk factors. Her earlier work had showed that men tended to over-estimate their chances of survival to older ages, whereas women were more likely to under-estimate them. This new research finds that the subjective expectations correlate closely with actual mortality experience, as well as known risk factors. Moreover, peoples' expectations are updated over time when health status changes. Accordingly, it appears that, on average, people are aware of their longevity risk when planning for retirement.

Despite this positive news, Douglas A. Wolf (2021) notes that retirees still face considerable uncertainty about how much of their remaining life years could be spent disabled. This is important since the disabled may require various forms of what is likely to be very costly long-term care. His chapter focuses on what demographers call peoples' 'active life expectancy' (ALE), during which no disability is present, versus the period after which people transition to being disabled. He points out that this transition usually signals a reduction in remaining total life

years, and assets may need to be drawn down more rapidly. Wolf also uses the HRS to document that the prevalence of disability rises from about six percent at age 65, to nearly 20 percent at age 84. He also reports that a disability-free 65-year-old can expect to live nearly 15 more years, on average, while someone disabled at that age has a much lower expected remaining lifetime of just nine years. Nevertheless, being disabled often entails large out-of-pocket expenses (e.g. for nursing home care) and accelerates asset depletion. Indeed, many people spend down their assets after they enter a nursing home, after which the government Medicaid program supports subsequent nursing home costs. In this sense, the system functions as a sort of public-private partnership, where after private assets are exhausted, public funds help support end-of-life care.

Another way in which people can make better provision against old-age insecurity is by working longer. This is because delayed retirement has the beneficial effects of boosting saving, reducing asset depletion, raising retirement benefits, and reducing social isolation which can cause depression and health problems. In her chapter, Maria Fitzpatrick (2021) shows that early retirement is bad for older Americans' health, particular for men: male mortality increases with early retirement and in particular, for those claiming Social Security at age 62. She also reviews the literature from other countries as well, where the results are somewhat less conclusive.

In their chapter, Tim Driver and Amanda Henshon (2021) explore the links between working longer, social engagement, and longevity. The research suggests that older workers' employment quadruples their social interaction, thus protecting against the isolation that can be a risk factor for poor physical and mental health. Moreover, the authors point out that older workers are also less costly than generally perceived, since their wages are not higher than those of younger workers, and their health insurance premiums can be lower, particularly when they are Medicare-eligible. And lastly, they discuss the common misconception that hiring more older workers has a

negative impact on younger workers. This ‘lump of labor’ fallacy has been widely disproved in the developed world. Accordingly, the authors call for a public/private partnership to encourage continued employment of older individuals, to the extent that this group is interested.

Public/Private Partnerships to Help Fill the Gaps

In her chapter, Nancy A. Hodgson (2021) notes that most older adults would prefer to remain in their homes as they age. A century ago, home care by family members was the norm for the very elderly, but few relatives can provide such care today. This is particularly a concern for the ‘oldest old,’ or persons age 85+, who have increasingly tended to live alone until a health or safety issue sends them to institutionalized care. Moreover, poor housing conditions and limited financial resources are barriers to aging in place for many older adults. To encourage aging in place, Hodgson argues that PPPs can help provide safer built environments, more accessible housing, and better-coordinated care and services. She also provides several real-world examples of models that encourage and support keeping older adults in their homes, both in the U.S. and in Europe. Finally, she identifies several ‘age-tech’ innovations making it easier for medical professionals and family members to monitor older persons’ safety, provide meals and transportation, and manage their medication.

Dozene Guishard and William Dionne (2021) also discuss PPPs that have helped extend older peoples’ ability to remain in the community rather than enter care facilities. The Carter Burden Network is a nonprofit organization partly funded by the Department for the Aging in New York City, and its mission is to reduce food insecurity and malnutrition, lower hospitalization, and enhance social isolation in the target population. This work extends a long history of collaboration between the government and social programs and services embedded in the 1965 Older American

Act (OAA). Today, the authors argue that without public/private partnerships in the aging area, elders' longevity would fall and the risk of disrupting aging services delivered by the community-based nonprofit sector would rise.

By 2030, one in five US residents will be over age 65, according to Nora Super, Arielle Burstein, Jason Davis, and Caroline Servat (2021). Their chapter also notes that 70 percent of them will require long-term care at some point in their lifetimes. Nevertheless, few Americans have saved enough to pay for the staggering costs of long-term care, and past efforts to implement reform at the national level have failed. Moreover, the number of private insurers offering long-term care insurance (LTCI) has plummeted from over 100 in 2002, to about a dozen today. For this reason, the authors conducted interviews with over 50 experts to glean useful and practical ideas for incremental solutions to the long-term care crisis. Among the solutions generated were the creation of tax incentives to ensure that LTCI becomes an integral part of the retirement financial planning conversation. The authors also note that increases in health savings account (HSA) contribution limits and tax-advantaged withdrawal limits would better accommodate LTCI premiums, as would a new savings vehicle specifically created to encourage LTC contributions. Another path might be to enhance program experimentation at the state level, exploring back-end 'catastrophic' coverage options in addition to variations on the front-end approach. There is also room for technological solutions, which could take off with seed funding.

The chapter by Adelina Comas-Herrera (2021) reviews an extensive body of work on policy responses to the growing costs of dementia. She notes that there are many different stakeholders in the dementia arena, in addition to the elderly; they include, among others, medical and nursing home establishments and their employees, the financial and insurance sectors, family members and caregivers, economists concerned with the cost of dementia, and those concerned with

retirement insecurity. As a result, policymakers in most developed nations are beginning to develop models to estimate the fiscal cost of dementia in their aging economies. She concludes that dementia care costs will be high, yet she worries that policymakers have long favored ‘hopeful’ policies in relation to dementia, such as spending for Alzheimer’s ‘cures,’ rather than tackling health and long-term care capacity shortfalls.

Implications for the Financial Sector and Policymakers

In their chapter, Richard Fullmer and Jonathan Forman (2021) describe two new longevity assurance products and explain how these could be integrated into state-sponsored defined contribution pensions. Specifically, these would both provide assured lifetime income to retirees, though benefit payments would not be insured or guaranteed. These products can pay retirees more than mutual funds since investors who survive each year receive not only investment returns but also survival credits. The authors describe both pooled annuities and tontines, both of which they argue can help participants in state-sponsored defined contribution pensions who want lifetime income. Moreover, these vehicles could also be used in emerging economies which lack a robust life insurance sector.

Delving deeper into the market for longevity risk, John Kiff (2021) notes that these are driven by defined benefit (DB) pension plans seeking to purchase reinsurance, and in turn, the reinsurers seeking to transfer annuity-related risks to other reinsurers. One explanation for the trend is that strict new pension rules have mandated disclosure and additional protections. Cumulative pension risk transfer is only about \$550B in the three countries with the largest defined benefit pension sectors, versus about \$16Tr of DB-related obligations. The reinsurer capacity for longevity risk transfer could be enlarged if the longevity risk they assume could be distributed to

capital markets. One step in that direction would be to develop an agreement between market participants about which mortality models they can use to create and price longevity-linked deals. Additionally, governments could provide the much-needed granular longevity and demographic data required to estimate the models.

A different sort of PPP is envisioned in the chapter by Alicia Munnell, Wenliang Hou, and Abigail Walters (2021), who evaluate ways to help older households more readily tap into their home equity. Specifically, they propose that homeowners age 65+ be permitted to defer paying their state property taxes until they sell their homes, at which time the state would recoup both the principal and interest on the loan. Although property tax deferral programs would be self-financing in the long term, the authors point out that the program would require start-up money from governments and/or the private sector to at the outset since the loans are not repaid until the homeowner passes away.

An alternative way to tap one's home equity is to take out a reverse mortgage, explain Chris Mayer and Stephanie Moulton (2021) in their chapter. After examining the size and growth of equity release programs in the UK and North America, the authors offer several explanations for why few Americans tend to borrow on their homes using these instruments (far higher percentages of the elderly do use reverse mortgages in the UK and Canada). They conclude that institutional barriers in the U.S. have discouraged brand name companies from entering the market, thus limiting the distribution of reverse mortgages here. According to the authors, additional PPPs could possibly help alter these barriers.

Conclusions

Despite the global tragedy of illness and death wreaked by the COVID-19 virus, the world must still prepare for the long-term extension of the human lifetime. The average baby born today has a one in three chance of living to age 100, so we must prepare for 100-year – or longer – lives. Yet it appears that we cannot finance these 100-year lives simply from the public purse or simply from the private purse. Rather, the two efforts need to come together. It is therefore imperative for plan sponsors, insurers, financial analysts, and policymakers to plan ahead and design new public/private partnerships to manage longevity risk in our aging economy.

This volume shows that peoples' expectations about their chances of survival generally agree with data on the factors predictive of longer lifetimes, yet people also confront much uncertainty about how likely they are to become disabled in old age. One way to enhance retirement security is to work longer. Another way is to help the elderly age in place, facilitated by PPPs providing coordinated care, community-based services, and adequate housing. Technological innovation will also be useful, as are pooled annuities and tontines protecting against longevity risk. Additionally, PPPs can help pension funds transfer longevity risk to the capital markets, thus enlarging risk pools, and reverse mortgages can assist older homeowners tap their home equity. Nevertheless, the rising rate of dementia at older ages is sure to require much greater policy attention and efforts expended by both the private and public sectors.

Acknowledgements: The author acknowledges with gratitude the excellent input on this chapter from Surya Kolluri.

References

- Comas-Herrera, A. (2021). 'Building on Hope or Tackling Fear? Policy Responses to the Growing Costs of Alzheimer's Disease and Other Dementias.' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.
- Driver, T. and A. Henshon (2021). 'Working Longer Solves (Almost) Everything: The Correlation Between Employment, Social Engagement, and Longevity.' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.
- Fitzpatrick, M. (2021). 'Does Working Longer Enhance Old Age?' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.
- Fullmer, R.K. and J.B. Forman (2021). 'State-sponsored Pensions for Private Sector Workers: The Case for Pooled Annuities and Tontines.' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.
- Guishard, D. and W.J. Dionne (2021). 'Public/Private Partnerships Extend Community-based Organization's Longevity.' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.
- Hodgson, N. (2021). 'Aging-in-Place: The Role of Public/Private Partnerships.' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.

- Kiff, J. (2021). 'New Financial Instruments for Managing Longevity Risk.' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.
- Mayer, C. and S. Moulton (2021). 'The Market for Reverse Mortgages Among Older Americans.' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.
- McGarry, K. (2021). 'Perceptions of Mortality: Individual Assessments of Longevity Risk.' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.
- Munnell, A.H., W. Hou, and A.N. Walters. (2021). 'Property Tax Deferral: Can a Public/Private Partnership Help Provide Lifetime Income?' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.
- Stepler, R. (2016). 'World's centenarian population projected to grow eightfold by 2050.' FactTank.com. <https://www.pewresearch.org/fact-tank/2016/04/21/worlds-centenarian-population-projected-to-grow-eightfold-by-2050/>.
- Super, N., A. Burstein, J. Davis, and C. Servat (2021). 'Innovative Strategies to Finance and Deliver Long-term Care.' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.
- Wolf, D.A. (2021). 'Disability-Free Life Trends at Older Ages: Implications for Longevity Risk Management.' In O.S. Mitchell and S. Kolluri, eds., *New Models for Managing Longevity Risk: Public/Private Partnerships*. Oxford, UK: Oxford University Press, pp. xxx-xxx.

World Bank Group. 2016. 'About Public-Private Partnerships.' Public-Private Partnership Legal Resource Center. <https://ppp.worldbank.org/public-private-partnership/about-public-private-partnerships>.

Endnotes

¹ For a range of international examples, see World Bank Group (2016).