Final Report

LONGLIVES

Table of contents

1 General Information

1.1 Acronym of the collaborative project

LONGLIVES

1.2 Full title of the project

Policies for longer working lives: understanding interactions with health and care responsibilities

1.3 Project duration

Planned start date	
Actual start date (of earliest starting national partner)	
Planned end date	
Actual end date (of latest ending national partner)	

1.4 Project coordinator

Name	Peter Haan
Institution	DIW Berlin and Freie Universität Berlin
Country	Germany
Email	phaan@diw.de
Funding Organisation	BMBF
Duration project participation	01.03.2016 - 28.02.2019

1.5 Project Partners

Partner 2

Name of Principal Investigator	Paul Bingley
Institution	VIVE – Danish Center for Social Science Research
Country	Denmark
Email	pab@vive.dk
Funding Organisation	Innovation Fund Denmark
Duration project participation	1 March 2016 to 28 February 2019

Partner 3

Name of Principal Investigator	Antoine Bozio
Institution	Paris School of Economics – IPP
Country	France
Email	antoine.bozio@ipp.eu
Funding Organisation	Agence nationale de la recherche (ANR)
Duration project participation	1 March 2016 – 28 February 2020

Partner 4

Name of Principal Investigator	Carl Emmerson
Institution	Institute for Fiscal Studies
Country	United Kingdom
Email	carl_e@ifs.org.uk
Funding Organisation	Economic and Social Research Council
Duration project participation	1 May 2016 to 30 April 2019

Please insert further tables to add more partners, as appropriate.

1.6 Project budget

Please add the budget of the overall project (total budget) and the budget per partner in Euros.

	Funds awarded	Actual spend
Total Budget	€	€

	Funds awarded	Actual spend
Budget Partner 1	€ 248,150	€ 239,913
Budget Partner 2	DKK2,656,153	DKK2,656,153
Budget Partner 3	€305,070	€305,070
Budget Partner 4	£303,544	£304,152

Please insert further rows of the table to add more partners, as appropriate.

2   Plain English Abstract

Please briefly summarise the project including its achievements and main conclusions in plain English (see http://www.plainenglish.co.uk/free-guides.html). This abstract will be made publically available, including being published on the JPI MYBL website (max. 500 words).

This project focuses on the interactions between employment, health and inequality in an aging society. Particular emphasis has been put on the documentation of prevailing inequalities and on the analysis of the impact of policy measures in the area of retirement and care on various dimensions of the elderly's lives. We used several empirical methods to answer the research questions. We documented inequalities and trends using descriptive statistical methods. Causal effects were analyzed using econometric tools that enable causal inference. Moreover, dynamic microsimulation models have been developed and improved further. Based on these models the future development of care demand and informal care supply have been estimated. In addition, the models have been used for ex-ante analyses of reform proposals taking into account demographic aging.

3   Achievements

Please complete the tables below which are intended to capture details of the achievements of the project as a whole, as well as achievements of the individual work packages. There is also space to highlight where you have had to deviate from your original work plans and why. This information will help us in anticipating problems that may be experienced by award holders in future joint calls. This section is for internal use and the information you provide will not be published.

3.1   Summary of Work Packages

WP	Title
WP 1	**Inequalities and policies at older ages: a comparative approach**
WP 2	**Longer working lives and the effects on health**
WP 3	**Caring responsibilities and longer working lives**
WP 4	**The outlook for labour supply, health and care giving and the possible effects of alternative policies**

3.2   Achievements

Achievements of the Project

Please describe the achievements of the overall project. There is space to elaborate on the achievements of individual work packages separately afterwards. Please consider the main objective and aim of the call in your answer (the JPI MYBL secretariat can provide this if required). You should also explain whether the project is *finalised in line with* the work plan set out in your original application and if the project *achieved its expected results* as set out in your original work plan (max 3 pages).

Achievements WP 1

Please describe the achievements of work package 1 in relation to the initially planned objectives (max. 2 pages).

This WP quantifies gender-specific differences in retirement income in Germany, Denmark, and France. We show that the "gender pension gap" in Germany is higher than in France and much higher than in Denmark. This ranking is similar to the ranking in the gender pay gap, where Germany has also the highest gender difference. We also investigate gender-specific differences in health, i.e. the so-called "gender health gap", in the same age group. Self-assessed general health in 2013 reveals no significant differences between men and women in the countries studied. However, gender-specific differences in depressive symptoms follow a similar pattern as the gender pension gap:

Denmark has the lowest difference between the sexes. Although the study does not measure causal relationships between income and health, the results indicate that measures to reduce the gender pay gap do not only reduce differences during the economically active phase; they may also lead to a reduction in the gender pension gap and in women's susceptibility to depressive symptoms.

This study is based on data from the Survey of Health, Ageing and Retirement in Europe (SHARE). SHARE is a recurring multi-disciplinary survey that collects data on health and economic conditions of the population over age 50 across countries. To establish comparability, we use data from Waves 2 and 5 of the survey, which were collected in 2006/2007 and 2013 respectively. The monetary indicators relate to the respective prior year; therefore, the findings for Wave 2 are based on 2005 and 2006 and those for Wave 5 on 2012. We calculate the gender pension gap as the percentage difference in average retirement income between men and women. The gender health gap is calculated accordingly. Since age can have a considerable influence on a person's health status, we control for age. To ensure better comparability, we also control for the age structure when calculating the pension gap. In the calculation, the average absolute difference in pension between men and women, adjusted for age, is divided by the average retirement income of all men.

Our comparative analysis of the gender gap in retirement income and health in three countries shows that there is a gender pension gap in Germany, and that it is substantial in comparison to Denmark in particular. Parallel to the gender pension gap, there is a more pronounced gender difference in depressive symptoms of retirees in Germany compared to Denmark. This study does not allow to draw causal conclusions regarding gender-specific inequality in retirement income and depressive symptoms. However, the findings of other scientific studies indicate a causal relationship between individual economic situations and health. Applied to our case of retirement income, this could mean that a more egalitarian income distribution in retirement could lead to a more egalitarian distribution of mental health. Measures aimed at reducing gender-specific inequality during the economically active phase currently under discussion in Germany include taxing married couples as individuals and fully implementing the Remuneration Transparency Act (Entgelttransparenzgesetz, EntgTranspG), which is designed to promote more transparency regarding pay structures. Such policies could indeed contribute to closing the gender pension gap. Moreover, our findings suggest that such measures could potentially also reduce gender-specific differences in depressive symptoms in old age.

A strand of related work from the UK team focused on the impacts of the rise in the UK's female state pension age on the circumstances of those affected. This found that despite increases in employment among 60 to 63 year old women who were affected by the reform there was, on average, a drop in income among this group. This was because the loss of pensions was only partly balanced by income from employment and other benefits. A crucial element of awareness of the reform: the research finds that a substantial proportion of women approaching retirement were not aware of their state pension age and that the increase in employment between ages 60 and 63 as the state pension age rose is only seen among those women who were aware of their state pension age when they were 58.

Achievements WP 2
Please describe the achievements of work package 2 in relation to the initially planned objectives (max. 2 pages).

The second work package (WP2) is focused on the effects of longer working lives on health outcomes of older people. The aim of WP2 is to go beyond the correlations between work (or retirement) and health outcomes, which are documented in a large literature and provide new evidence on the causal impact of retirement on health. Because better health may itself encourage a longer working life, it is difficult to empirically disentangle the effect of work on health from that of health on work.

In this WP we exploit country specific reforms to get clean identification of the effect of pension reforms. For example, for Germany we focus on the pension reform 1999. Specifically, to identify the causal effect of an increase in the retirement age on health outcomes, we exploit a sizable and cohort-specific pension reform which was implemented in 1999. The reform abolished an early

retirement program for women born after 1951 and thereby effectively increased the early retirement age (ERA) for women from age 60 to at least 63. It provides a clean quasi-experimental setting as it induces a substantial discontinuity in retirement ages for two adjacent cohorts (women born in 1951 versus women born in 1952). The results are mixed but they provide evidence that a longer working life leads to negative health effects. In addition to the proposed agenda we study as well how this pension reform affects the income distribution and old age poverty and show that other elements of the tax and transfer system have to a large extent compensated for the reduction in the generosity of the pension system.

For France, we have exploited the 1993 pension reform that has affected certain workers with a specific combination of contribution length and year of birth. We estimate the impact of the reform on the retirement age and find a strong behavioral response, and we then estimate the impact of the reform on death rates. We exploit administrative data with the universe of private sector workers in France, which allows us to obtain very precise estimates. Our results, precisely estimated, show that an exogenous increase of one year in the claiming age has no significant impact on the probability to die, measured between age 61 and 79, even when we allow for nonlinear effects of treatment intensity. To test the power of our sample to detect statistically significant effects for rare events like death, we compute minimum detectable effects (MDEs). Our MDE estimates suggest that, if an impact of later retirement on mortality would be detectable, it would remain very small in magnitude.

The UK team exploited the increase in the state pension age for women, which rose from 60 in 2010 to 63 in 2016, to examine the impact of retirement on different measures of health. Specifically, they examine how the health of those women who responded to the reform by remaining in paid work was affected. Their results show that remaining in work has significant positive causal effects on the average cognition and physical mobility of older women in England. They find that working longer substantially boosts performance on two cognitive tests, particularly for single women. They also find large improvements in measures of physical disability: substantial increases in walking speed, and lower reports of mobility problems. However, for women in sedentary occupations, work reduces walking speed, due to lower levels of exercise.

For Denmark in 1999 the Old Age Pension age was lowered from 67 to 65. This was part of a larger reform of the retirement system which intended to reduce the fiscal burden of the so-called post-employment wage but it also affected the OAP program and the Disability Insurance program. As a result of the reform, the OAP age was lowered from 67 year to 65 years for persons born after the 1st of July 1939. In effect, this meant that two groups born within the same year (1939) have substantially different retirement ages. This enables us to compare a control group (persons born before the 1st of July 1939) and a treatment group (persons born the 1st of July 1939 or later), where the treatment the latter group is exposed to is a lowered retirement age and see whether policy change have any effect on life expectancy. To do so, we track the proportion of persons alive over time at similar age for the two groups to see whether the reform results in any differences in the age span 60 to approximately 78.5 years. We find some evidence that a lowered retirement age improves the life expectancy. Or vice versa, that a rise in the retirement age has adverse effects on life expectancy.

Achievements WP 3

Please describe the achievements of work package 3 in relation to the initially planned objectives (max. 2 pages).

This work package provides new insights about the demand for care, and the likelihood of this being met through informal care from family members. Each country has looked at:
- Prevalence of (and persistence in) need for care among different types of people;
- How this translates into use of informal care from family members, which will depend on the country-specific institutions;
- Whether this informal care is provided by individuals towards the end of their own working lives;
- How this demand for care relates to the labour supply of older workers.

Studying these questions across the four countries provides valuable insights into the relationship between care need, informal care provision and labour force participation because they differ

significantly in public provision of social care, and there is also variation within both Denmark and the UK in how (and how extensively) publicly-funded care is provided. Moreover, this information has been used to update the country specific microsimulation models.

The French team used several sources of data to estimate prevalence and dynamics of need for care across time. It first mobilized epidemiological data sources from French cohort studies following individuals until death with very detailed information about their health status and related need for care. It then moved the approach to using SHARE data, exploiting the information from this European-wide survey to estimate prevalence and dynamics of care needs across time. The approach has also been applied to ELSA (England and Wales) and HRS (US) ageing surveys.

In addition, we have studied the effect of long-term care reforms on the provision of informal care in Germany and we have analysed the consequences of the mentioned pension reform on informal care provision. These studies show that there exists a time conflict between the provision in informal care and employment and that more generous support for long term care helps to reduce this time conflict.

The UK team examined the extent to which changes in the receipt of care across successive birth cohorts might offset (or add to) increasing demand for social care arising from population growth. A first factor is that in future each person might need less care at any given age. We find evidence that the proportion of men aged 65 years and above reporting any difficulties with daily activities has fallen across birth cohorts, though we find no evidence of any change among women. Therefore, rates of need for care for men may therefore be falling, but seem less likely to do so for women. A second reason why we might expect to see reduced rates of formal care provision in future is due to the increased availability of informal care provided by partners. We find this is indeed the case for women: for example, women born 1935-44 are 5.8 percentage points more likely to receive care from a spouse at a given age than are women born 1915-24. No statistically significant results were found for men.

Please insert further tables to add more work packages, as appropriate.

Achievements WP 4
Please describe the achievements of work package 4 in relation to the initially planned objectives (max. 2 pages).

In this work package, we will use dynamic micro-simulation models to simulate how labour supply, health, and care giving will evolve over the next 10 to 50 years in each country under current and alternative policies. Without any policy changes there are profound changes in demographic and economic trends, which will affect long term inequalities at older ages. We have documented the likely impact of these trends in each country which will help policy makers to understand expected changes in needs. The advantage of these micro-simulation models is that we are able to present results at a household level and to describe in detail heterogeneity across the population, how existing inequalities are likely to evolve, and to identify the most vulnerable groups of the older population under current policies.

Based on the models we have simulated what could happen under an alternative set of policies and scenarios, specifically relating to public provision of social care, public pensions, and incentives for older people to participate in the labour force. For Germany we have used the microsimulation model DYSIMO and have studied the implications of recent pension reform proposals on income and poverty. The central finding of this analysis is that although old age poverty can be reduced by more generous pension it will remain a serious problem for sub groups with short and interrupted working histories.

The French team has developed a dynamic microsimulation model, using a novel methodological approach to quantify the projected increase in long-term care needs within ageing populations. The model relies on i) the measurement of disability at old age through an epidemiological indicator, and ii) on the estimation of the transition rates between several degrees of disability states. Using estimates of the dynamics of care needs measured in WP 3, the model is able to project the French population care needs by 2060. A key assumption is related to how life expectancy gains are allocated to the different possible health transitions. By estimating the transitions in health status, we make explicit this key assumption. In our baseline scenario we obtain a projection of between 2.4 and 3.6 million disabled elderly in France by 2060. Even if uncertainty remains, our various scenarios point to an expansion of morbidity. The probability to remain autonomous appears to be one of the major parameters influencing the projection of long-term care needs.

Projection suggest that the provision of informal care will increase. If this does then the extent to which this reduces demand for formal care will depend on the degree of substitution between the two. The UK research has looked at this directly, exploiting the fact that those who have a daughter are more likely to receive informal care than individuals who only have sons. They find evidence that a 10% increase in hours of informal care received reduces formal care hours by around 5%, with this offset being bigger for publicly funded formal care than for privately funded formal care.

For Denmark: Three theories dominate research on predicting morbidity patterns, namely morbidity expansion, morbidity compression, and dynamic equilibrium. To examine the morbidity and functioning disability prospects of an aging population, these theories are simulated for the Danish population using the Danish microsimulation model SMILE. To project morbidity and functioning disability, SMILE relies on Danish administrative register data and data from the Survey of Health, Ageing and Retirement in Europe (SHARE). This exercise should aid to a better understanding of the scope of health care and fiscal challenges associated with an aging population. From both the perspective of morbidity and functioning disability, projections results indicate a worsening or a resemblance of the state in 2013 for the seniors in Denmark (aged 50-100), mainly due to changes in the age composition. These results apply even in scenarios where the population is less likely to get in more morbid states (morbidity compression) or less impaired by diseases (dynamic equilibrium) at a given age.

3.3   Deviations from the original work plan

Please describe any significant deviations from the original work plan at the level of the overall project and each individual work package. Describe how any deviations differ from the original plan and give clear reason(s) for the deviation(s) or anything not achieved to date.

In general, we have followed the original working plan.

4   Key Findings and Recommendations

Please describe the key high-level findings of the research for each work package (max. four key findings per work package) and highlight recommendations associated with each key finding (e.g., recommendations for policy or practice).

WP 1	
Key findings	**Recommendations**
We show that the "gender pension gap" in Germany is higher than in France and much higher than in Denmark. Parallel	More egalitarian income distribution in retirement could lead to a more egalitarian distribution of mental health.

to the gender pension gap, there is a more pronounced gender difference in depressive symptoms of retirees in Germany compared to Denmark.	
We show that despite an increase in employment arising from the rise in the UK state pension age, average incomes of those affected are reduced. The delay to retirement ages comes from those who were previously aware of their state pension age, not those who were unaware.	Importance of informing individuals of rises in legislated pension ages.

WP 2	
Key findings	**Recommendations**
The results provide evidence that a longer working life leads to negative effects for various health outcomes.	Investment in better health and in better working conditions is important when increasing retirement age.
For women in the UK the evidence suggests improved cognitive function among those who delay their retirement – particularly among single women. Mobility is also improved, though not for those in sedentary occupations.	Potential for delayed retirement to improve some measures of health.
We show that increasing retirement age in France with past pension reform has no impact on mortality outcomes for those affected	No specific recommendation.

WP 3	
Key findings	**Recommendations**
There exists a time conflict between the provision of informal care and employment.	More generous support for long term care helps to reduce this time conflict.
Rates of needs of care among men may be falling, but not among women. However, among women demand for formal care in future might be reduced by increased receipt of informal care from their partner.	When considering likely future demands for formal care important to consider how rates of care need might evolve, and also how provision of informal care might change.
In the case of France, we find limited substitution between formal and informal care, only to secondary caregivers and some daily activities	This result suggests that policies supporting the development of formal long-term care will have limited impact on informal care.

WP 4	
Key findings	**Recommendations**
Old age poverty can be reduced by more generous pensions, but old age poverty will remain a serious problem for sub groups with short and interrupted working histories.	Investment in education and health during the working life is important to reduce old age poverty.
An increase in hours of informal care received reduces receipt of formal care – with a bigger offset being found for publicly funded care than for privately funded care.	Availability of informal care will be an important determinant of demands for publicly funded formal care.

5 Milestones

Please describe the milestone(s) for each work package and indicate when you achieved each milestone, leaving the final column blank if the milestone was not achieved.

WP	Milestone	Date achieved
WP 1	Project meeting with the international cooperation partners. The meetings were each attended by several members of the country-specific subprojects. Challenges and progress were presented and discussed. In addition, the meetings served to coordinate jointly worked on issues.	• September 12-13, 2016, Berlin
WP 2	Project meeting with the international cooperation partners. The meetings were each attended by several members of the country-specific subprojects. Challenges and progress were presented and discussed. In addition, the meetings served to coordinate jointly worked on issues.	• May 15-16, 2017, Copenhagen
WP 3	Project meeting with the international cooperation partners. The meetings were each attended by several members of the country-specific subprojects. Challenges and progress were presented and discussed. In addition, the meetings served to coordinate jointly worked on issues.	• November 13-14, 2017, London
WP 4	Project meeting with the international cooperation partners. The meetings were each attended by several members of the country-specific subprojects. Challenges and progress were presented and discussed. In addition, the meetings served to coordinate jointly worked on issues.	• June 25-26, 2018, Paris • April 17-18, 2019, Paris

Please insert further rows to add more deliverables, as appropriate.

6 Deliverables

Please describe the deliverable(s) for each work package and indicate when you achieved each deliverable, leaving the column blank if the deliverable was not achieved. In addition, please report the dissemination level (i.e., public, confidential) and the format of the deliverable (e.g., report, video). Please collate copies of all the deliverables in a ZIP-file and submit the file along with this report. Please name the individual items in the ZIP-file identically to the deliverable names in the table below to enable easy identification.

WP	Deliverable name	Date achieved	Dissemination level	Format	Attached
WP 1	See publications, below		Public/ confidential		Yes/No
WP 2	See publications, below				
WP 3	See publications, below				
WP 4	See publications, below				

Please insert further rows to add more deliverables, as appropriate.

7 Outputs

7.1 Publication list

Please list the publications that resulted from the funded project and indicate which type of publication (e.g., peer reviewed article, book/book chapter, review, communication in scientific congress, dissertation, other).

Title	Type
Title of the publication and DOI number or other link	Peer reviewed article
Peter Haan, Anna Hammerschmid, Carla Rowold (2017): Geschlechtsspezifische Renten- und Gesundheitsunterschiede in Deutschland, Frankreich und Dänemark, DIW Wochenbericht 43/2017. English Version: Gender Gaps in Pensions and Health: Germany, France, and Denmark, DIW Economic Bulletin 43/2017. Deutscher Beitrag in überarbeiteter Fassung außerdem erschienen als Kapitel 9 in: Hurrelmann, Karch, Traxler (Hrsg.): MetallRente Studie 2019 Jugend Vorsorge Finanzen.	Peer reviewed article
Johannes Geyer, Thorben Korfhage (2018): Labor supply effects of long-term care reform in Germany, Health Economics, 27, 1328-1339.	Peer reviewed article
Peter Haan, Anna Hammerschmid, Julia Schmieder: Mortality in Midlife for Subgroups in Germany, The Journal of the Economics of Ageing [online first]. Auch erschienen als DIW Discussion Paper 1785.	Peer reviewed article
Peter Haan, Anna Hammerschmid, Robert Lindner, Julia Schmieder (2019): Todesfälle durch Suizid, Alkohol und Drogen sinken deutlich bei Männern und Frauen in Ost- und Westdeutschland, DIW Wochenbericht 7-8.	Policy Paper
Johannes Geyer, Peter Haan, Anna Hammerschmid, Clara Welteke (2019): Erhöhung des Renteneintrittsalters für Frauen: Mehr Beschäftigung, aber höheres sozialpolitisches Risiko, DIW Wochenbericht 14.	Policy Paper
Anna Hammerschmid und Carla Rowold (2019): Gender Pension Gaps sind in vielen europäischen Ländern ein Problem, Beitrag im DIW Wochenbericht 18. English Version: Gender pension gaps - a problem in many European countries, Beitrag im DIW Weekly Report 16/17/18/2019.	Policy Paper
Anna Hammerschmid und Carla Rowold (2019): Gender Pension Gaps in Europa hängen eindeutiger mit Arbeitsmärkten als mit Rentensystemen zusammen, DIW Wochenbericht 25/2019. English Version: Gender Pension Gaps in Europe Are More Explicitly Associated with Labor Markets than with Pension Systems, DIW Weekly Report 25/2019.	Policy Paper
Johannes Geyer, Peter Haan, Anna Hammerschmid, Michael Peters (2020): Labor Market and Distributional Effects of an Increase in the Retirement Age, Labour Economics, vol. 65, issue C.	Peer reviewed article
Björn Fischer und Kai-Uwe Müller (2020): Time to Care? The Effects of Retirement on Informal Care Provision, Journal of Health Economics, vol. 73.	Peer reviewed article

Amin-Smith N., Crawford, R. (2018) 'State pension age increases and the circumstances of older women' in Banks, J., Batty D, Nazroo J, Oskala A, Steptoe A. (eds), *The Dynamics of Ageing: Evidence from the English Longitudinal Study of Ageing 2002-16 (Wave 8)* (pp. 9-39). London: The Institute for Fiscal Studies. https://ifs.org.uk/publications/13664	Book chapter
Banks J, Emmerson C. (2021) 'A Lifetime of Changes: State Pensions and Work Incentives at Older Ages in the UK, 1948-2018' in Borsch-Supan, A. and Coile, C. (eds), *Social Security Programs and Retirement around the World: Reforms and Retirement Incentives.* Cambridge, Massachusetts: National Bureau of Economic Research. https://www.nber.org/books-and-chapters/social-security-programs-and-retirement-around-world-reforms-and-retirement-incentives/lifetime-changes-state-pensions-and-work-incentives-older-ages-uk-1948-2018	Book chapter
Banks, J., Emmerson, C. and Tetlow, G. (2019). Long-Run Trends in the Economic Activity of Older People in the United Kingdom. In Coile, C., Milligan K, Wise D. (eds), *Social Security Programs and Retirement around the World: Working Longer* (pp. 267-297). Cambridge, Massachusetts: National Bureau of Economic Research. https://www.nber.org/books-and-chapters/social-security-programs-and-retirement-around-world-working-longer/long-run-trends-economic-activity-older-people-united-kingdom	Book chapter
Crawford R, Stoye G. *The prevalence and dynamics of social care receipt.* https://ifs.org.uk/publications/8893	Policy report
Crawford R, Stoye G, Zaranko B. *The impact of cuts to social care spending on the use of Accident and Emergency departments in England.* https://ifs.org.uk/publications/13070	Working paper
Crawford, R., Simpson P. (2018). *A Review of the Department of Health and Social Care's Funding Reform Model.* Institute for Fiscal Studies. https://ifs.org.uk/publications/13336	Policy report
Sturrock D, Emmerson C, Cribb J, Banks J. *The impact of work on cognition and physical disability: Evidence from English women.* https://ifs.org.uk/publications/14164	Working paper
Paul Bingley, Nabanita Datta Gupta & Peder J. Pedersen, 2017. " Health Capacity to Work at Older Ages in Denmark", in: David A. Wise (ed.) Social Security Programs and Retirement around the World: The Capacity to Work at Older Ages, pages 85-110, University of Chicago Press.	Book chapter
Paul Bingley, Nabanita Datta Gupta & Peder J. Pedersen, 2019. "From Early Retirement to Staying in the Job: Trend Reversal in the Danish Labor Market", in: Courtney C. Coile, Kevin Milligan, and David A. Wise (eds.) Social Security Programs and Retirement around the World: Working Longer, pages 67-86, University of Chicago Press.	Book chapter
Paul Bingley, Nabanita Datta Gupta, Malene Kallestrup-Lamb & Peder J. Pedersen, (2021). "Labor Force Exit in Denmark 1980-2016: Impact from Changes in Incentives", in: Axel Börsch-Supan and Courtney Coile (eds.) Social Security Programs and Retirement around the World: Reforms and Retirement Incentives, University of Chicago Press.	Book chapter

Søren Skotte Bjerregaard & Marianne Frank Hansen, 2019. "Projecting morbidity in Denmark using the SMILE microsimulation model", Danish Research Institute for Economic Analysis and Modelling (DREAM) working paper, 2019/02.	Working paper
Søren Skotte Bjerregaard, 2019. "Does Lowered Retirement Age Decrease Mortality? Evidence from the 1999 Pension Reform in Denmark", Danish Research Institute for Economic Analysis and Modelling (DREAM) working paper, 2019/03.	Working paper
Antoine Bozio, Clémentine Garrouste and Elsa Perdrix (2021) "Impact of later retirement on mortality: Evidence from France", *Health Economics*, Vol. 30, No. 5, May 2021, pp. 1178-1199 https://doi.org/10.1002/hec.4240	Peer reviewed article
Didier Blanchet, Eve Caroli, Corinne Prost, and Muriel Roger, 2017. "Health Capacity to Work at Older Ages in France", in: David A. Wise (ed.) Social Security Programs and Retirement around the World: The Capacity to Work at Older Ages, University of Chicago Press. 10.7208/chicago/9780226442907.001.0001	Book chapter
Didier Blanchet, Antoine Bozio, Corinne Prost, and Muriel Roger, 2019. " Explaining the Reversal in the Trend of Older Workers' Employment Rates: The Case of France", in: Courtney C. Coile, Kevin Milligan, and David A. Wise (eds.) Social Security Programs and Retirement around the World: Working Longer, pages 67-86, University of Chicago Press.	Book chapter
Clémentine Garrouste and Elsa Perdrix (2021) "Is There a Consensus on the Health Consequences of Retirement? A Literature Review" Journal of Economic Surveys https://doi.org/10.1111/joes.12466	Peer reviewed article
Elsa Perdrix and Quitterie Roquebert (2021) "Does an Increase in Formal Care Affect Informal Care? Evidence among the French Elderly", *European Journal of Health Economics* 10.1007/s10198-021-01370-5	Peer reviewed article
Mahdi Ben Jelloul, Antoine Bozio, Elsa Perdrix, Audrey Rain and Léa Toulemon (2021) "Dynamic of the Disability Process in Ageing Populations", PSE working paper.	Working paper
Elsa Perdrix (2020) "Does Later Retirement Change your Healthcare Consumption? Evidence from France", PSE working paper 2020-46	Working paper

7.2   Presentations at (scientific) conferences and symposia, including JPI MYBL activities

Please list the presentations at (scientific) conferences and symposia that resulted from the funded project.

Presentation	Date
[Title presentation] at [name scientific conference] by [presenter name]	
Network- meeting JPI MYBL Projekte Anna Hammerschmid	2016
JPI-MYBL-Konferenz in Rom Anna Hammerschmid	2016
Jahrestagung des Vereins für Sozialpolitik (Wien) Peter Haan	2017
29th Annual Conference of the European Association of Labour Economists EALE (St. Gallen) Stefan Etgeton	2017
Seminarvortrag an der Universität Würzburg Peter Haan	2017
Workshop an der Hertie School of Governance (Lebensformen, Erwerbsverläufe und die Alterssicherung von Frauen) Anna Hammerschmid	2017
Netzwerktreffen JPI MYBL in London Anna Hammerschmid	2017

JPI-MYBL-Konferenz (Brüssel), Anna Hammerschmid	2018
DFG Konferenz „Demographics, Immigration and the Labor Market" (Nürnberg) [Peter Haan	2018
Royal Economic Society Annual Conference, ESPE 2018 (Antwerpen) Stefan Etgeton	2018
Jahrestagung des Vereins für Socialpolitik (Freiburg) Stefan Etgeton	2018
Gender Economics Workshop (Berlin) Anna Hammerschmid	2018
Workshop "Elderly Care in France and in Europe" an der Paris School of Economics (Paris) Johannes Geyer	2019
Workshop "New Social Risks and Pension Policies in Europe" an der Hertie School of Governance (Berlin) Anna Hammerschmid	2019
Tagung „Sozioökonomische Dimensionen in verlängerten Erwerbskarrieren" bei der Deutschen Rentenversicherung Bund (Berlin) Johannes Geyer	2019
Hintergrundgespräche zum Thema Rente mit Mitgliedern des Bundestags (im Rahmen der Reihe „Leibniz im Bundestag") Anna Hammerschmid	2019
Longlives Module 1 at Network meeting Carl Emmerson	2016
Longlives Module 2 at Network meeting Jonathan Cribb	2016
Increasing the state pension age for women in the United Kingdom at Network meeting Jonathan Cribb	2016
Modelling Work, Health, Care and Income in the Older Population at Network meeting Carl Emmerson	2016
Module 3: Caring responsibilities and longer working lives at Network meeting Carl Emmerson	2016
Modelling Work, Health, Care and Income in the Older Population at Network meeting Jonathan Cribb	2017
Prevalence and dynamics of social care receipt at Network meeting Rowena Crawford	2017
Substitution between informal and formal social care among the older population in England at Network meeting George Stoye	2017
Increases in the state pension age, longer working, and links to cognitive function and physical mobility at Network meeting David Sturrock	2018
Modelling work, health, care and income in the older English population: The IFS retirement simulator (RetSim) at conference on "Elderly Care in France and in Europe", Paris School of Economics, Carl Emmerson	2019
The causal impact of longer working on cognitive function and mobility: Exploiting the increase in the State Pension Age for women in the UK at CHARLS International Conference, Peking University, James Banks	2018
Does the older population substitute informal care for formal care in England? at conference on "Elderly Care in France and in Europe", Paris School of Economics, George Stoye	2019
The impact of a longer working life on health: exploiting the increase in the UK state pension age for women, DWP/University of Sheffield Work and Pensions and Labour Economics Conference	2019
Social care receipt: prevalence and expectations at a conference at Institut National d'Études Démographiques in Paris Rowena Crawford	2018
State pension age increases and the circumstance of older women, ELSA Wave 8 Report Launch, Neil Amin-Smith	2018
Substitution between informal and formal social care among the older population England, British and Irish Longitudinal Studies conference at Queen's University, George Stoye	2018

Substitution between health and social care: evidence from England, RES Conference, George Stoye	2018
Substitution between health and social care: evidence from England, Health Economists Study Group	2018
Impact of longer working on health and cognition, The labour market with an ageing population conference at Uppsala University	2018
The effect of a longer working life on mobility and cognitive function, RES conference, Carl Emmerson	2018
Expectations of future care needs and wealth trajectories in retirement, Irish Economic Association Conference, Dublin, Rowena Crawford	2018
Bingley contributed to a special session "The effects of longer working at older ages" at the UK Royal Economic Society Conference held at Sussex University on 27 March 2018.	2018
Bingley presented "LONGLIVES" at the final seminar for the JPI-MYBL 2015 "Extended Working Life and its Interaction with Health, Wellbeing and beyond" held in Helsinki on 29 October 2019.	2019
Bjerregaard presented "Elderly Care Dynamic Microsimulation in Europe: The Danish SMILE microsimulation model" at the conference "Elderly care in France and in Europe" held at the Paris School of Economics on 18 April 2019.	2019
Longlives worshop in Berlin. Presentations by Didier Blanchet and Antoine Bozio.	2016
Longlives workshop in Copenhagen. Presentation by Elsa Perdrix "Impact of pension reform in France on mortality"	2017
Longlives workshop in London. Presentation by Elsa Perdrix "Impact of pension reform in France on mortality" and presentation by Eve Caroli "Impact of pension reforms on health care utilization using health care admin data"	2017
Impact of later retirement on mortality: Evidence from France, Royal Economic Society conference, University of Sussex, Elsa Perdrix.	2018
Modelling care needs using dynamic microsimulation model, INED-IPP, Mahdi Ben Jelloul	2018
Elsa Perdrix presented "Substitution between formal and informal care" at the Paris Longlives meeting in June 2018.	2018
Antoine Bozio presented "Projection of disabled population by microsimulation" at the Paris Longlives meeting in June 2018.	2018
Léa Toulemon presented "Long term care across countries" at the Paris Longlives meeting in April 2019.	2019
Elsa Perdrix presented "Transition between dependency states across countries" at the Paris Longlives meeting in April 2019.	2019
Audrey Rain presented "The TAXIPP-LIFE model. A dynamic microsimulation model to model elderly care needs, at the conference "Elderly care in France and in Europe" held at the Paris School of Economics on 18 April 2019.	2019

7.3 Communications, public engagement activities and knowledge exchange events

Please list the communications, public engagement activities and knowledge exchange events where results from the funded project were shared with specific audiences, including the general public.

Activity or event	Date

Peter Haan, Anna Hammerschmid, Carla Rowold (2017): Geschlechtsspezifische Renten- und Gesundheitsunterschiede in Deutschland, Frankreich und Dänemark, DIW Wochenbericht 43/2017.	2017
Peter Haan, Anna Hammerschmid, Robert Lindner, Julia Schmieder (2019): Todesfälle durch Suizid, Alkohol und Drogen sinken deutlich bei Männern und Frauen in Ost- und Westdeutschland, DIW Wochenbericht 7-8.	2019
Johannes Geyer, Peter Haan, Anna Hammerschmid, Clara Welteke (2019): Erhöhung des Renteneintrittsalters für Frauen: Mehr Beschäftigung, aber höheres sozialpolitisches Risiko, DIW Wochenbericht 14.	2019
Anna Hammerschmid und Carla Rowold (2019): Gender Pension Gaps sind in vielen europäischen Ländern ein Problem, Beitrag im DIW Wochenbericht 18. English Version: Gender pension gaps - a problem in many European countries, Beitrag im DIW Weekly Report 16/17/18/2019.	2019
Crawford R., Stoye G, Zaranko B. (2018). *IFS Observation: Cuts to spending on social care and the use of NHS Accident and Emergency services in England.* London: Institute for Fiscal Studies. https://ifs.org.uk/publications/13071	2018
Stoye G. (2017). *How will the receipt of social care change in future?.* London: Institute for Fiscal Studies. https://ifs.org.uk/publications/8892	2017
Cribb, J., Emmerson C. (2019). *Retiring at 65 no more? The increase in the state pension age to 66 for men and women.* London: Institute for Fiscal Studies. https://ifs.org.uk/publications/13949	2019
Bingley and Pedersen published a non-technical version of the first Danish publication for a broader public as Paul Bingley and Peder J. Pedersen (2016) "Pensionsalder, arbejdsevne og helbred" in Samfundsøkonomen, 2016:2, pages 9-15.	

8   Impact

8.1   Scientific impact

Describe the nature of the major scientific impacts of your results, i.e. the addition to the current state of knowledge (new data, new methods, new perspective, confirmation of theses, first transnational approach). Describe to what extent the scientific impact has been promoted through the international and comparative perspective of the various members of the consortium (max. 2 page).

As this is an analytical project, the results and work will be of interest to academics. We have produced academic papers targeted towards top international peer-reviewed journals. These papers have been published as Working Papers in the established PSE, IFS, DIW and SFI series, freely available for download, before being published by journals, for example Journal of Health economics or Labour Economics. Further journal articles are expected to follow. These papers have been presented widely at seminars and conferences both within our own institutions and elsewhere in Europe and the US. We have also exploited extensive networks such as the NBER, the CEPR, the IZA to discuss results. This will ensure that leading academics from a range of disciplines hear about our work and help improve its quality and can use our results as motivation and starting point for new research projects.

8.2   Societal impact

Describe the impact of the results on different target groups (e.g., health professionals, policy makers, patients), including the pathway to reaching this impact. Describe how the results have been or will

be used, disseminated and implemented by each target group, including beyond the lifetime of the project (max. 2 page).

The target audience for the dissemination of this project is diverse and therefore requires multiple approaches such that it has the maximum impact. Dissemination in domestic policy circles is a priority for all members of the consortium. All have exceptionally strong links to policy makers and social partners. We continue to use these links to ensure the findings of the research to inform ongoing and future public policy decisions.

For example, the IPP has used strong links with policymakers through its presence in independent advisory boards, e.g. the *Comité de suivi des retraites* (French pension watchdog) for Prof. Blanchet and the *Conseil d'analyse économique* (Council of Economic Analysis, advising the Prime Minister) for Dr. Bozio. Specific results of the Longlives project have been presented at the French ministry of health at the Drees (the unit in charge of statistical analysis) as well as in front of civil society circles including CEOs of insurance companies and non-for profit foundations supporting improvement of care of elderly.

IFS has strong links with policymakers, particularly at the Bank of England, Department for Work and Pensions (DWP), Department of Health (DH) and HM Treasury (HMT). The findings of our research have been presented to civil servants at the Department for Work and Pensions, the Department of Health and Social Care (DHSC) and HM Treasury. We have also contributed to the development of models both inside (DHSC) and outside (Health Foundation) of Government, and continue to discuss with DHSC the best way to model substitution between different types of care. We expect that our research will continue to inform policymakers and the wider public debate: not least as this is an active area of policymaking.

DIW Berlin advises policy makers in all ministries on a regular basis and has contributed to several policy evaluations with a strong focus on demographic change. In Denmark, DREAM uniquely provides medium and long term aggregate and distributional projections about demographics, education, household formation and household income to the Finance Ministry, the National Bank, Statistics Denmark, labour market institutions, and other NGO's. Research leaders at the multidisciplinary SFI are currently part of the Danish Pension Commission and the Employment Ministry working group for a better work life for seniors. We have produced policy-friendly briefing notes (in national languages as well as in English) with the key results in a non-technical way and target key stakeholders. In addition, our research institutes all have significant experience exploiting media opportunities and we will make full use of social media such as twitter, and will continue to make ourselves available for interviews. This will ensure that the findings of our research reach the general public.

9 Data Management and Data Sharing

Describe how this project contributes to sustainable data and research infrastructures; including a description of the sustainability of the research results within the wider research community. Please take into account the FAIR data Principles and indicate if your project (partly) contributes to these principles (max. 1 page).

Does not apply

Publicly-funded research data are valuable, long-term resources that, where practical, should be made available for secondary scientific research. Some funders expect that all data created or repurposed during the lifetime of a grant will be made available for re-use or archiving, recognising that some research data are more sensitive than others. If you have created or repurposed data as part of your project and it has been made available for re-use or archiving, please use the table below to indicate where it can be accessed and who it can be accessed by.

Dataset	Available for	Available at
Name of the dataset	Who can access the data?	Link to the dataset (if applicable)

10 Collaboration

10.1 Collaboration within the project

Are the academic collaborations within this project new or were these existing collaborations? How did you involve the different academic partners in the project?

Collaboration was within consortium

10.2 Collaboration with Stakeholders

Are the collaborations with stakeholders within this project new or were these existing collaborations? How did you involve the different stakeholders in the project?

Collaboration was mainly with existing stakeholders, e.g. pension insurance, via formal presentations (see above) and informal meetings with policy makers.

10.3 Collaboration with Patients and the Public

How did you involve patients and/or the public in the project? Were patients and the public actively involved in research design and delivery? Did decisions about the research include the patient and public perspective Note, when we refer to patient and public involvement in research we mean research being carried out with and by patients and the public, not to, for or about them (see, www.invo.org.uk). We do not mean patient and public engagement, where research information is presented or disseminated to patients and the public.

Does not apply

10.4 Collaboration with other JPI MYBL projects

Please describe any connections, bilateral meetings, knowledge exchange etc. between your project and other JTC projects funded by the JPI MYBL.

Several meetings with the other projects -see above

10.5 Collaboration with other European/national projects

Please describe actual and intended collaborations with other European/national projects (e.g. collaboration with related projects not funded by JPI MYBL).

We continue to collaborate in several projects among them a new JPI MYBL on pension, health, long-term care and inequality PENSINQ.

10.6 Added value of the International Consortium

Please describe the added value of working as an international consortium, compared to project partners each working separately at the national level. In what way and to what extent did the international cooperation in the project help to broaden your perspective on demographic change in Europe and beyond?

The cross country comparison was key to derive important results for national, see e.g. WP1

11 What can we do for you?

11.1 What can we do for you?

What can we do to help you to amplify your message? How can we help you to connect to the right people/stakeholders (e.g. to share your research results)? How can we help you to add value to your results?

11.2 Feedback for JPI MYBL

Please provide any feedback arising from this project so we can improve our procedure for any future joint calls.