

Remaking Retirement

Debt in an Aging Economy

EDITED BY

Olivia S. Mitchell and
Annamaria Lusardi

OXFORD
UNIVERSITY PRESS

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 2020

The moral rights of the authors have been asserted

First Edition published in 2020

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

Published in the United States of America by Oxford University Press
198 Madison Avenue, New York, NY 10016, United States of America

British Library Cataloguing in Publication Data

Data available

Library of Congress Control Number: 2020945983

ISBN 978-0-19-886752-4

DOI: 10.1093/oso/9780198867524.003.0001

Printed and bound in Great Britain by
Clays Ltd, Elcograf S.p.A.

Links to third party websites are provided by Oxford in good faith and
for information only. Oxford disclaims any responsibility for the materials
contained in any third party website referenced in this work.

Contents

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| <i>List of Figures</i> | ix |
| <i>List of Tables</i> | xiii |
| <i>Notes on Contributors</i> | xvii |
| 1. Introduction: Debt in an Aging Economy <i>Olivia S. Mitchell and Annamaria Lusardi</i> | 1 |
| Part I. Debt Developments in an Aging Economy | |
| 2. Debt Close to Retirement and its Implications for Retirement Well-being <i>Annamaria Lusardi, Olivia S. Mitchell, and Noemi Oggero</i> | 15 |
| 3. The Graying of American Debt <i>Meta Brown, Donghoon Lee, Joelle Scally, and Wilbert van der Klaauw</i> | 35 |
| 4. The Risk of Financial Hardship in Retirement: A Cohort Analysis <i>Jason Brown, Karen Dynan, and Theodore Figinski</i> | 60 |
| Part II. Retirement, Debt, and Financial Fragility at Older Ages | |
| 5. Financial Distress among the Elderly: Bankruptcy Reform and the Financial Crisis <i>Wenli Li and Michelle J. White</i> | 89 |
| 6. Mortgage Foreclosures and Older Americans: A Decade after the Great Recession <i>Lori A. Trawinski</i> | 106 |
| 7. Paying It Back: Real-world Debt Service Trends and Implications for Retirement Planning <i>Anne Lester, Katherine S. Santiago, Je Oh, Livia Wu, and Ekaterina Chegaeva</i> | 116 |

viii Contents

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 8. Is Rising Household Debt Affecting Retirement Decisions? <i>Barbara A. Butrica and Nadia S. Karamcheva</i> | 132 |
| Part III. Policy Perspectives on Debt at Older Ages | |
| 9. How Much Should the Poor Save for Retirement? Data and Simulations on Retirement Income Adequacy among Low-earning Households <i>Andrew G. Biggs</i> | 167 |
| 10. Financial Well-being of State and Local Government Retirees in North Carolina <i>Robert L. Clark and Siyan Liu</i> | 184 |
| 11. Household Debt and Aging in Japan <i>Charles Yuji Horioka and Yoko Niimi</i> | 207 |
| 12. Understanding the Macro-financial Effects of Household Debt: A Global Perspective <i>Adrian Alter, Alan Feng, and Nico Valckx</i> | 226 |
| <i>The Pension Research Council</i> | 255 |
| <i>Index</i> | 259 |

Chapter 1

Introduction: Debt in an Aging Economy

Olivia S. Mitchell and Annamaria Lusardi

Due to increased longevity and reduced fertility rates, population aging is casting a pall over many public and private retirement systems now facing insolvency around the world. At the same time, there has been a long-term shift in company-provided pensions from defined benefit (DB) to defined contribution (DC) plans, such that both workers and retirees have had to take on more responsibility for managing their retirement savings. This volume focuses on another development in our aging economy, namely the fact that people nearing and entering retirement are holding ever-greater levels of debt than in the past. This is not a benign situation, as many pre-retirees and retirees are concerned over their indebtedness. Moreover, this growth in debt among the older population may render retirees vulnerable to financial shocks, medical care bills, and changes in interest rates.

The contributors to this volume document key aspects of the rise in debt across older cohorts, drill down into the types of debt and reasons for debt incurred by the older population, and review policies to remedy some of the financial problems facing older persons. In addition, we touch on insights from other countries. In the process, we explore which group is most affected by debt, and examine the factors producing this important increase in leverage at older ages. One conclusion that we draw is that the economic and market environment is influential when it comes to debt. Access to easy borrowing, low interest rates, and the rising cost of education has had an important impact on how much people borrow, and how much debt they carry into retirement. In this environment, the capacity to manage debt is ever more important as older workers lack the opportunity to recover for mistakes.

Similarities and Differences across Approaches

Before highlighting some of the key lessons from the chapters that follow, it is useful to discuss the ways in which the analyses differ, as chapters reported herein offer several alternative ways to measure financial vulnerability in the face of rising debt at older ages.

2 Remaking Retirement

Age Ranges

Readers of this volume will want to keep in mind the fact that most chapters focus on older Americans. In practice, of course, ‘older’ is a term of art. Many authors define it as age 65+, but some differentiate pre-retirees (age 56–61) from those in the retirement window (age 62+). The latter age split acknowledges the fact that in the United States, eligible individuals may elect to claim early social security benefits as young as age 62. Still other chapters compare debt patterns of the young versus the old, which they may define as age 34 and below (young), versus those age 75+ (older). Moreover, countries also differ in terms of how they distinguish pre-retirees and those in the retirement window: for instance, in Japan, age 60 has long been the official retirement age, so pre-retirees are described here as age 50–59, and those older than that, in the retirement window. Another way that researchers differ has to do with whether they compare younger versus older age groups at a moment in time, or whether they follow a cohort as it moves into its older years. The latter approach, which exploits longitudinal data, is especially informative as the ‘baseline’ information collected in an earlier year can be used to forecast later life financial hardships. Nevertheless, older cohorts lose members due to mortality at relatively high rates, so that one must be cognizant of the real possibility of ‘survival bias’ in such panels. This possibility is taken seriously into account in several chapters that follow.

Vulnerability Measures

In the US, the official poverty rate is one measure of financial vulnerability. This is determined by comparing households’ income before taxes to thresholds that vary by family composition and age of the household head (noncash benefits including medical, housing, and food stamps are excluded from this tally) (US Census nd). For many years, poverty rates of the older population have been below those of the younger population, with 9.2 percent of persons age 65+ falling below the line in 2017, versus 11.3 percent of adults age 18–64 (and 17.5% of children under age 18) counted as poor (Romig 2018). Yet these estimates, traditionally calculated using the Current Population Survey (CPS), have come under fire recently by researchers Bee and Mitchell (2017) who recomputed elderly poverty rates using an invaluable dataset that links the CPS and administrative records. They found that corrected poverty rates for the age 65+ population were about one-quarter lower, inasmuch as older persons appear to under-report retirement income from pensions and retirement account withdrawals. In other words, instead of 9.2 percent poverty among the elderly, which already put them in better economic circumstances than the younger

Introduction: Debt in an Aging Economy 3

population, the corrected poverty rate is closer to 6.9 percent, or almost 40 percent below rates for adults below age 65.

This volume also offers several alternative ways to capture financial fragility at older ages, looking for example beyond income measures and considering the financial situation of older people, offering different perspectives on the complex problem of measuring retirement security. J. Brown et al. (2020) use not only the poverty threshold, but they also use a different measure, such as 150 percent of the poverty line, to assess older households' ability to withstand financial shocks. Moreover, they look not just at income, but they convert household wealth values into (household size adjusted) annuity-equivalent values, so as to determine whether people have enough to avoid material hardship in later life. Other authors examine borrowing behavior directly, and many report debt to asset ratios as well, in an effort to track indebtedness at older ages. The work by Lester et al. (2020) uses detailed financial transaction records for five million households to track debt service payments over a year, and the authors are able to differentiate between mortgage payments, auto loans and credit card debt, and student loans. Lusardi et al. (2020) employs a specific definition of *financial fragility*, which is a summary indicator of how much assets and debt older families have and their confidence in the capacity to face unexpected expenses.

While poverty rates may be low for older households, there are some signs of financial hardship for older families. For example, J. Brown et al. (2020) assess material hardship by examining whether older people always had enough money to buy needed food, whether they took less medication than prescribed because of the cost, or whether they participated in the means-tested programs of Medicaid or food assistance. By these metrics, they conclude that about 5 percent of persons age 77–82 were suffering such hardship. Yet other ways to measure financial challenges facing older individuals include looking at indicators of severe problems, such as falling delinquent on debt or bankruptcies (M. Brown et al. 2020; Li and White 2020). In other words, the chapters that follow offer a rich set of views into how older people are faring and how debt is reshaping retirement for older individuals.

Datasets Used

Researchers rely on a wide range of datasets when they seek to measure and evaluate debt patterns for the older US population. This very much contributes to the richness of information and findings offered in this book. For instance, many chapters in this volume rely on national survey-based datasets such as the Health and Retirement Study (HRS), the Current Population Survey (CPS), the Survey of Consumer Finances (SCF), and the National

4 Remaking Retirement

Financial Capability Study (NFCS). Each of these offers somewhat different insights into aspects of household behavior, but what they all have in common is that they elicit respondent self-reports on their income, assets, debts, and a multitude of other socio-demographic factors that are of interest. Some of these surveys are conducted at different time periods, but they are purely cross-sectional, in that different people are surveyed each time the study is fielded (e.g., CPS and NFCS). Others, especially the HRS, follow the same people over an extended period of time. Such longitudinal or panel data are particularly useful when examining how respondents' financial positions change over time, and also to compare new respondents versus their same-age counterparts in previous time periods.

Those using each of these datasets are aware of their strengths, including the fact that people can be and are asked qualitative questions, including their perceived financial fragility. Nevertheless, respondent surveys also suffer from the fact that researchers must rely on consumers' self-reports, and their responses can be subject to reporting errors when people misremember their financial information. For this reason, other ways have been developed to track peoples' financial behaviors over time. One chapter in this volume relies on the New York Fed Consumer Credit Panel (CCP), based on Equifax credit report data (M. Brown et al. 2020). A second uses a new and richly detailed dataset on administrative information for millions of credit card and other bank transactions (Lester et al. 2020). The latter records, collected by J.P. Morgan Chase & Co., are derived from transaction files from (anonymized) records on 31 million households. The advantage of such administrative data is that data quality is quite high. It can also be high frequency, allowing researchers to track volumes of spending, debt behavior, and repayment patterns. Nevertheless, these administrative records often contain relatively little detail on household socio-economic characteristics, and they do not include responses to more qualitative questions provided by the respondent surveys. Thus, much can be learned by reading across the chapters of this book.

Types of Debt

While debt is on the rise, it is also important to consider which type of debt older people carry into retirement. Given that older individuals are close to retirement, they should be close to the peak of their wealth accumulation. Yet, many chapters in the volume document that older households carry debt that charges higher interest rates and fees and some have been delinquent on their debt and declared bankruptcy. Student loans, which are often associated with debt taken up by young people, are also present among the older population, as documented in detail by Lester et al.

Introduction: Debt in an Aging Economy 5

(2020). One of the suggestions that can be derived from this chapter is that it is important to have information on the types of debt that people carry, rather than lumping all of it into one or a few categories, as done in many surveys.

Other Countries

Finally, changes are happening not only in the US, but elsewhere as well. The experience of Japan with its high share of elderly people offers insights on how others are faring; it also provides a warning that debt is increasing not only among the old, but also the young (Horioka and Niimi 2020). In sum, many types of information are helpful in evaluating financial vulnerability in retirement, particularly since the issue is so multi-dimensional at older ages.

Debt Developments in an Aging Economy

The first section of this volume draws out key lessons from a close examination of debt trends for older households. The chapter by M. Brown et al. traces the rise in consumer debt from 2003 to 2017, examining how the patterns differed by household age. The authors conclude that younger people are now less likely to borrow for home purchases than in the past, whereas older borrowers have boosted debt holdings in several categories including auto, home, and education loans. In other words, there is a graying of debt in America. They also identify a substantial degree of heterogeneity in debt changes over time, and they conclude that the growth of debt at older ages to date has mainly occurred in the top two deciles of the wealth distribution. Nevertheless, the least wealthy elderly have also participated in a massive increase in borrowing for educational loans, as well as credit card debt.

In their previous work, Lusardi et al. (2018; forthcoming) use HRS data to document that the percentage of Americans nearing retirement with debt grew from 64 percent in 1992 to 71 percent in 2010. Additionally, the amount of debt held by people age 56–61 also rose sharply in real terms: median household debt for this group in 1992 was less than \$6,800, but by 2004 it had more than quadrupled. By 2010, it stood at \$32,700, nearly five times the 1992 level (all in 2015 dollars). In their chapter, Lusardi et al. use data from the NFCS to demonstrate not just the increase in debt, but also the type of debt older people use and the potential consequences associated with debt. For example, they document that many in the older population are borrowing using methods associated with high interest payments and fees. They also show there is a strong correlation between the types of debt

6 Remaking Retirement

instruments held, such that those using one source of high cost debt are also likely to use other expensive types of debt. Again, there are socio-economic differences across the population: those carrying high cost debt are disproportionately African American, low-income persons, and people with dependent children. Three explanations for observed patterns are offered including lack of financial literacy, lack of information, and behavioral biases.

Seeking to draw inferences about how well today's near-elderly will fare in the years to come, the analysis of J. Brown et al. (2020) begins by evaluating how the previous cohort of near-retirees were doing while age 57–62, and which of their attributes help predict their subsequent retirement 20 years later. Next, assuming that future cohorts will behave similarly to those in the past, the authors project future levels of insecurity for the next generation as a function of changes in demographic factors, assets, debt, income, and health. Results suggest that Baby Boomers in the 1952–57 cohorts are 43 percent more likely to experience poverty, and 63 percent more likely to be food insecure. A key reason for the deterioration in economic security, conclude the authors, is that the share of non-Hispanic Whites is declining due to demographic change over time, and this subgroup of the population had higher levels of wealth in the past compared to other race/ethnic groups.

Retirement, Debt, and Financial Vulnerability at Older Ages

The second section of the volume undertakes an exploration of the linkages between debt and the extent to which debt appears to be driving financial vulnerability at older ages. In their chapter, Li and White detect a doubling in the percent of bankruptcy filings by the elderly over time, from 6 percent in 2000 to 12 percent in 2018. Similarly, the share of the elderly in foreclosures also increased rapidly, from 6.8 percent in 2000 to 11 percent in 2018, or an increase of nearly two-thirds. Two events could help explain debt: the 2005 bankruptcy reform, and the financial crisis of 2008–09. While these are important explanations for financial distress overall in the economy, they cannot account for the growth in financial distress of the elderly relative to younger age groups.

Similar findings emerge from the chapter by Trawinski (2020). She reports that older families took on greater mortgage debt than in the past, and foreclosure rates for borrowers age 50+ have risen over time. By contrast, younger borrowers have had lower foreclosure rates since the financial crisis. In other words, many older homeowners may face the loss of their homes when, and if, interest rates rise.

Introduction: Debt in an Aging Economy 7

The chapter by Lester et al. takes a somewhat different tack by examining real-world debt patterns by age, building on a transactions dataset from J.P. Morgan & Chase Co. The authors observe that credit card debt is younger peoples' highest average debt service obligation, but they remain relatively high during the working years and throughout retirement, especially early on. Student loan payments are also high among the young, yet many older people continue to service these loans well into retirement. Auto loans and mortgages generally become important for people in their mid-30's, and while they decline after age 40, they are still consequential.

Butrica and Karamcheva (2020), in their chapter, investigate whether older Americans appear to be responding to rising debt levels by working longer, and retiring later. Their earlier research (Butrica and Karamcheva 2013; 2018) suggested that older persons holding debt were, in fact, more likely to work and less likely to claim early social security benefits. In the new dataset examined here, the authors confirm their earlier results and conclude that debt at older ages is negatively associated with the probability of retiring and claiming social security, and positively associated with continued work. These conclusions hold after the authors attempt to control on possible reverse causality. Moreover, mortgage debt seems to be a more powerful inducement to remain in the labor force, than are credit card debt or student loans. The impact is largest for those with a great deal of debt and little in the way of financial assets.

Policy Perspectives on Debt at Older Ages

Following the exploration of various dimensions of older persons' asset and debt positions, the third section of this volume analyzes potential lessons from the evidence for policymakers.

Biggs (2020) offers a provocative discussion of retiree benefits available to the lifetime poor—people who earned relatively little during their worklives, which the author equates to those whose lifetime earnings place them in the lowest quintile (20%) of the distribution. He notes that his group of retirees receives social security benefits replacing 84–96 percent of their income, suggesting that such individuals do not need to save much more. In further analysis, Biggs finds that required additional saving needs for the poor are quite low, at 0.4 percent of earnings for very low earners (though they are higher, 6.4 percent of pay, for maximum earners). Accordingly, this analysis does not imply a massive need for additional saving among the low-paid workforce.

A different population, namely public sector retirees, is the focus of the work by Clark and Liu (2020). Many in the public sector are still covered by DB plans where individuals have to make few decisions about their pensions,

8 Remaking Retirement

which is no longer the case for private sector workers. One might hypothesize that this group would be relatively unlikely to get into financial trouble in their older years. Nevertheless, the authors find that, even in this group of retirees, there is still a sizeable amount of financial distress and many retirees are observed making financial mistakes. In particular, women and non-married retirees often expressed having made financial mistakes, as measured by responses to four questions ranging from getting behind on payments, to borrowing from friends and family, to not paying down credit cards each month. The authors also show that the least financially literate were most likely to express feelings of financial distress, suggesting that financial education programs could help retirees struggling to manage their retirement assets and debts.

In view of Japan's unique experience with the most rapidly aging population in the world, Horioka and Niimi (2020) ask whether Japanese pre-retirees (age 50–59) experienced a run up in debt similar to that in the US. Their evidence indicates that there was no dramatic increase in older Japanese debt in the past 40 years; moreover, the debt to income ratios for pre-retirees was also relatively stable. Interestingly, however, debt to income ratios did rise substantially for the age 30–39 group, a development that the authors attribute to rising rates of home purchases among those starting families. This was partly due to the Japanese government having introduced and then expanded tax breaks to homeowners, pursued very low interest rate policies, and reformed the housing market, all factors that made it easier for the young to borrow for homes. In other words and not surprisingly, this cross-national comparison suggests that retiree debt is likely heavily influenced by government monetary and fiscal policy.

One question that readers might raise is whether the rise in debt for older households over time has been matched with increases in assets, in which case the overall leverage ratio might exhibit little long-term trend. The research presented in this volume concludes that this is not the case: for instance, M. Brown et al. (2020) point out that there has been a long-term rise in the ratio of debt to assets, particularly for the least wealthy. Lester et al. (2020) concur, showing that average debt to wealth ratios are the highest for the poorest members of the samples they study. This evidence supports evidence presented by Lusardi et al. (forthcoming), who report that today, Americans age 56–61 are far more leveraged than their counterparts were in the past. Specifically, the median value of total debt to total assets was rather small for the HRS Baseline cohort (only about 4%), yet the ratio rose to 11 percent and 15 percent for the War Baby and Early Boomer cohorts. Additionally, a sizeable percent of Early Baby Boomers had ratios over 50 percent, and some even hold debt amounting to 90 percent of total assets. In other words, one cannot remain sanguine about debt trends among the older population.

Introduction: Debt in an Aging Economy 9

Our volume closes with a macroeconomic analysis by Alter et al. (2020); here the authors worry that rising household debt can be associated with more unemployment, lower economic growth, and a higher chance of a banking crisis. The authors undertake a cross-national analysis using data from 80 countries, and they conclude that there is, in fact, a negative relationship between household debt growth and future GDP growth. Accordingly, they underscore the need for policymakers to closely monitor household debt levels, and to take these into account when developing central bank policy. Financial stability has increasingly become a concern for central bankers, and our data suggest that it is important to monitor not just the health of banks, but also the health of household balance sheets.

Conclusions

This volume provides cutting-edge research on the changing levels and types of debt in the older population. In the US, near-retirees today prove to have taken on substantially more debt than in the past, frequently because they bought more expensive homes than in the past, with smaller down payments. This growth in older debt can be attributable to both supply and demand factors in the credit market (Lusardi et al. forthcoming). In terms of the supply side, the long-term low interest rate policy combined with innovations making it easier for people to borrow encouraged debt, along with structural changes in the housing market making it easier and less expensive for people to finance/refinance their homes (Li and White 2020). On the demand side, low levels of financial sophistication characterized many Americans, and concurrently drove demand for more borrowing as well as mistakes in financial decision making.

Older persons with high levels of debt and, particularly, debt to income, would appear to be especially vulnerable to interest rate increases forecast for the future. While some of those holding large amounts of debt also have substantial assets, financial vulnerability in the older population is particularly marked for those in poor health and for those facing unexpectedly large income shocks. Another area explored in this volume in some detail is the growing importance of debts for student loans—which characterize not only the young, but also the older population. Moreover, delinquencies tend to be higher for student debt than for homeownership. While indebtedness does attenuate in later life, particularly among the higher income, better-educated, and more financially literate, there is certainly room for more financial literacy helping older persons do a better job managing their assets and debts over their retirement periods. Finally, the data point to large differences among the older population in terms of who is carrying debt close to retirement, which type of debt is creating problems, and what is

10 Remaking Retirement

likely to lie ahead given that debt seems to have become the norm among both the young and the old. One-size-fits-all policies are unlikely to address the needs of a heterogeneous population facing different circumstances. Policymakers must be alert to identify mechanisms that are effective in targeting specific population subgroups, particularly the most vulnerable.

References

- Alter, A., A. X. Feng, and N. Valckx (2020). ‘Understanding the Macro-financial Effects of Household Debt: A Global Perspective.’ In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 226–53.
- Bee, A. and J. Mitchell (2017). ‘Do Older Americans Have More Income Than We Think?’ SESHD Working Paper 2017–39. US Census Bureau. <https://bit.ly/2KMR5j3>.
- Biggs, A. G. (2020). ‘How Much Should the Poor Save for Retirement? Data and Simulations on Retirement Income Adequacy among Low-Earning Households.’ In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 167–83.
- Brown, J., K. Dynan, and T. Figgins (2020). ‘The Risk of Financial Hardship in Retirement: A Cohort Analysis.’ In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 60–85.
- Brown, M., D. Lee, J. Scally, and W. van der Klaaw (2020). ‘The Graying of American Debt.’ In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 35–59.
- Butrica, B. A. and N. S. Karamcheva (2013). ‘Does Household Debt Influence the Labor Supply and Benefit Claiming Decisions of Older Americans?’ Boston College Center for Retirement Research Working Paper 2013–22.
- Butrica, B. A. and N. S. Karamcheva (2018). ‘In Debt and Approaching Retirement: Claim Social Security or Work Longer.’ *AEA Papers and Proceedings* 108: 401–6.
- Butrica, B. A. and N. S. Karamcheva (2020). ‘Is Rising Household Debt Affecting Retirement Decisions?’ In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 132–64.
- Clark, R. L. and S. Liu. (2020). ‘Financial Well-being of State and Local Government Retirees in North Carolina.’ In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 184–206.
- Horioka, C. Y. and Y. Niimi (2020). ‘Household Debt and Aging in Japan.’ In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 207–25.
- Lester, K. S., J. Oh, L. Wu, and E. Chegaeva (2020). ‘Paying It Back: Real-world Debt Service Trends and Implications for Retirement Planning.’ In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 116–31.
- Li, W. and M. White (2020). ‘Financial Distress among the Elderly: Bankruptcy Reform and the Financial Crisis.’ In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 89–105.

Introduction: Debt in an Aging Economy 11

- Lusardi, A., O. S. Mitchell, and N. Oggero (2018). 'The Changing Face of Debt and Financial Fragility at Older Ages.' *AEA Papers and Proceedings*, 108: 407–11.
- Lusardi, A., O. S. Mitchell, and N. Oggero (forthcoming). 'Debt and Financial Vulnerability on the Verge of Retirement.' *Journal of Money, Credit, and Banking*.
- Lusardi, A., O. S. Mitchell, and N. Oggero (2020). 'Debt Close to Retirement and its Implications for Retirement Well-being.' In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 15–34.
- Romig, K. (2018). 'Social Security Lifts More Americans above Poverty Than Any Other Program.' Center on Budget and Policy Priorities, November. <https://bit.ly/2SfKVi0>.
- Trawinski, L. (2020). 'Mortgage Foreclosures and Older Americans: A Decade after the Great Recession.' In O. S. Mitchell and A. Lusardi, eds, *Remaking Retirement: Debt in an Aging Economy*. Oxford: Oxford University Press, pp. 106–15.
- US Census (nd). 'How the Census Bureau Measures Poverty.' US Census Bureau. <https://bit.ly/2IN0msG>.