27th Colloquium on Pensions and Retirement Research

2-3 DECEMBER 2019 | UNSW SYDNEY

NEW DEVELOPMENTS IN PENSIONS

ARC CENTRE OF EXCELLENCE IN POPULATION AGEING RESEARCH

School of Risk & Actuarial Studies

SCAN ME

cepar.edu.au/news-events/events/27th-colloquium-pensions-and-retirement-research
Jointly hosted by the ARC Centre of Excellence in Population Ageing Research (CEPAR) and the UNSW School of Risk & Actuarial Studies

ABOUT CEPAR

The ARC Centre of Excellence in Population Ageing Research (CEPAR) is a unique collaboration between academia, government and industry, committed to delivering solutions to one of the major economic and social challenges of the 21st century.

'Population ageing is an issue of paramount importance to all; this is truly the ageing century. The research we undertake has the potential to transform Australia's future. It supports a vision of Australia where economic growth is robust, the mature labour market is buoyant, health and social services are effectively and sustainably delivered, cognitive ageing is slowed as a result of meaningful work and social participation, outcomes for women in the workplace and in retirement are improved, and individuals are effectively guided in decision making and financial risk management.'

Professor John Piggott, CEPAR Centre Director

THE ONLY RESEARCH CENTRE OF ITS KIND

CEPAR's strength lies in its integrated approach. Its high level expertise draws from Actuarial Studies, Demography, Economics, Epidemiology, Psychology and Sociology.

Based at the University of New South Wales Sydney, the Centre has nodes at The Australian National University, The University of Melbourne, The University of Sydney and The University of Western Australia and partnerships with government, industry and international organisations.

Funded primarily by an initial seven-year grant from the Australian Research Council, with generous support from the collaborating universities and partner organisations, the Centre was established in March 2011 to undertake high impact independent multidisciplinary research and build research capacity in the field of population ageing.

Renewed funding awarded for an additional seven-year term from 2017-2023 will support an exciting new research program which will deliver comprehensive outcomes with the potential to secure Australia's future as a well-informed nation with world-best policy and practice for an ageing demographic.

Enquiries cepar@unsw.edu.au | +61 9931 9202 | cepar.edu.au

WELCOME FROM THE COLLOQUIUM CO-CHAIRS

The Colloquium on Pensions and Retirement Research is a unique annual event, bringing together academics, government and industry to discuss the latest research on pensions, superannuation and retirement. It is co-hosted by CEPAR and the UNSW School of Risk & Actuarial Studies.

This year's Colloquium theme is **'New Developments in Pensions and Retirement'**, and features presentations on retirement benefits, demand and design; investments; engagement and behavioural economics; health and aged care costs; international trends, and more.

We hope you enjoy the Colloquium.

Professor Hazel Bateman

CEPAR Deputy Director

Hazel Bateman is Deputy Director of the ARC Centre of Excellence in Population Ageing Research (CEPAR) and a Professor of Economics in the UNSW School of Risk and Actuarial Studies.

Hazel Bateman researches consumer financial decision making especially as it relates to retirement accumulation and decumulation. In particular, her work focuses on interventions to facilitate better retirement financial decisions; retirement product design in Australia and China; and the taxation and regulation of pension and superannuation funds.

She is the author of over 70 peer-reviewed publications and book chapters and has been Chief Investigator on over a dozen ARC funded projects. Hazel has consulted on retirement income issues to international organisations including the OECD, the World Bank, the Social Insurance Administration (China) and the Korean Institute of Health and Social Affairs. She is a member of Netspar's Scientific Council, the Steering Committee of the Melbourne Mercer Global Pension Index and the China Ageing Finance Forum. She is an editor of the Journal of Pension Economics and Finance and inaugural President of the International Pension Research Association (IPRA).

Scientia Professor John Piggott

CEPAR Director

John Piggott is CEPAR Director and Scientia Professor of Economics in the UNSW Business School.

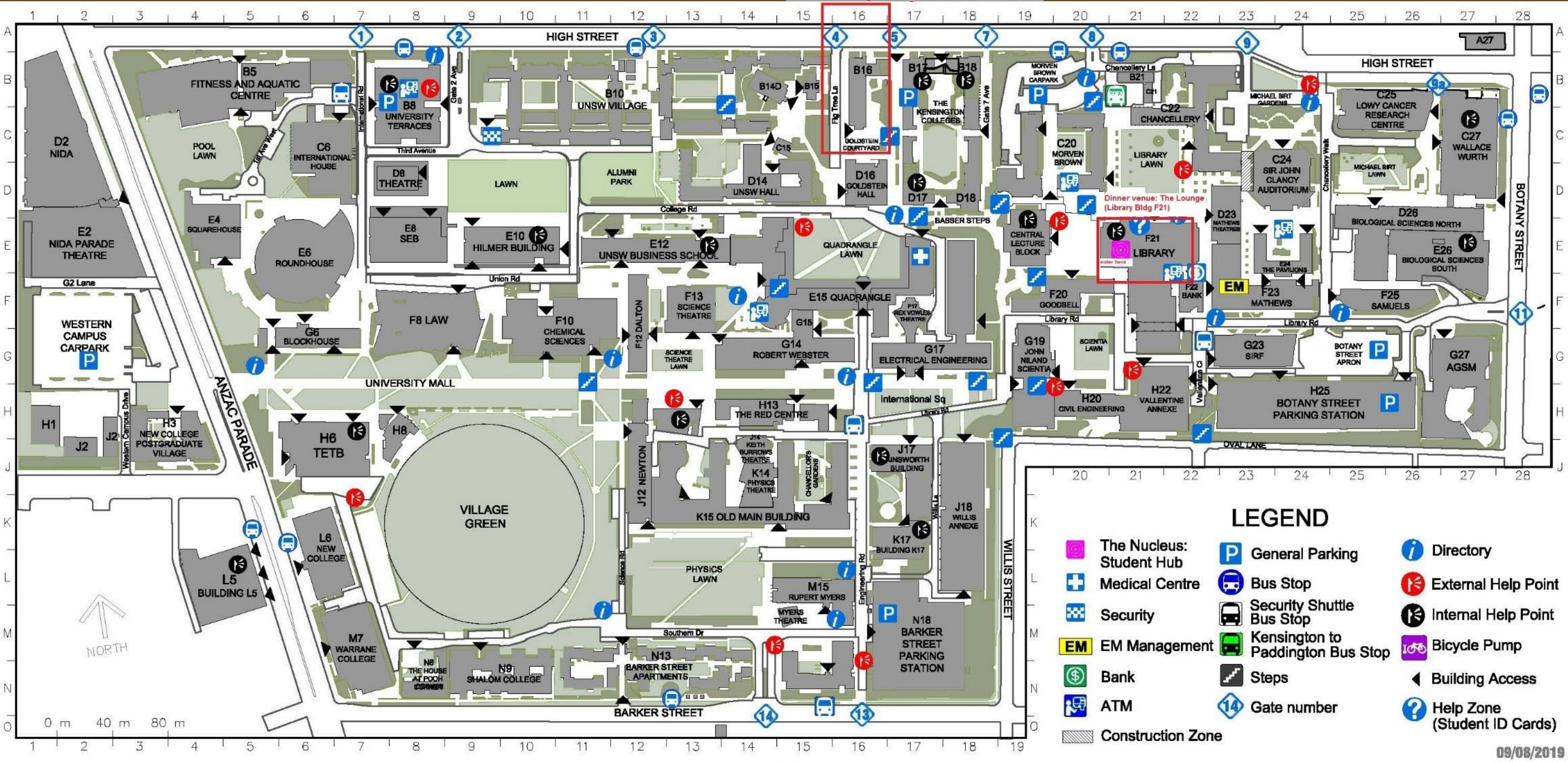
John Piggott has a long-standing interest in the economics of population ageing, retirement and pension economics and finance. His publications include more than 100 academic journal articles and chapters in books. He has also co-authored two books, both published by Cambridge University Press.

He was a member of the Henry Tax Review Panel and served for several years on the Ministerial Superannuation Advisory Committee. Internationally, he has been a consultant to several foreign governments on pension issues, including Russia and Indonesia. In 2007 he was appointed Visiting Professor, Zhejiang University, China, and from 2008-2010 was Visiting Scholar with the Department of Insurance and Risk Management, Wharton School of Business, University of Pennsylvania. In 2018/2019, John Piggott was appointed as a co-chair of the Think20 (T20) Task Force on Aging Population during Japan's G20 Presidency, helping G20 nations decide how they will cope with ageing populations.

UNSW SYDNEY

Kensington Campus

Colloquium venue: Colombo Theatres (B16)
Access via High Street, Gate 4



Buildings

- AGSM G27
- Ainsworth Building J17
- Biological Sciences North D26
- Biological Sciences South E26
- Blockhouse G6
- Building D10 D10
- Building L5, 223 Anzac Parade L5
- Chancellery C22
- Chemical Sciences F10
- Civil Engineering H20
- Colombo House B16
- Computer Science K17
- Dalton F12
- Dangerous Goods Store F17A
- Electrical Engineering G17
- Golf House, 38 Botany Street A27
- Hilmer Building E10
- John Goodsell F20
- John Niland Scientia G19
- Law F8
- Library F21
- Lowy Cancer Research Centre C25
- Mathews F23
- Mathews Arcade E24a
- Morven Brown C20
- Newton J12
- NIDA D2
- Old Main K15
- Pavilions E24
- Quadrangle E15
- Red Centre H13
- Robert Webster G14
- Roundhouse @ Unibar E6
- Rupert Myers M15
- Sam Cracknell Pavilion H8
- Samuels F25
- Science and Engineering E8
- SIRF G23
- Squarehouse E4
- Tyree Energy Technologies H6
- Vallentine Annexe H22
- Wallace Wurth C27
- Willis Annexe J18
- University Regiment H1
- UNSW Business School E12

Student Accommodation

- Barker Apartments N13
- Basser College D17
- Colombo House B16
- Creston College A25
- Fig Tree Hall B18
- Goldstein College B17
- Goldstein Hall D16
- International House C6
- New College L6
- New College Postgrad. Village H3
- Philip Baxter College D18
- Shalom College N9
- Warrane College M7
- University Terraces B8
- UNSW Hall D14
- UNSW Village B10
- UNSW Residential Communities B17

Faculty Offices

- Arts and Social Sciences C20
- Built Environment H13
- Engineering K17
- Law F8
- Medicine C27
- Science F12
- UNSW Business School E12

Theatres

- AGSM Theatres G27
- Allens F8
- Central Lecture Block E19
- Chemical Sciences Theatres F10
- Civil Engineering (Room G1) H20
- Clancy Auditorium C24
- Colombo Theatres B16
- Fig Tree Theatre B14d
- Gonski Levy Theatre F8
- Io Myers Theatre One D8
- Keith Burrows Theatre J14
- Law Theatres F8
- Macauley Theatre E15
- Mathews Theatres D23
- New South Global Theatre G14
- Old Main Theatres (Room 112) K15
- Parade Theatres E2
- Physics Theatre K14
- Red Centre Theatre H13
- Rex Vowels Theatre F17
- Ritchie Theatre G19
- Rupert Myers Theatre M15
- Webster Theatres G15
- Science Theatre F13

Services

- Accommodation Services C18
- Alumni Association C22
- Arc @ UNSW D17
- Careers and Employment Office E15
- Chaplains E4
- Co-op program & Scholarship F21
- Counselling Service E15
- Educational Technology Services F20
- Equity and Disability Unit F20
- Estate Management F23
- Foundation Studies L5
- Freehills Law Library F8
- Future Students Office H13
- Graduate Research School M15
- Help Zone (Student ID Cards) F21
- Human Resources C22
- Institute of Languages L5
- IT Service Desk F21
- Kingsford Legal Centre F8
- Library F21
- Lifestyle Clinic A27
- Mail Centre F23
- Marketing Development C22
- New South Innovations M15
- Nura Gili - Balnaves Place J17
- Optometry Clinic M15
- Physiotherapy Clinic B8
- Post Office F22
- Print Centre F23
- PVC Education F21
- Religious Centre E4
- Research Services M15
- Security B10
- Sports Association H8
- Study Abroad and Exchange F20
- Squash Courts B7
- Swimming Pool B4
- The Learning Centre C22
- Unisuper B8
- University Health Services E15
- UNSW Admissions F21
- UNSW Bookshop E15
- UNSW International Student Centre H13
- UNSW Residential Communities B17
- UNSW Scholarships F21
- UNSW Fitness and Aquatic Centre B5
- The Nucleus: Student Hub F21
- Venues and Events F23

Childcare Centres

- Kangas House, 52 Barker St O14
- House at Pooh Corner N8
- Tigger's Honeypot, 22 Botany St BS22
- Owl's House, 9 Kennedy St KS9

GENERAL INFORMATION

REGISTRATION DESK

Registration desk opening times are:

Monday, 2 December: 8:30 – 8:50am

Tuesday, 3 December: 8:30 – 9:00am

INTERNET ACCESS

Complimentary Wi-Fi access will be available during the conference. Connecting is easy. Please unlock your device and navigate to Settings; Wi-Fi; select “UNSW Guest” network; and then enter your name and a valid e-mail address. You will then receive an e-mail with a Wi-Fi activation link and are ready to log on to the UNSW Guest Wi-Fi network. Visitors are provided with eight hours of continuous access. After that time, you can repeat the registration process to regain internet access.

Please note: If you are using a work issued laptop or device, please be aware that the firewall setup may restrict you accessing Wi-Fi. Personal devices seem to encounter fewer issues. All activity on the wireless network is monitored and users are expected to abide by all relevant UNSW policies. For further information or support, please contact the IT Service Centre at (02)9385 1333 or ITServiceCentre@unsw.edu.au.

PROGRAM & WEBSITE

The electronic program is available via any web/mobile browser:

http://cepar.edu.au/news-events/events/27th-colloquium-pensions-and-retirement-research

Use the hashtag #ceparcolloquium to tweet photos and messages relating to this conference on social media. Please tag us – @CEPAR_research – in your tweets.

SCAN ME

INSTRUCTIONS FOR ORAL PRESENTATIONS

Please check the program well in advance for the date and time of your presentation. Presenters are asked to:

- arrive at their session venue 10 minutes before the start of the session.
- check or upload their PowerPoint/PDF slides onto the device in the room for presentation and make sure that their file runs appropriately.

MEDIA

Media may attend sessions and may ask questions provided they identify themselves and their organisation.

TRANSPORT & PARKING

The **UNSW Kensington campus** is located in Sydney's eastern suburbs, approximately 6km from the Sydney CBD, and 2km to Coogee, accessible via public transport from transportation hubs located throughout Sydney. As parking is limited in and around campus, we encourage to use public transport or travel by taxi to UNSW. Find further information on how to get to the campus on the UNSW website.

To travel on trains, buses and ferry services in NSW, you will need an **Opal card** or contactless-enabled credit or debit card. For further information visit opal.com.au. Opal cards can be purchased at the following retailers on campus:

- WH Smith – Newsagent, Shop 4 and 5, Morven Brown Building (C20)
- WH Smith – Newsagent, Shop G035C, The Quadrangle (E15)
- UNSW Post Office, Library Walk, Mathews Building (F22)
- New College Village Convenience Store (H3), New College Postgrad Village, Anzac Pde

Parking on the UNSW campus and surrounding area is restricted and very limited. Paid parking is available on upper levels of the UNSW car parks.

UNSW is served by a number of **taxi** companies, with High St and Anzac Pde attracting the greatest number of passing taxis. If you'd like to book ahead, try Ingogo or Taxi Combined:

- **ingogo.com.au** 1300 008 294
- **taxicombined.com.au** 13 33 00

SAFETY & SECURITY

Please do not leave your bags or suitcases unattended at any times.

If you need emergency assistance at any time, contact **Campus Security**. They will coordinate any emergency response 24/7:

- For **emergencies** phone: 9385 6666
- For **general enquiries** phone: 9385 6000

If you require on-site assistance at the conference, please contact Silke Weiss on 9385 7359 or s.weiss@unsw.edu.au.

PROGRAM: MONDAY, 2 DECEMBER

8:30 – 8:50	Arrival and Registration
8:50 – 9:00	**WELCOME AND OPENING REMARKS** John Piggott, Director ARC Centre of Excellence in Population Ageing Research (CEPAR), Scientia Professor of Economics, UNSW Sydney
9:00 – 10:30	**SESSION 1: PLENARY** *Chair: John Piggott (CEPAR, UNSW Sydney)*
	Australia's Ageing Population - Understanding the Fiscal Impacts over the Next Decade Linda Ward (Parliamentary Budget Office)
	Impact of Defaults in Retirement Saving Plans: Public Employee Plans Robert Clark (North Carolina State University, USA)
	Individualization and De-risking Yves Stevens (KU Leuven, Belgium)
10:30 –11:00	Morning Tea
11:00 – 13:00	**SESSION 2**

Session 2A	Session 2B	Session 2C
Session 2A **Retirement Income Products** *Chair: Héloïse Labit Hardy (CEPAR, UNSW)*	**Session 2B** **Retirement Income Adequacy** *Chair: George Kudrna (CEPAR, UNSW)*	**Session 2C** **Investments I** *Chair: Akshay Shanker (UNSW, CEPAR)*
What Features of a Retirement Income Product do Seniors Value?: Evidence from a Discrete Choice Experiment Barbara Chambers (Monash University)	Treasury's Model of Australian Retirement Incomes and Assets (MARIA) Katarina Trinh (Treasury)	Utility Functions and Design of Retirement Option Menus Geoff Warren (ANU)
An Experimental Study of the Demand for Hybrid Longevity and Health Insurance Products Cheng Wan (UNSW, CEPAR)	Australian Retirement Income Adequacy – A Distributional Approach to Lifecycle Impacts of the Superannuation Guarantee Phil Gallagher PSM (Industry Super)	How Sub-Optimal are Age-Based Life-Cycle Investment Products? Gaurav Khemka (ANU)
Model Risk for Pricing Guaranteed Lifetime Withdrawal Benefits Xiao Xu (UNSW, CEPAR)	The Impact of Financial Literacy on the Consumption and Investment Decisions of Older New Zealanders Jelita Noviarini (Otago University, New Zealand)	Lifecycle Design – To and Through Retirement Richard Dunn (Rice Warner)
A Structured Investigation of Retirement Income Products Luke Zhou (UNSW, CEPAR)	Why do Low Superannuation Balances Persist? Bruce Bastian (Industry Super)	Growth / Defensive Asset Categorisation in Superannuation David Bell (UNSW)

13:00 – 14:00	Lunch
14:00 – 15:30	**SESSION 3: PLENARY** *Chair: Katja Hanewald (UNSW, CEPAR)*
	Health-linked Life Annuities: Combining Protection and Retirement Income Ermanno Pitacco (University of Trieste, Italy; CEPAR)
	Program Substitution – Old Age Pension or Disability Benefit Erik Harnæs (Frisch Centre of Economic Research, Norway; CEPAR)
	Housing and Retirement Brendan Coates (Grattan Institute)
15:30 – 16:00	Afternoon Tea
16:00 – 18:00	**SESSION 4**

Session 4A	Session 4B	Session 4C
Session 4A **Drawdown Strategies & Behaviour** ***Chair: Inka Eberhardt (CEPAR, UNSW)***	**Session 4B** **Retirement Systems** ***Chair: Mengyi Xu (CEPAR, UNSW)***	**Session 4C** **Investments II** ***Chair: David Bell (UNSW)***
Latent Behavioural Groups in Phased Withdrawal Retirement Income Products Igor Balnozan (UNSW)	Intergenerational Impacts: The Sustainability of New Zealand Superannuation Susan St. John (University of Auckland, New Zealand)	Fund Manager Risk and Return Projections: Are they Realistic? Kevin Davis (University of Melbourne)
Behavioural Responses to High-Low, Low-High and Flat-Rate Annuities after Retirement: A Stated Preference Analysis Johan Bonekamp (Tilburg University, The Netherlands)	Exploring Merged Means Test Options Andrew Podger (ANU)	The Utility of Reserving in Retirement Investing Paddy McCrudden (Magellan Financial Group)
Spend your Decennial Age: A Rule of Thumb for Retirement Shang Wu (First State Super, CEPAR) and Rein Van Rooyen (QSuper)	Automatic Enrolment in an European Perspective Emma Suzanne van Aggelen (KU Leuven, Belgium)	The Exercise of Investment Power by Superannuation Fund Trustees Robert Annabel (UNSW)
Drawing Down or Draining the Well: What is an Optimal Strategy for Consumers Ross Clare (ASFA)	Why is Inequality Higher Among the Old? Evidence from China Katja Hanewald (UNSW, CEPAR)	Financial Engineering: A New Longevity Bond to Manage Individual Longevity Risk Yuxin Zhou (UNSW, CEPAR)

18:30 – 21:30	**CONFERENCE DINNER** *The Lounge* *(Level 11, UNSW Library building, Library Walk - entry from rear of building, UNSW Kensington campus)*

3 DECEMBER 2019: PROGRAM AT A GLANCE

COLOMBO THEATRES, UNSW Sydney

PROGRAM: TUESDAY, 3 DECEMBER

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<tr><td>8:30 – 9:00</td><td colspan="3">Arrival and Registration</td></tr>
<tr><td>9:00 – 10:30</td><td colspan="3">SESSION 5: PANEL– Retirement Income Review
Chair: Marc de Cure, Advisory Board Chair, CEPAR; Adjunct Professor and Advisory Board member, UNSW Business School; Independent Non-Executive Director, Zurich Financial Services Australia

• Deborah Ralston, Professorial Fellow, Monash University
• Geoff Lloyd, CEO, MLC Wealth
• Robbie Campo, Group Executive - Brand, Advocacy, Marketing and Product, Cbus Super Fund
• Ian Yates AM, CEO, COTA Australia</td></tr>
<tr><td>10:30 –11:00</td><td colspan="3">Morning Tea</td></tr>
<tr><td>11:00 – 13:00</td><td colspan="3">SESSION 6</td></tr>
<tr><td></td><td>Session 6A
Retirement Incomes
Chair: Andrés Villegas (CEPAR, UNSW)</td><td>Session 6B
Health and Aged Care
Chair: Bei Lu (CEPAR, UNSW)</td><td>Session 6C
Behaviour and Engagement
Chair: Sophie Yan (CEPAR, UNSW)</td></tr>
<tr><td></td><td>Public Annuities: Buyers’ Behaviour and Policy Design
Sau-Him Paul Lau (University of Hong Kong)</td><td>Ageing and Caring – The Socioeconomic Contributions and Implications of Caring when Aged 65 Years or Older
Lukas Hofstätter (Carers NSW; Department of Sociology, Macquarie University)</td><td>A Fistful of Dollars: Financial Incentives Improve Retirement Information Search
Inka Eberhardt (UNSW, CEPAR)</td></tr>
<tr><td></td><td>Longevity Risk: Retirement Product Innovation and Risk Management Strategies
Doreen Kabuche (UNSW, CEPAR)</td><td>Retirement Planning with Systematic Disability and Mortality Risk
Mengyi Xu (UNSW, CEPAR)</td><td>Life Insurance: Decision States, Financial Literacy and the Role of Personal Values
Paul Gerrans (UWA)</td></tr>
<tr><td></td><td>Tax Progressivity in Australia: A Dynamic General Equilibrium Analysis
Nabeeh Zakariyya (ANU)</td><td>Friends, Family and Framing: A Cross-country Study of Subjective Survival Expectations
Megan Gu (Macquarie University)</td><td>Pensions and Participation: Evidence from WWII Veterans in Australia
David Rodgers (UNSW, CEPAR)</td></tr>
<tr><td></td><td>UBER Retirement
Paul M. Secunda (Marquette University, USA)</td><td>Long-term Care Insurance Financing using Home Equity Release: Evidence from an Experimental Study
Tin Long Ho (CEPAR, UNSW)</td><td>Can a Non-Linear Taper Rate on the Age Pension be Welfare Improving?
Daniel Wheadon (UNSW, CEPAR)</td></tr>
<tr><td>13:00 – 14:00</td><td colspan="3">Lunch</td></tr>
<tr><td>14:00 – 15:30</td><td colspan="3">SESSION 7: PLENARY
Chair: Hazel Bateman, CEPAR, UNSW Sydney
High-Performance DC Pension Plans: Design, Technology and the Role of Public Policy
Gordon Clark (Oxford University, UK)

Defaults, Disclosures, Advice and Calculators: One size does not fit all
Susan Thorp (The University of Sydney; CEPAR)

Longevity Products in Australia
David Knox, Emily Barlow (Mercer)</td></tr>
<tr><td>15:30 – 15:40</td><td colspan="3">CLOSING REMARKS</td></tr>
</table>

Notes:

Abstracts and speaker bios

PROGRAM: MONDAY, 2 DECEMBER

8:30 – 8:50	*Arrival and Registration*
8:50 – 9:00	**WELCOME AND OPENING REMARKS** John Piggott, Director ARC Centre of Excellence in Population Ageing Research (CEPAR), Scientia Professor of Economics, UNSW Sydney
9:00 – 10:30	**SESSION 1: PLENARY** ***Chair: John Piggott (CEPAR, UNSW Sydney)***

Australia's Ageing Population - Understanding the Fiscal Impacts over the Next Decade

Linda Ward (Parliamentary Budget Office)

Abstract: This report builds on the 2015 Intergenerational Report by providing a detailed analysis of the impacts of an ageing population on revenue and spending over the next decade.
The effects of ageing will be felt more over the coming decade than in the past due to the impact of the baby boomer generation retiring.
This change has already begun to detract from economic growth, after decades of providing a boost to growth.
Ageing will reduce tax revenue and add to spending pressures…
Since 2011 – when the first of the baby boomer generation turned 65 – the share of the population of retirement age has increased significantly and the share of the population of prime working age has begun to fall.
This flows through to the budget in the form of a reduction in revenue, due to lower labour force participation, and an increase in spending, reflecting greater demand for government programs that support older Australians.
Over the next decade, the ageing population is projected to subtract 0.4 percentage points from the annual real growth in revenue and add 0.3 percentage points to the annual real growth in spending.
In real dollar terms, this equates to an annual cost to the budget of around $36 billion by 2028–29. This is larger than the projected cost of Medicare in that same year.
…with the budget impact coming in waves.
The workforce participation and Age Pension impacts of the baby boomer generation reaching retirement age are already evident and are likely to peak during the next decade.
The impacts on health and aged care spending will increase more gradually and peak later, as baby boomers move into their 70s and 80s. Demand for health services typically starts to increase when individuals are in their 70s, and demand for aged care services when they are in their 80s. Expectations of Australians around increases in the quality of health and aged care services could further increase these costs.
However, ageing is only one of many drivers of the future budget position.
The influence of ageing should be considered in the context of the overall budget position.
Ageing is estimated to detract around $20 billion in real terms from revenue in 2028–29, but population and income growth are expected to increase revenue by around $187 billion (resulting in a net increase in 2028–29 in the order of $166 billion).
Similarly, while ageing is projected to add around $16 billion in real terms to Commonwealth spending in 2028–29, broader factors such as population growth and indexation of payments are expected to increase spending by around $104 billion (resulting in a total increase in 2028–29 in the order of $119 billion).

Linda Ward is the First Assistant Parliamentary Budget Officer responsible for leading the Fiscal Policy Analysis Division of the Parliamentary Budget Office. A key role of her division is conducting and publishing analysis that enhances public understanding of the budget and fiscal policy settings. Prior to this, she was a senior executive at the Commonwealth Treasury, working in the Individuals and Indirect Tax Division of Revenue Group and International Policy and Engagement Division of Macroeconomic Group. Linda began her public service career at the Department of the Prime Minister and Cabinet where she worked for several years in a range of economic policy roles. She has also worked as an economic adviser to a senior Cabinet minister and as a senior macroeconomist at BHP Billiton's Singapore Office. Linda holds a Graduate Certificate in Public Policy and Finance from the University of Canberra, Master of Public Policy degree from Japan's National Institute for Policy Studies (GRIPS), and a Bachelor of Economics (Honours) from the University of Sydney. Linda is Deputy Chair of the Women in Economics Network committee (Canberra).

Impact of Defaults in Retirement Saving Plans: Public Employee Plans

Robert Clark (North Carolina State University, USA)

Abstract: This study examines the impact of the adoption automatic enrollment provisions by the state of South Dakota for its supplemental retirement saving plan (SRP). In South Dakota, state and local government employees, including teachers, are also covered by a defined benefit pension plan and by Social Security. Thus, career public employees in South Dakota can expect a life time annuity from these two programs of around 75 percent of their final salary.   Prior to the introduction of automatic enrollment, the proportion of newly hired employees who were contributing to the SRP was less than three percent in their first year of employment. After the introduction of automatic enrollment, over 90 percent of newly hired workers who were auto enrolled were participating in the plan. Significant differences compared to earlier studies of auto enrollment include: we are examining public employees who are also covered by a defined benefit retirement plan, prior to the introduction of auto enroll participation were extremely low, and these is no employer match to employee contributions to the SRP. Thus, the key question is whether auto enrollment has the same powerful impact on contributions to a retirement saving plan under these conditions.

Robert Clark is the Stephen Zelnak Professor of Economics and Management, Innovation, and Entrepreneurship, Poole College of Management, North Carolina State University. He is also a Research Associate with the NBER's Aging program. Professor Clark is a member of the Pension Research Council at the Wharton School of the University of Pennsylvania and is a fellow of the Employee Benefit Research Institute and the TIAA-CREF Institute. Clark earned a Ph.D. and masters in economics from Duke University and a B.A. from Millsaps College.In the past five years, Dr. Clark has organized four NBER conferences examining state and local pension and retiree health plans. These conferences have focused on the labor market effects of public retirement plans, the measurement of liabilities, and the impact of pension reforms across the country. Clark has conducted research examining retirement decisions, the choice between defined benefit and defined contribution plans, the impact of pension conversions to defined contribution and cash balance plans, and government regulation of pensions. In addition, Clark has been examining the role of supplementary retirement saving plans in the public sector. In other research, he has examined employer-provided financial literacy programs and how these workplace events affect retirement decisions. Another long standing interest has been the evolution of retirement systems in Japan and how population aging has affected the Japanese economy.

Individualization and De-risking

Yves Stevens (KU Leuven, Belgium)

Abstract: In this paper the individualization trend and some of the de-risking developments in the social and pension landscape anno 2019 are being described. A comparative overview analyses the evolutions in various countries
Apart from the well-known and often described shifts from DB to DC, the paper also looks into the details of existing DC contracts. Due to the low interest environment there is a tendency amongst pension providers to lower their contractual guarantees. Another trend is the increasing number

of European countries envisaging lump sums. Hereby the obvious consequence is that the longevity risk lies with the individual.
Other de-risking elements include:

- the cutting of occupational pension rights in some EU member states (mainly eastern European countries) whereby individual savings (so-called third pillar products) become more important;
- the lowering of indexed annuities whereby the index mechanisms are no longer lead by collective investment strategies;
- the calculation of supplementary pension on "average wages" instead of "last wages" whereby the increasing number of "broken careers" (instead of lifetime employment) leads to the need for higher private savings.

These various worldwide de-risking trends go hand in hand with the increased attention towards financial literacy. However recent research shows limits to financial literacy: some people remain incapable of taking the right decisions even if well informed (CAAP and PISA study). This new research on illiteracy opens the debate on the role of the government in old-age provision but also the debate on the responsibility of the individual.

Yves Stevens is Professor of Law at the University of Leuven where he is also the coordinator of the specialised pension law program and the director of the legal post-academic training programs. He is also an executive professor at the Antwerp management School (Financial Planning). Since October 2018 he is a member of the European High Level Group on supplemnatry pensions. He is the Chair of the editorial board of the Belgian Journal for Social Security. He is a member of the Scientific Committees for the judgement of the academic quality of projects and researchers of:

- The FNRS: Fonds de la Recherche Scientifique (Scientific Research Fund) of the Wallonia-Brussels Federation (www.fnrs.be);
- The Netspar's Scientific Council (www.netspar.nl).

10:30 –11:00 *Morning Tea*

11:00 – 13:00 **SESSION 2A - Retirement Income Products**
Chair: Héloïse Labit Hardy (CEPAR, UNSW)

What Features of a Retirement Income Product do Seniors Value?: Evidence from a Discrete Choice Experiment

Barbara Chambers (Monash University)

Abstract: Financing the retirement incomes, health and aged care needs of an ageing and longer-lived population is a challenging policy question in many developed countries. The structure of the Australian population is changing, with fewer working people to support the retired population. In 2054-55 there will be just 2.7 Australians aged 15-64 for every Australian aged 65 or over (The Treasury 2015). Since the introduction of the superannuation guarantee in 1992, the Australian Government has considered mandatory superannuation savings, together with the Age Pension, an important retirement income source. While previously, government policy changes (such as the simpler super reform in 2007, superannuation reform in 2017) and academic research (Actuaries Institute 2015, Butt 2018, Dobrescu 2018) has focused on encouraging retirement savings. Today, as the baby boomer generation retires, the conversion of retirement savings to an adequate and sustainable retirement income is an important research area.
The Financial System Inquiry (Murray, Davis et al. 2014) recommended that defined contribution superannuation fund trustees pre-select a comprehensive income product for retirement for their members with the provision to opt-out. The Inquiry recommended that the product should provide a balance of flexibility, adequacy of income stream and risk protection. Yet, there is no guidance on how this balance can be achieved and no consistent framework on retirement income product features and requirements.
While retirees most likely value the Inquiry's recommended product features, there are other product features such as age care provision and the ability to leave a bequest that retirees potentially value. Moreover, retirees have heterogenous preferences and characteristics (Blake and Boardman 2014, Hamson 2014, Murray, Davis et al. 2014) and it is likely that several products rather than 'one size fits all' product will maximize retiree welfare. Therefore, good retirement

income product design needs to understand retiree preferences for product features and the heterogeneity in these preferences amongst retirees.

However, empirical research informing such a product design is sparse, with limited qualitative evidence from a survey (National Seniors Australia and Challenger 2013) and from face-to-face interviews and focus groups (Echalire, Duffield et al. 2015). The majority of studies have focused on the design aspects of longevity risk protecting annuities (Beshears, Choi et al. 2014, Shu, Zeithammer et al. 2016) with few studies focusing on the allocation of retirement wealth across retirement income products with different features (Bateman, Eckert et al. 2016, Wu, Bateman et al. 2017).

In a myriad of fields including marketing, engineering and information technology, an important part of the product design process is eliciting consumer preferences and user requirements. This demand side approach enhances both customer demand and consumer welfare (Gupta 1990, Brunetti 2000). Superannuation trustees are legally obliged to act in their members' best interests therefore default retirement income products need to incorporate members' preferences.

Revealed preference information is both unrepresentative and incomplete due to the thin and uncompetitive Australian annuity market and the non-existence of products providing some potential product features such as private long-term care insurance (Wu, Bateman et al. 2017).

Therefore, this study employs a stated preference approach to retirement income product design. It conducts a discrete choice experiment (DCE) to investigate consumer preferences for product features and the heterogeneity amongst preferences. Participants chose their best product and their worst product amongst three hypothetical retirement income products described by six features: income level, income stability, longevity risk protection, flexibility to withdraw lump sums, ability to make planned bequests and long-term care insurance. The number of feature levels ranged from 2 to 4. Account-based pensions are exposed to investment risk and longevity risk, however at least 94% of retiree superannuation assets are invested in them (Murray, Davis et al. 2014). The account-based pension is the DCE reference product and appeared in all 10 DCE choice profiles. It is the DCE reference product because it is currently the most popular Australian retirement income product and represents the status quo. Establishing a list of appropriate product features is an essential component of DCE experimental design and important to ensure valid results. The study employed three valid methodologies for determining and defining product features: a comprehensive literature review, an online expert opinion survey and four focus groups.

We surveyed an online panel of 847 seniors aged between 55 and 77 years old inclusive. Preliminary results indicate that retirement aged people value risk protection and prefer alternative retirement income product design to account-based pensions. Income level plays an important role in retirement income product decisions. Retirement aged people strongly value risk protection. They most favour retirement income products that offer full risk protection features and least favour products with no risk protection. However, the level of risk protection provided is less important than the provision of the risk protection feature. Seniors value both longevity risk protection and the ability to make planned bequests. However, when seniors chose between longevity protection and a planned bequest, longevity risk protection is significantly more important to them. Heterogeneity exists among the preferences for two levels of the income stability feature (stable income and moderate income changes with a minimum income guarantee) and long-term care insurance (extreme cost cover and regular cost cover). Preferences for the bequest feature differ between genders and among wealth groups.

Barbara Chambers is a lecturer at the Department of Banking and Finance, Monash Business School Monash University. She holds a PhD in Finance from the University of Utah, USA. Her research focuses on superannuation research including US multiemployer defined benefit pensions (MDBPs) and retirement income product design. Her sole-authored research paper finds that MDBP liability spillovers among US unionised public firms can be economically significant especially between pairs of firms in the transportation and aircraft industries and the food, retail and drug industries. Her research on retirement income product design consists of three academic papers. The first paper uses qualitative and quantitative research methods to explore the financial needs, preferences and behaviours of Australian retirees. It finds that retirees value leisure spending but do not plan for long term health and care needs. Retirees value risk protection but are unwilling to forgo potential investment gains. The divergence in the importance attached to various aspects of retirement, health, intergenerational planning and family dynamics suggests that retirement income products are not a 'one size fit all' product.

An Experimental Study of the Demand for Hybrid Longevity and Health Insurance Products

Cheng Wan (UNSW, CEPAR)

Abstract: We conduct an online experimental survey to elicit and analyse preferences for hybrid longevity and health insurance products in China. Participants are asked to advise the allocation of retirement savings across a portfolio of life annuities, critical illness insurance, long-term care insurance, and a savings account for vignette households which differ by wealth and health. Participants also report reasons for allocation choices, exposure to health risks, and retirement planning experience and we collect a comprehensive array of covariates including preferences, financial competence and demographic, and socio-economic factors. The study provides empirical evidence of the interaction between longevity and health insurance products, the impact of having access to hybrid annuity/critical illness/long-term care insurance products on the demand for longevity insurance, as well as insights about the preferences for product attributes. Overall, this research will inform the development of retirement products in China and other developing economies facing population ageing and incomplete insurance markets.

Cheng Wan is a 2nd year PhD candidate at the School of Risk and Actuarial Studies at UNSW Sydney and the ARC Centre of Excellence in Population Ageing Research (CEPAR). His research currently focuses on longevity risk management, the design of retirement insurance products, and behavioural economics in retirement planning. Cheng obtained a Master degree of Statistics from Katholieke Universiteit Leuven and a Bachelor degree of Mathematics from Wuhan University. Before starting his PhD in Sydney, Cheng worked as an Associate Statistician in Willis Towers Watson Research and Innovation Centre in Wuhan.

Model Risk for Pricing Guaranteed Lifetime Withdrawal Benefits

Xiao Xu (UNSW, CEPAR)

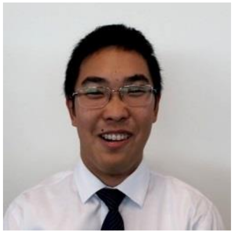
Abstract: Variable annuities with guaranteed lifetime withdrawal benefit (GLWB) options have become increasingly popular and dominated for retirement planning. The guarantees provide policyholders the right to withdraw a pre-specified amount from the fund for lifetime regardless of the investment performance. In addition to the downside market risk similar to fixed term GMWBs, insurers are exposed to systematic longevity risk with increasing life expectancy. In this paper, we investigate the pricing of GLWBs when the underlying fund dynamics evolve under various equity modelling assumptions, including the jump diffusion processes, stochastic volatility processes, Levy processes and time changed Levy processes. We employ the efficient COS and SWIFT methods, which are both Fourier-based numerical techniques by recovering the long-term probability densities to calculate the fair guarantee fees for GMWBs and GLWBs. The significant outperformance of SWIFT method is noted in terms of accuracy and computational time. With the forecast of a multi-factor stochastic mortality model, we evaluate the impact of cohort factors on the pricing of GLWBs. The numerical results are provided to illustrate the sensitivity of fair GLWB charges to various equity and longevity assumptions. Practitioners are advised to consider multiple models to reduce the extrapolation risk in product valuation.

Xiao Xu is currently a final year PhD candidate in Actuarial Studies in University of New South Wales, supervised by Professor Michael Sherris, Jonathan Ziveyi and Jennifer Alonso Garcia. Her research investigates the numerical methods and quantitative modelling aspect of variable annuities with guaranteed minimum benefits. Before committing full-time study, Xiao previously worked as a pricing actuary in New China Life Insurance Co. in Beijing for three years. She has qualified as a Fellow of the Society of Actuaries, Fellow of the Institute of Actuaries of Australia and Chartered Enterprise Risk Actuary. With experiences in risk management and investment analysis, Xiao has become a certified Financial Risk Manager and a Chartered Financial Analyst charterholder. She is a Certified Public Accountant licensed in Washington and a Chartered Accountant in Australia. Xiao obtained her bachelor's degree from University of Wisconsin-Madison and master's degree from the Johns Hopkins University. Her current research interests span the machine learning algorithms including artificial neural networks and deep learning.

A Structured Investigation of Retirement Income Products

Luke Zhou (UNSW, CEPAR)

Abstract: The Australian retirement income system is underdeveloped, with most retirees choosing an account-based pension, which does not manage longevity risk. Life annuities, on the other hand, provide full longevity risk protection but are expensive due to the presence of capital guarantees. There have also been various products developed which incorporate longevity risk pooling. The systematic comparison of these products is difficult due to the presence of differing guarantee and payout structures.
In this work, the differences in longevity and financial guarantee structures in various retirement income products are stated and quantified, through a modelling and evaluation framework respectively. First, a modelling framework is established to calculate the payout of the product for a given price. The payouts of each product are determined using a fund equation, which mimics the reserve of the provider. Loadings are added to the price to take into account the differing longevity guarantee structures. The payouts are then simulated using stochastic mortality rates and financial returns. Second, an evaluation framework is developed to gauge the desirability of the products. A lifetime utility framework is used to provide a ranking of each product under longevity and financial risk. Risk measures, such as those developed by the Australian Government Actuary, are also used to communicate the results to Government and industry.



Luke Zhou is an Honours candidate at the School of Risk and Actuarial Studies at CEPAR, UNSW. Luke has a keen interest in superannuation and retirement incomes and has recently tutored related subjects at UNSW.

11:00 – 13:00	**SESSION 2B - Retirement Income Adequacy** ***Chair: George Kudrna (CEPAR, UNSW)***

Treasury's Model of Australian Retirement Incomes and Assets (MARIA)

Katarina Trinh (Treasury)

Abstract: Treasury's long-term model of retirement incomes – the Model of Australian Retirement Incomes and Assets (MARIA) – is a dynamic microsimulation model which simulates individuals' life paths over a long time horizon. In doing so MARIA captures the heterogeneity of the Australian population over time and allows for detailed analysis of Australia's retirement income policies.
MARIA is currently used by the Treasury in analysis of medium term drivers of the retirement income system, informing internal policy thinking and the preparation of the federal budget.
This presentation provides background and some illustrative results of the MARIA model. Results illustrate how the superannuation system will change over the coming decades as people's assets grow and the system matures. The presentation also explores how retirement incomes will change as this maturing system interacts with the means tested Age Pension.

Katarina Trinh is a Policy Analyst from the Tax Analysis Division in the Treasury. She is currently working on retirement income modelling. Prior to this, she worked on numerous federal Budgets and has extensive experience on social policy reform. She was previously seconded to the Economic Outlook team at the Department of Industry, Innovation and Science. Katarina graduated from the University of New South Wales with a double degree in Commerce and Economics.

Australian Retirement Income Adequacy – A Distributional Approach to Lifecycle Impacts of the Superannuation Guarantee

Phil Gallagher PSM (Industry Super)

Abstract: The author and others have published research which significantly over-estimates the effects of a Superannuation Guarantee rise on working life income and on future retirement income adequacy. This paper quickly reviews the distributional errors in these analyses and the sets out to correct them.

Australians have been making compulsory superannuation contributions under the Superannuation Guarantee (SG) system since 1992. However, after more than two and half decades, superannuation balances for many Australians remain lower than expected and modelled.

One of the main reasons for the mismodelling of balances is that it does not allow for significant interruptions to careers and for early retirement. The paper proposes including career breaks which give a degree of correspondence between modelled and actual balances.

Recent debate around the increase in the SG rate to 12 per cent has been dominated by cameo analysis that purport to show that most Australian's are worse off from a rise in the SG rate. The paper says the distributional accuracy and measurement of relative standards of living can be improved by:

- Separate analysis of males, females and couples;
- Wage deflation of longer-term incomes to keep them in tune with community standards;
- Better modelling of the effect of the SG on wages;
- Better modelling of the effect of SG rises on the MTAWE index used for the pension base rate;
- Including personal tax and family tax benefit in the modelling of working life disposable income;
- Appropriate choice of private income source and drawdown rates in retirement; and
- The inclusion of non-superannuation assets and liabilities in retirement income calculations.

The paper demonstrates that 9.5% SG contributions produces inadequate replacement rates for many deciles of workers. Lifting the SG to 12% will considerably improve financial flexibility, spending in retirement and replacement rates for most workers. If there is a wage offset, the effect on working life disposable income is small.

Since 2015, **Phil Gallagher PSM** has worked for Industry Super Australia as their Specialist Retirement Policy Adviser. His work concentrates on the adequacy, fairness and cost-effectiveness of retirement income policies. One area of work has been the estimation of underpayment of employer superannuation. Phil specializes in modelling retirement incomes, the interaction of the tax and social security system, and population ageing. He has conducted and overseen quantitative analysis of Commonwealth social and economic policies since 1975. From 1993 to 2013 Phil was the Treasury Director of the Retirement Income Modelling Taskforce which costed and modelled superannuation, personal tax and income security policies. Phil also led the Treasury team which modelled the demographic, labour force, GDP and social expenditure impacts for the first three Intergenerational Reports (2002, 2007, and 2010).

Phil has published numerous papers, represented Australia at a variety of OECD and international economic conferences. He was awarded the Public Service Medal by the Governor General in 2004 for outstanding public service in the statistical modelling of retirement incomes and population ageing.

The Impact of Financial Literacy on the Consumption and Investment Decisions of Older New Zealanders

Jelita Noviarini (Otago University, New Zealand)

Abstract: This study investigates the effect of financial literacy on consumption or investment decisions of older New Zealanders. Using survey data from 1,261 New Zealanders aged 55 and

over, we measure financial literacy, debt, risk attitude, home ownership, and resource allocation choices. We use 1000Minds survey and apply fractional multinomial regression to investigate retirees' spending or investment preferences. The study finds that gender, age, education, income, and ethnicity have significant effects on financial literacy, debt, living arrangements, and risk aversion. Based on their resource allocation choices, given a windfall of $50,000, older New Zealanders prefer to put money in the bank, pay for home improvements, and make KiwiSaver deposits. Donations, investing in health, and increasing consumption were the least preferred alternatives. Those with a higher financial literacy score were less likely to choose donations, health investment, and debt repayment. The results identify some key differences in financial literacy based on gender, ethnicity, age and education.

Jelita Noviarini is a PhD candidate in the Department of Accountancy and Finance at University of Otago, New Zealand. She started her PhD in March 2016 and will be submitting her thesis in December 2019. Her first paper titled "Financial Adequacy in Retirement: A New Zealand Perspective" has been published by Housing Studies. Her second paper, "A Dynamic Approach to the Role of Housing Liquidation Options in Optimal Consumption among retirees" and her third, "The Impact of Financial literacy on the Consumption and Investment Decisions of older New Zealanders" are close to completion for journal submission. Jelita completed her master's degree in 2012 from the University of Leeds with Distinction. Her Master's thesis examined financial literacy and pension ownership in the United Kingdom. Jelita's other research interests include pensions, retirement wealth management, retirement well-being, and financial literacy in retirement.

Who Bears the Cost of the Superannuation Guarantee?

Bruce Bastian (Industry Super)

Abstract: Broad-based, mandated superannuation commenced in Australia with the introduction of the Superannuation Guarantee (SG) on 1 July 1992 at a rate of 4 per cent for large businesses and 3 per cent for small businesses. The SG rate was gradually increased to 9 per cent over the next 10 years and again from 9 per cent to 9.5 per cent in 2013 and 2014. Much of the recent debate around the continuation of the legislated increase in the SG rate to 12 per cent has focused on the impact on employee's take-home pay and lifetime incomes.

The conventional wisdom is that employees bear the cost of increases in social security contributions via lower net pay. However, costs can also be borne by employers through a reduction in profits, by consumers through increases in prices, or through lower equilibrium employment. Ultimately, who bears the cost will depend not only on competitive factors such as labour supply and demand elasticities and factor substitution, but also on institutional factors such as employment protection legislation and the degree of wage bargaining centralisation and unionisation.

The international empirical literature shows mixed results. Melguizo and González-Páramo (2012) surveyed the empirical literature on the incidence of labour taxes and social security contributions across most of the OECD countries and some Latin American economies and found a high variation in estimates of the elasticity of net wages to taxes. They apply meta-regression techniques to these estimates and find an elasticity of -0.70. That is, workers bear 70 per cent of an increase in taxes.

However, the current empirical evidence in Australia on the economic incidence of increases in the SG rate finds no relationship, while some influential commentators just assert either near or complete pass-through without estimating the impact.

In this paper we construct a panel dataset of Enterprise Bargaining Agreements from the Attorney-General's Department's Workplace Agreements Database from 1997 to 2018. The data contains information on the level of mandated employer contributions specified in the Agreements and the date the Agreements were certified. We use firms with mandated employer contributions above the legislated superannuation guarantee rate as a control group to estimate the impact on wages of increases in the superannuation guarantee. We also exploit differences in the timing between when Agreements were certified relative to announced changes in the superannuation guarantee schedule to provide additional evidence of the impact.

We find significantly less than complete pass-through of increases in the SG rate to wages growth.

Bruce Bastian is a senior analyst and modeller at Industry Super Australia (ISA). He specialises in modelling retirement incomes and the interactions between the tax, superannuation and social security systems.
Prior to joining ISA in July of this year, Bruce worked at the Australian Treasury for more the 10 years. From 2010 to 2017 Bruce worked as a senior adviser in the Retirement Income Modelling unit. In this capacity, he maintained and developed new microsimulation models to provide policy advice, analysis and Budget costings in the areas of superannuation and age pension policy, tax expenditures and measures of superannuation adequacy. In 2017, Bruce led the initial development of Treasury's Model of Retirement Incomes and Assets (MARIA) – a dynamic microsimulation model used to generate long-term superannuation and age pension projections. From 2018 to 2019, Bruce led the development of the ATO Longitudinal Information Files (ALife) – a project to make de-identified longitudinal taxation data available to approved researchers in a secure environment to build the evidence base for public policy development. Bruce holds an Honours Degree in Economics and a Bachelor of Commerce (Corporate Finance) from the University of Adelaide.

11:00 – 13:00

SESSION 2C - Investments I
Chair: Akshay Shanker (UNSW, CEPAR)

Utility Functions and Design of Retirement Option Menus

Geoff Warren (ANU)

Abstract: Utility functions can assist in designing a menu of investment options by encoding the objectives and preferences for various investor types with the aim of developing suitably tailored products. This paper demonstrates the process through the construction of an illustrative menu of Australian MyRetirement products. The demonstration shows how utility-based analysis can be combined with more traditional metrics to compare strategies and convey their implications; and provides direction on how product options might be presented to a retiring member. Central to the process is characterizing investor types by selected attributes. This both facilitates specifying utility functions for use in product development, and supports communication based around the type of investor for which a product is designed along with its key features and the outcomes it may deliver. Utility functions thus provide the mechanics that drive the analysis, without becoming an explicit component of investor engagement.

Geoff Warren is an Associate Professor at the Australian National University, where he is Fund Convenor of the ANU Student Managed Fund. He is an active researcher who focuses on investment-related areas with an applied emphasis, including: funds management, superannuation, portfolio construction, long-term investing, and the evaluation and taxation of investments. Prior to pursuing an academic career, Geoff spent over 20 years in investment markets, including as the Director of Capital Markets Research at Russell Investments; as an analyst, Chief Strategist and Head of Research with investment bank Ord Minnett / JP Morgan Australia; and as an equity portfolio manager at AMP Capital. He also currently sits on the Salvation Army Investment Advisory Board, the Brandes Institute Asia-Pacific Advisory Board, and the Atlas Infrastructure Macro Advisory Board. Geoff has a PhD from the AGSM, and a BComm (Hons) with the University Medal from UNSW.

How Sub-Optimal are Age-Based Life-Cycle Investment Products?

Gaurav Khemka (ANU)

Abstract: We investigate the conditions under which life-cycle investment strategies based on age may be 'near enough' to optimal, focusing on the treatment of the pension account balance and assumptions about risk aversion. We show that dynamically adjusting the strategy in response to fluctuations in balance as well as age can lead to moderate improvements over product designs currently seen in the market; although most of the potential gains might be captured by specifying the glide path with reference to measures reflecting the projected balance over time.

The risk aversion assumption emerges as a far more important consideration, with much greater utility losses arising from mismatches between the risk aversion of the investor and that underpinning the glide path design. Our analysis points towards possibilities for improving life-cycle or target date funds, and highlights the benefit of offering a suite of such funds that cater for members with differing risk aversion.

Dr Gaurav Khemka is a Senior Lecturer in Actuarial Studies in the Research School of Finance, Actuarial Studies and Applied Statistics at the ANU. He is also involved in teaching the Commercial Actuarial Practise course for the Institute of Actuaries. He received his PhD from the Australian National University in 2013. He has held academic positions at the Australian National University and Bond University. His main area of research is in numerical dynamic programming methods and their application in lifecycle models.

Lifecycle Design – To and Through Retirement

Richard Dunn (Rice Warner), Michael Berg (Rice Warner)

Abstract: Lifecycle investment strategies are designed to provide superannuation members with enhanced outcomes in retirement through adjusting allocations to growth assets as an individual ages. Despite the potential of these products, some early editions of their design have provided disappointing outcomes. This paper presents a framework for designing next-generation lifecycle products which consider both age ***and*** balance to better account for the impact these factors have on investment horizon (and therefore 'optimal' allocations to growth assets) to and through retirement. This paper covers:

- Member Behaviour – analysis of the actions of over 15,000,000 member accounts as contained within the Rice Warner Super Insights research. This will be used to quantify the defining features of member behaviour (such as the relationship between age and balance on drawdown behaviour and therefore investment horizon) and to investigate how data analytics could be used to develop improved superannuation products.
- Framework Design – development of a series of principles (using mathematical reasoning and the aforementioned data) for the development of lifecycle strategies which produce superior member outcomes.
- Modelling – analysis using Rice Warner's proprietary cameo modelling and stochastic investment returns to demonstrate the degree of outperformance that can be attained by adopting a lifecycle strategy that adjusts based on age and balance.

Richard Dunn joined Rice Warner in June 2015 while putting the final touches on a thesis in Quantitative Risk. Now graduated, Richard applies his experience to the wealth management sector to:
- Produce a range of Rice Warner's Public Policy submissions, particularly regarding the development of retirement products and assessing the long-term sustainability of the superannuation sector.
- Review and provide guidance on the behaviour of investment strategies.
- Provide strategic advice to superannuation funds regarding their market position, potential member retention strategies, mergers and acquisitions.
- Leverage data analytics to improve member outcomes through Rice Warner's Super Insights research.

In addition to a combined Bachelor of Commerce and Bachelor of Science (Adv. Math) degree from the University of New South Wales Richard has qualified for fellowship of the Institute of Actuaries Australia (FIAA). During this study Richard specialised in Investment Management and Finance and was subsequently awarded two Andrew Prescott Prizes for the highest performance in each examined course.

Michael Berg joined Rice Warner as a Senior Consultant in January 2014. He has over 20 years' global experience in advising on a wide range of superannuation and investment issues. Michael brings a strong focus on understanding what decisions need to be made, and helping clients to use financial models combined with practical insights to help make these decisions.

Previous roles include being a Senior Manager at PwC and a Partner at Lane Clark & Peacock, a leading UK actuarial firm. His experience includes numerous high impact assignments in a wide range of areas including mergers & acquisitions, investment strategy, defined benefit funding, investment risk modelling, retirement income product design and reviews of significant service providers. Michael holds a Masters of Applied Finance from Macquarie University and is a Fellow of the Institute of Actuaries of Australia, a Fellow of the Faculty of Actuaries and a CFA Charter Holder.

Growth / Defensive Categorisation in Superannuation

David Bell (UNSW; Conexus Institute)

Abstract: In Australia the basis for comparing the performance of super funds is by their exposure to assets labelled 'growth' and 'defensive'. This approach is also used by regulators and financial planners. Currently each super fund self-determines their exposure, resulting in a process which is highly discretionary and open to interpretation and gaming. A working group has worked through the year towards creating a standardised approach to categorisation. This session provides an update on work to date.

David Bell has recently been appointed executive director of the Conexus Institute, a newly created independent research institute focused on improving Australia's retirement system. David is an active researcher (industry and academic) in the areas of retirement, superannuation, and investment management. He is currently completing his PhD at UNSW. Until recently, David was CIO at Mine Super. David previously ran his own consulting firm (St Davids Rd Advisory) and spent 12 years at CFS GAM. David led the development of MDUF (the Member's Default Utility Function), was a co-founder of Cuffelinks, and developed and taught the hedge funds elective at Macquarie University's Applied Finance Centre.

13:00 – 14:00 *Lunch*

14:00 – 15:30 **SESSION 3 - PLENARY**
Chair: Katja Hanewald (UNSW, CEPAR)

Health-linked Life Annuities: Combining Protection and Retirement Income

Ermanno Pitacco (University of Trieste, Italy; CEPAR)

Abstract: Life annuities constitute an appropriate tool providing the retiree with a lifelong income. Nevertheless, we can observe that, in many countries, the propensity to convert into a life annuity the resources available at the retirement time is rather poor. Of course, good reasons, strictly related to the technical features of the "standard" life annuity, underpin the non-annuitization choice. In particular, as the life annuity is an illiquid asset in the retiree's portfolio, the preference for income drawdown strategies can be easily understood.
In the framework of health insurance products, the long-term care (LTC) stand-alone policy provides resources to afford expenses caused by senescent disability. Hence, this insurance cover can be classified as a pure protection product. Nonetheless, its price is rather high, especially because of the safety loading that the insurer needs to charge in order to face pricing (and reserving) risks originated by rather poor statistical data. A barrier on the demand side then follows.
To stimulate the purchase of insurance products, in particular in the old-age segment of the insurance market, various alternative products can be conceived, some of which have actually been proposed. Looking at recent trends in product design, we can see,

1. as regards life annuities:
    a. a shift from "investment" to "longevity insurance" provided by old-age life annuities;
    b. an extension of the rating principle, leading to "special-rate" (or "underwritten") life annuities;

2. as regards LTC insurance, a shift from stand-alone products to “combo” products, e.g. including lifetime-related benefits.

We note that:

- approach 1a implies a restriction of the insurance coverage;
- approach 1b implies an extension of the potential market;
- approaches 1b and 2 can be implemented via health-linked life annuities.

In this paper we focus on health-linked life annuities, which can suggest interesting alternatives to traditional products.

First, we propose a formal framework which encompasses diverse arrangements. In particular, we note that linking the annuity benefit to the health status can be implemented according to two different approaches.

A “static” linking approach can be recognized when, for a given premium, the benefit amount depends on the individual’s health status at the time the annuity is purchased, and does not vary throughout the individual’s whole lifetime. This is the case of the special-rate annuities: the mortality assumption adopted in the annuity rate calculation depends on the health status of the client, assessed via underwriting process. Hence, given the single premium, the annuity benefit is higher if the life expectancy is smaller.

A “dynamic” linking approach is conversely adopted if the benefit amount is adjusted, throughout time, according to the evolution of the individual’s health status. In this context, the care pension, which provides an uplift of the pension amount in the case the retiree enters into a senescent disability status, constitutes an already implemented example.

More detailed linking mechanisms can be designed in the context of the dynamic approach, so that the annuity benefit varies according to the (estimated) need of financial resources. Of course, the more detailed is the linking mechanism, the more complex is the actuarial model as well as the data set required by the pricing and the reserving processes.

Finally, looking at health-linked life annuities from a technical perspective, we note that an appropriate product design can improve the profitability and/or the risk profile of the insurer’s portfolio. In particular, we will first prove that the care pension is less exposed to pricing (and reserving) risks than other LTC insurance products. Then, we will show that special-rate life annuities can raise the size and the profitability of a life annuity portfolio without worsening its risk profile.

Ermanno Pitacco is Professor of Actuarial Mathematics and Life Insurance Techniques at the University of Trieste, and Academic Director of the Master in Insurance and Risk Management at the MIB School of Trieste. As an Associate Investigator he contributes to CEPAR Project 4.5: Financial and Insurance Product Design. His current research interests lie in the area of life and health insurance mathematics and techniques, focusing in particular on longevity risk, life annuity and life insurance portfolio valuations and solvency assessment. He is an author and co-author of textbooks and has published in leading international risk and actuarial studies journals. He was awarded the 2011 Bob Alting von Geusau Memorial Prize, together with Annamaria Olivieri. He serves as vice co-chairman of the Mortality Working Group of the International Actuarial Association (IAA) and Treasurer of the AFIR/ERM Committee of the IAA. Ermanno is editor of the Springer Actuarial series, co-editor of the European Actuarial Journal and associate editor of a number of international journals

Program Substitution – Old Age Pension or Disability Benefit

Erik Harnæs (Frisch Centre of Economic Research, Norway; CEPAR)

Abstract: In many countries, disability is a widely used exit route from the labour market. Some of those who are eligible for old age pension may also be eligible for disability benefits, and may in addition have the option of working longer. In such cases, disability and pension are alternative exit routes and the choices of persons in such a grey zone may therefore be affected by a pension reform. This paper aims to identify the separate effects on disability claiming of pension options and work incentives.

Pension reforms aimed at reducing public expenditure and prolonging working life may consist of several components. These may include repeal of earnings tests, change in pension eligibility by

increase in the pension age and reduction of the pension level, based on longevity or the sufficiency of pension funds.

Strengthening work incentives may cause some of those in the grey zone to work longer instead of choose disability. Reducing pension access may cause some to choose disability. If they also have work incentives strengthened, some may instead choose to work longer. Among the factors influencing the choices are the economic situation of the person or the household, and health, which determines disability eligibility in the first place. Conversely, making access easier, for instance by lowering eligibility age in combination with actuarial adjustment, may have the opposite effect. Some may then choose to claim a pension instead of disability benefit, which may be perceived as carrying some stigma. Others may choose to claim a pension instead of working longer. Again, the choices are influenced also by increased work incentives and by factors such as health and the economic situation.

Several studies show interaction between disability benefit and the old age pension. Duggan et al. (2007) found that an increase in the full retirement age, which reduced the potential annual pension at ages below that age, increased the disability enrolment. In a later study, Coe and Haverstick (2010) found that the same reduction in attractiveness of old age pension relative to the disability benefit, increased only the number disability applications, but not the actual number of recipients. Hanel (2011) finds a reduction in the inflow to disability from the size of the implicit tax of earnings, indicating that better work incentives may reduce disability. Euwals et al. (2011) find no substitution into disability, over a period 1999-2005, by comparing those eligible for an attractive early retirement program to those who are not. This is based on data for the health sector, and since earlier studies find such a substitution, they conclude that institutional changes have stopped the substitution. The two changes they mention are a tightening of reintegration obligations of employers and employees, and an extension of the sickness period paid for by the employer from one to two years. Simulations by Palme and Laun (2018) show that changes in the rules for granting eligibility and implementation of these rules can have a large impact on inflow. Jousten et al. (2011) describes the development in Belgium of the early retirement and social security programs, but without any formal analysis of the interdependencies.

“Program substitution” via disability claiming may therefore impact the income distribution and modify the financial effect of the reform. Furthermore, the net impact is the result of complex interaction of the components. Knowledge of the importance of the components is therefore valuable for assessing the impact of potential and actual pension reforms.

The Norwegian pension reform in 2011 changed both work incentives and pension claiming options (Hernæs et al, 2016). Due to the complexity of the rules, the reform affected different groups in very different ways; according to sector; according to the affiliation of the work place to an early retirement program; and according to individual pension entitlements (Hernæs et al, 2016):

- Some had a new early retirement option, but with actuarial adjustment designed to make the pension neutral with respect to the timing of claiming.
- Some lost their early claiming option.
- Some had increased work incentives.
- Some had increased work incentives and lost their early claiming options.

A previous study of the impact of the Norwegian pension reform showed substantial increases in earning in affected cohorts (Hernaes et al., 2016). The current paper also draws on comparison of corresponding groups before and after the reform, but goes further in focusing on disability and by studying shifts in the flows into three states: continued work, retirement with a pension and entry into disability. While the changes in the pension system were abrupt and large from 2011, there were no formal changes of disability rules until 2015, which is not included in the data basis.

There is an asymmetry between claiming an old age pension and entry into disability. It is quite easy to find out whether one is eligible for a pension and the magnitude of the pension and then to claim it. In contrast, a disability benefit usually follows a lengthy sick leave and then a (failed) rehabilitation process. This may cause some who would probably qualify for disability to choose a pension. Claiming an actuarially adjusted pension at before age 67 carry a present value loss, compared to choosing disability benefit and be transferred to a pension at age 67. Even so, uncertainty and maybe a perceived stigma from disability may cause some to choose a pension. The asymmetry also complicates the analysis of behaviour. While we can identify who have access to an old age pension, we cannot directly identify who are can chose to receive a disability benefit. In the study, previous sick leave is used as an indicator of disability eligibility.

Based on extensive administrative register data covering a period before and a period after the Norwegian 2011 pension reform, we model the inflow at age 63 to work (with or without claiming a pension), (only) pension and disability. We use an alternative specific conditional logit model. The benefits in each state are calculated by assumption of further trajectories up to age 82 (expected longevity), after tax and as present values calculated on an individual basis. Pension only, and disability are clearly absorbing states, while continued work at 63 gives the opportunity of future choices. We assume the choice of states to be based on perceptions at age 63, and we have modelled with two alternative perceptions of further work: another three years and another five years. The latter goes up to 67, when all can claim a pension. Before 67, claiming required a minimum pension entitlement. The option of claiming a pension from age 62, which we call pension access, varies across groups and from before to after the 2011 reform. It should be noted that after the reform, there is deferral of the pension, designed to neutralize the timing of pension claiming. Both incentives and pension access are included in the model.
The first results clearly show that closing an early retirement option increased the inflow into disability, while opening an early retirement option reduced the inflow. After the reform, the work incentives increased substantially for a large group where an earnings test was repealed. The fraction working increased substantially, while the fraction with only a pension dropped, as shown by Hernaes et al (2016). The incentives changes after the reform also reduced the inflow to disability. We are now working to separate the effects of pension access and incentives. There are still a number of unresolved issues, among them whether a “lost pension access” is symmetric with an “added pension access”, whether there are heterogeneous effects and whether the treatment of disability access is good enough in the current model.

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Erik Hernaes is Senior Research Fellow at the Ragnar Frisch Centre for Economic Research at the University of Oslo. He is an Associate Investigator in CEPAR. Erik’s primary research interests are topics related to pensions and he has recently been leading a project on evaluation of labour market effects of the Norwegian pension reform. After that project was completed in 2017, he started a new, three years’ project, on the social sustainability of the Norwegian pension system after the 2011 pension reform. He is also taking participating in a project for the Ministry of Labour and Social Affairs, retirement and labour market. After working in Statistics Norway, he became the director of the Frisch Centre from its start and up to until 2011. He was one of the early researchers to organize administrative register data and to use these for econometric analyses. This is now a major data source for research at the Frisch Centre. The research at the Frisch Centre had mostly been funded by the Research Council of Norway and Government Ministries. The research results are being communicated to policy makers and has been important for policy making related to welfare and the labour market. Erik has published on productivity, education, unemployment and retirement, in the *Scandinavian Journal of Economics*, *Oxford Bulletin of Economic Research*, *Journal of Pension Economics and Finance, Journal of Health, Journal of Public Economics, Journal of Labor Economics* and in volumes from the NBER, Kluwer, Edward Elgar and Routledge.

Housing and Retirement

Brendan Coates (Grattan Institute)

Brendan Coates is Household Finances Program Director at the Grattan Institute. Brendan’s research focuses on tax reform, economic and budget policy, retirement incomes and superannuation, housing, transport infrastructure and cities. Before Grattan, Brendan worked as a macro-financial economist with the World Bank in Indonesia and Latin America, and prior to that, he undertook a number of roles with the Australian Treasury in areas such as tax-transfer system reform, financial and commodities markets analysis and macro-economic forecasting, including as part of the Treasury's China Policy Unit. Brendan holds a Masters of International Development Economics from the Australian National University and Bachelors of Commerce and Arts from the University of Melbourne.

15:30 – 16:00 *Afternoon Tea*

16:00 – 18:00 **SESSION 4A - Drawdown Strategies & Behaviour**
Chair: Inka Eberhardt (CEPAR, UNSW)

Latent Behavioural Groups in Phased Withdrawal Retirement Income Products

Igor Balnozan (UNSW)

Abstract: In this paper, we analyse a panel dataset on drawdowns from phased withdrawal retirement income products in Australia over a 12-year period. Using the Grouped Fixed-Effects (GFE) estimator from Bonhomme and Manresa (2015), we identify distinct latent groups whose behaviours have economically important interpretations. The groups are defined in terms of the effects of time-varying unobservable heterogeneity on the drawdowns. As the data observation window spans several years before and after the Global Financial Crisis, the group effects also characterise how different groups responded to common macroeconomic and policy shocks during the observation period. Broadly, the GFE procedure identifies groups of retirees who follow different drawdown strategies over this period, without specifying any behaviours a priori. Crucially, results from the procedure indicate that an alternative analysis of the data using a standard two-way fixed effects model would produce biased regression coefficient estimates and an unrepresentative estimate of the time effects, which hide the distinct latent group-level time effects. The results also provide statistical support for existing theoretical work and descriptive analysis which suggest retirees may adopt simple heuristics that determine how they draw down their accumulated wealth during retirement.

Igor Balnozan is a second-year PhD student in the School of Economics at the UNSW Business School. His research interests include panel data econometrics and Bayesian methods.

Behavioural Responses to High-Low, Low-High and Flat-Rate Annuities after Retirement: A Stated Preference Analysis

Johan Bonekamp (Tilburg University, The Netherlands)

Abstract: We study the effect of high-low, low-high and flat-rate annuity-based pension profiles on preferred spending after retirement using stated preference data. A stylized model is estimated in which life-time utility is the discounted sum of (CRRA) within-period utilities that depend on consumption, and an end-of-period utility of wealth 10 years into retirement. Based on our estimation results, we conclude that respondents do not behave as (economically) rational agents. The marginal utility of wealth 10 years into retirement relative to the marginal utility of current consumption is significantly lower for a high-low pension annuity than for a flat-rate pension annuity, implying that respondents with a high-low pension arrangement choose to consume more immediately after retirement.

Johan Bonekamp is a second year Ph.D. student in Economics at Tilburg School of Economics and Management. His dissertation focuses on the question: "Why do retirees hold on to their assets well into old age?" Other professional interest is in the economics of aging, micro-econometrics, discrete choice models and savings and portfolio choice. Previously he worked as a researcher at Netspar (Network for Studies on Pensions, Aging and Retirement) and at CPB Netherlands Bureau for Economic Policy Analysis. Johan graduated in 2015 with a MSc in Econometrics and Mathematical Economics from Tilburg University.

Spend your Decennial Age: A Rule of Thumb for Retirement

Shang Wu (First State Super, CEPAR), Rein Van Rooyen (Q Super)

Abstract: In Australia, the majority of people retire with lump sum benefits from defined contribution superannuation schemes, and elect to take their benefits either in the form of Account-Based Pensions (ABPs) or lump sums. Determining the appropriate drawdown from assets in retirement is a complicated and important problem faced by many older Australians. That complexity and importance mean that preparation of comprehensive, independent advice covering retirement drawdown is critical for the majority who do not necessarily have the financial literacy to navigate the decisions themselves. Advice is often expensive and therefore not a feasible option for everyone.
This paper addresses the needs of retirees who are entitled to full or part pension, and who usually do not commission comprehensive, independent advice on drawdowns, but rely on other inputs, such as the ABP minimum withdrawal rates covering pension assets in the superannuation system.
The purposes of this paper are to develop some ABP drawdown rules and to investigate how alternative drawdown rules affect pensioner welfare as determined by using a utility metric, taking into account the lifetime interactions with the Age Pension means tests for different asset balances. We use the legislated ABP minimum drawdown rates as a starting point and explore some previously published drawdown rules. Then, using the results of dynamic programming calculations that produce optimum drawdown rates by age and asset balance, we develop new drawdown rules, including a simple rule of thumb, that yield improved total lifetime utility of consumption for retirees.

Dr. Shang Wu is a Senior Investment Analyst at First State Super where he joined in August 2017. His role focuses on retirement strategy research including the development of retirement solution for the fund and its national-wide financial planning network. He also has extensive experience in member outcomes modelling and asset allocation. Shang obtained his PhD at the University of New South Wales in 2017. His thesis "The demand for long-term care and longevity insurance" received the UNSW Business School HDR Student Thesis Award. Shang's academic research focuses on financial decision making in retirement. He has published several papers in leading international economic journals.Shang is also an Associate Investigator of the Australian Research Council Centre of Excellence in Population Ageing Research (CEPAR) and is a member of the Retirement Income Working Group of the Actuaries Institute.

Rein van Rooyen is the Head of Investment Performance & Data at QSuper as well as an Actuarial Educator for the Institute. Rein serves on a number of Boards and Committees, including the IAA Education Committee, the CFA Brisbane Committee, the Actuaries Institute's Education Council Committee, the Life Insurance and Wealth Management Practice Committee, the Superannuation, Projections and Disclosures Sub-Committee as well as the Young Actuaries Program Committee. He is also the Convenor for the Investment Management and Finance Faculty of the Institute.

Drawing Down or Draining the Well: What is an Optimal Strategy for Consumers

Ross Clare (ASFA)

Abstract: In recent years there has been considerable debate about what is the optimum rate of drawdown for retirement savings.
Some commentators argue that the current age based minimum drawdown percentages for superannuation balances are too high, pointing to low investment returns, or at least in regard to some asset classes.
Others point to evidence (or at least anecdote) that some or many retirees are underspending in retirement, actually saving rather than running down superannuation balances over retirement.
The truth may be somewhere in between, at least for a substantial proportion of retirees.
Investment returns (at least for a balanced fund) have fortunately remained at relatively high levels in absolute terms over an extended period of time. This has meant that some retirees have

had increasing superannuation balances even while drawing down the minimum required amount each year. Inflation is a bit of complication though.
The need to self insure against some possible outcomes is also a factor. There is no current market in Australia for long term disability expenses and the residential aged care system still expects in many cases the provision of substantial bonds by residents.
Going forward, better products and better promotion of existing products may drive greater takeup of longevity products. On the other hand many individuals will still want access to capital to meet actual or potential expenses and to provide financial support for a spouse or children (including adult children who may or may not be doing okay in their own right).

Ross Clare joined the Association of Superannuation Funds of Australia (ASFA) in 1996 and has been Director of Research since 2006. In this role he has been responsible for preparation of research papers across a range of superannuation and retirement income issues, including adequacy of retirement income and the structure of the Australian retirement income system. He was responsible, amongst other things, for the development of the ASFA Retirement Standard, which is now very commonly used. He has contributed papers at nearly all of the Colloquiums of Superannuation Researchers that have been held, including the last 25 or so in a row, which must be a record for the Colloquium. Prior to joining the staff of ASFA he held senior positions with the Australian Treasury and an Australian Government research agency, the Economic Planning Advisory Commission. Ross has degrees in Economics and Law from the Australian National University.

16:00 – 18:00

SESSION 4B - Retirement Systems
Chair: Mengyi Xu (CEPAR, UNSW

Intergenerational Impacts: The Sustainability of New Zealand Superannuation*

Susan St. John (University of Auckland, New Zealand)

** Prepared by Susan St John and Claire Dale for the 2019 Retirement Incomes Review conducted by the Commission for Financial Capability*

Abstract: Some might view increasing fiscal costs as an inevitable consequence of demographic change, but long-term projections in New Zealand suggest that something must give as the debt projections under current settings appear fiscally explosive. Some people are willing to let the inevitable adjustments just emerge over time, while others suggest the answer lies in proactive changes that might require some kind of means testing, rate reduction or a rise in the age of access to NZS. Some put their faith in the growth of GDP to mitigate the 'burden', or in growing the sovereign fund, the New Zealand Superannuation Fund (NZSF). This paper examines the potential of each of these proposal to save costs and to promote intergenerational perceptions of improved equity. A basic income approach and alignment of the rates of NZ Superannuation may be the most fruitful way to address the emerging problems.

Susan St John BSc MA PhD, CNZOM QSO is an Honorary Associate Professor Economics in the Economics Department, University of Auckland Business School, She is the director of the Retirement Policy and Research Centre with research interests in pension policy design, treatment of overseas pensions and the role of annuities. She has recently contributed to the pension debates in Ireland and contributed to the 2019 NZ Retirement Incomes Review . Publications of the RPRC can be found at http://www.rprc.auckland.ac.nz

Exploring Merged Means Test Options

Andrew Podger (ANU)

Abstract: In the 1960s and early 1970s, a 'merged meant test' applied to the age pension, converting assessable assets into an equivalent indexed annuity, adding this to any income not derived from assets, and applying the total to the tapered income test. The advantages were significant, including from presenting assets as the lifetime income streams potentially available, in broadly the same way as the age pension itself is presented.

The current means test involves two entirely separate tests – of assets and income – which are complex and inconsistent. The assets test since 2017 has a taper which is far tougher than that applying under the income test, and which penalises those within the taper range from increasing assessable assets (including superannuation) and encourages the divestment of existing savings or diverting them into the value of the home.
The presentation identifies a merged means test equivalent to that applying in the 1960s, and discusses some modifications that might moderate the impact on winners and losers if the test replaced the current arrangements, and might also provide greater equity between home-owners and renters.
A merged means test might not provide all the answers to better integrate the age pension and superannuation, but it would be a major step forward, encouraging retirees to think of their savings in terms of the lifetime income streams they can offer and supplement or replace the age pension; it would also ensure no-one is penalised when increasing their savings. The paper also touches on other options identified recently by the Institute of Actuaries.

Andrew Podger AO is Honorary Professor of Public Policy at the Australian National University. He was a long-term public servant before joining academia. Amongst his senior appointments were: Public Service Commissioner 2002-2004; Secretary of the Australian Department of Health and Aged Care (and related designations) 1996-2002; Secretary of the Australian Department of Housing and Regional Development 1994-1996; Secretary of the Australian Department of Administrative Services (and related designations) 1993-94.
He was also a senior executive in Defence (Deputy Secretary in charge of Acquisition and Logistics from 1990-1993), Finance (1982-1990) and Social Security (1978-1982). He previously worked in the Australian Bureau of Statistics, the Social Welfare Commission and the Department of Prime Minister and Cabinet, mostly on social statistics and social policy. Before leaving the Australian Public Service in 2005, he chaired a review of the delivery of health and aged care services for then Prime Minister, John Howard. Since then, he has been an adjunct professor at ANU and Griffith University, and at Xi'an Jiao Tong University in China. He is also a Visiting Professor at Zhejiang University. He was appointed Professor of Public Policy at ANU on a part-time basis in 2010, and appointed Honorary Professor of Public Policy from July 2014. He is a Fellow of the Academy of Social Sciences in Australia, a Fellow of the (US) National Academy of Public Administration, a National Fellow of the Institute of Public Administration in Australia and a Fellow of the Australia and New Zealand School of Government. Since 2012 he has been a Public Member of the Australian Press Council. He was awarded an Officer in the Order of Australia (AO) in 2004.

Automatic Enrolment in an European Perspective

Emma Suzanne van Aggelen (University of Leuven, Belgium)

Abstract: Automatic enrolment (AE) is a hot topic in the pension debate. AE stands out through its recognized link with behavioral economics. Behavioral economics differs from 'traditional' economics in a way that it takes into account the nature of human beings. *Inertia* as well as *procrastination* therefore belong to the well-known terminology of those who study the science of behavioral economics.
An increasing number of countries is studying the possibility of the introduction of these "encouraged" affiliation types of pensions. In 2019 the OECD noticed that a total of ten OECD-member countries have already implemented the mechanism of AE in their pension system. Five out of these ten countries are members of the European Union. A closer look, immediately shows that the implementation of AE is a recent evolution in Europe.
In the paper some of the challenges and issues related to AE are discussed. The focus will thereby lie on two countries where the introduction of AE would be an alternative to voluntary affiliation (Belgium) or a replacement for mandatory affiliation (the Netherlands). The paper also looks at the extent to which AE is in line with some of the prevalent European pension policies (within e.g. the European Commission).

Emma Suzanne van Aggelen is a PhD student at KU Leuven’s Institute of Social Law (ISR). She’s preparing a PhD research about access to occupational pensions in the Netherlands, Belgium and the United Kingdom. One of her educational tasks consist of the support of the Pension Law Course, organized at KU Leuven.
Emma Suzanne obtained her master’s degree in law at the KU Leuven. After her graduation at KU Leuven, she decided to study at the University in Antwerp were she obtained an advanced master diploma in tax law.

Why is Inequality Higher Among the Old? Evidence from China

Katja Hanewald (UNSW, CEPAR)

Abstract: This paper studies income inequality in old age and compares the income inequality over the life cycle. We develop a theoretical framework and a new empirical method to show that income is more unequally distributed in old age than in working age. We combine the regression-based inequality decomposition method and the three-step mediating effect test to analyze the transmission of income inequality from initial socioeconomic differences to income inequality in old age. Our study is based on a panel of over 4,000 old households from the China Health and Nutrition Survey during 1991-2015. We find that the urban-rural gap and educational inequality are the primary causes of old-age income inequality. The effect of the urban-rural gap is partially mediated by educational inequality. Inequality accumulates with age and is reinforced in old age by the Chinese public pension system, which is fragmented by occupational sector.

Katja Hanewald is a Senior Lecturer in the School of Risk and Actuarial Studies. She is also an Associate Investigator in the ARC Centre of Excellence in Population Ageing Research (CEPAR), where she is developing the research program of CEPAR's Australia-China Population Ageing Research Hub. Her research addresses risk management and insurance aspects of population ageing with a focus on China. Her current research investigates optimal retirement financial decisions of older households in China and the design of retirement financial products such as reverse mortgages, long-term care insurance, and annuities.

16:00 – 18:00

SESSION 4C - Investments II
Chair: David Bell (UNSW)

Fund Manager Risk and Return Projections: Are they Realistic?

Kevin Davis (University of Melbourne)

Abstract: Superannuation (Pension) funds in Australia which offer a “MySuper” product are required to produce a “dashboard” which lists, *inter alia,* the long term target return, risk level, and benchmark asset composition of the fund’s portfolio. This information provides an opportunity to identify the return forecasts for different asset classes implied by those disclosures and compare them with historical values and estimates of forecasts from alternative sources (such as surveys). The paper also examines whether the mandated form of these disclosures provides consistent information for potential investors.

Kevin Davis AM is Professor of Finance at the University of Melbourne. Until December 2018 he was Research Director of the Australian Centre of Financial Studies (or which he was the Inaugural Director). His primary research interests are financial regulation, financial institutions and markets, financial innovation and corporate finance. He is co-author/editor of16 books in the areas of finance, banking, monetary economics and macroeconomics and has published numerous journal articles and chapters in books. He is currently a member of the Australian Competition Tribunal, has undertaken an extensive range of consulting assignments for financial institutions, business and government, and held a number of Board positions. He is an active contributor to public policy debate. Professor Davis is a Senior Fellow of Finsia and holds Bachelor of Economics (Hons I) from Flinders University of South Australia and a Master of Economics from the Australian National University. He was appointed by the Federal Treasurer in December 2013 as a panel member of the Australian Financial System Inquiry chaired by Mr David Murray which reported in November 2014.

The Utility of Reserving in Retirement Investing

Paddy McCrudden, Brett Cairns (both Magellan Financial Group)

Abstract: In retirement, investors seek to convert their savings to a sustainable salary replacement with access to capital. These desired characteristics often conflict, resulting in investment compromises. Low real interest rates and long life expectancies mean that nominal instruments are seen as unsustainable. Pensions and annuities are illiquid and so clients tend to invest little in them. Investors and advisors are thus rationally turning to growth assets in retirement. However, extracting a fixed income from a risky pool of assets leaves the investor exposed to volatility. The component of this volatility due to re-ordering of returns is called sequencing risk.
In this paper we propose and analyse a solution for meeting retirement investor goals through an investment in growth assets. The solution seeks to provide investors with sustainable inflation-adjusted income payments, is liquid, and aims to protect the capital value of the investment to manage sequencing and longevity risk. It employs a novel process of reserving capital in good times to support income in more challenging times. Our contributions are three-fold. First, we define a utility function that captures the key preferences of retirement investors. We show that in the context of an open-ended fund, the process of reserving capital improves client utility. Secondly, we find the optimal reserve strategy by training a neural network. We then define sequencing risk as the standard error of the mean of utility under permutation of returns. Our third contribution is to show that sequencing risk is an increasing function of client income and asset volatility, and that the reserving process materially reduces sequencing risk.

Paddy McCrudden joined Magellan in 2017 as the Head of Retirement Solutions and Data Science. Before that, Paddy worked for 16 years at BlackRock. From 2015 to 2017, Paddy was based in New York where he led a team building quantitative models for global equities and worked as a lead strategist for active equities. Between 2010 and 2015, Paddy was the head of portfolio management for Australian equities based in Sydney, overseeing index, active and long-short funds. Between 2001 and 2010, Paddy was a portfolio manager and trader in a team responsible for multi-asset portfolios. Prior to the finance industry, Paddy worked as a lecturer in pure mathematics at McGill University in Québec and Macquarie University in Sydney. Paddy earned a CFA in 2005 and holds a Bachelor of Science (hons) from Sydney University and a Ph.D. in pure mathematics from Macquarie University.

Brett Cairns became Chief Executive Officer of Magellan Financial Group in 2018. From 2015 to 2018, Brett was Executive Chairman of Magellan, having been Non-Executive Chairman of Magellan Financial Group since 2013 and having served on the boards of Magellan Financial Group and Magellan Asset Management since 2007. Brett was formerly co-head of the capital markets group within structured finance at Babcock & Brown, which he joined in 2002. Brett was also a former managing director and head of debt capital markets for Merrill Lynch in Australia, where he worked from 1994 to 2002. Prior to Merrill Lynch, Brett spent three years with Credit Suisse Financial Products, the then derivatives bank of the Credit Suisse group. Brett holds a Bachelor of Economics (First Class Honours), a Doctor of Philosophy and a Master of Business Administration from the University of Sydney.

The Exercise of Investment Power by Superannuation Fund Trustees

Robert Annabel (UNSW)

Abstract: As major shareholders in listed Australian companies, directors of superannuation trustees (“trustees”) have considerable power over these companies, and less directly, the capital markets. This power, however, is subject to the fiduciary duty of the trustees, enshrined under the general law and in Superannuation law, which is to act in the best interests of the fund beneficiaries. This raises questions as to how trustees exercise this power, and whether they are adequately meeting their responsibilities to beneficiaries. It also raises questions about whether

this power and the trust law governing its use, are socially desirable and whether changes to superannuation law and corporations law are required to alleviate any adverse consequences.
The relevant powers and decisions of the trustees are to make overall asset allocations for different investment options, to select particular investments for each portfolio, to vote at corporate General Meetings and to 'engage' corporate managers. Often, they rely on delegation to asset consultants, investment managers and proxy advisers to exercise these powers.
All these decisions have a collective impact that depends on the actions of all investors, not just other superannuation funds, and is difficult to measure. The exercise of voting rights, however, can have immediate consequences for the companies concerned. Furthermore, trustees and their agents may be able to influence management between general meetings by expressing their opinions as to the desirability of particular strategies therefore determining the General Meeting agenda.
When making these decisions, the best interests duty requires that their powers be exercised with consideration of the entire portfolio, rather than a single company issue which appears to presently be the case.
It is with this portfolio-perspective in mind that Hawley and Williams (2000) began describing superannuation funds as 'universal owners.' They suggest that the long term investment performance of fiduciary institutions, which are largely superannuation funds in Australia, is likely to depend on the "performance of the economy as a whole". One consequence is that they will place a higher value on externalities with a general impact on their other investments – such as pollution, education, and research. They also make the point, that, due to their reduced ability to exit investments, they must actively govern.
Their assumption that there is a positive relationship between investment returns and general economic growth is not however borne out by the evidence. Ritter (2012) shows empirically that the correlation between equity returns and economic growth in different countries is negative over the last century. He suggests that the negative relationship arises from "the natural tendency of corporate managers to pursue growth, if necessary at the expense of profitability." From this perspective, encouraging the performance of the economy as a whole is in not in the best interests of beneficiaries as investors, although as citizens, they would prefer growth.
Various other reasons have been given for the negative relationship, but perhaps most concerning for superannuation fund trustees is the possibility in they may be partly responsible for the lower growth. Azar (2017) demonstrates that when the economy consists of owners of perfectly diversified equity portfolios, the firms would operate as a monopolies to maximise economy-wide profits. These owners may be referred to as 'common owners.' Azar et al (2018) then show that common ownership is correlated with increased prices in the airline industry. They conclude that a hidden social cost, in the form of reduced product market competition, accompanies the private benefits of diversification and good governance. Such implicit collusion would clearly not be socially desirable and probably illegal.
Both the 'universal owner' and 'common owner' theories assume each investor has an identically diversified equity portfolio. In Australia, however, superannuation funds invest across many asset classes, while member investment choice also allows members to choose their asset allocation, and whether to invest 'ethically' or 'responsibly.' Even within the MySuper default fund, asset allocation amongst members may vary if the default is a lifecycle fund. Trustees may therefore be reducing the returns on beneficiaries more exposed to equity investments, when they suggest that managers of real estate assets negotiate for higher rents, or be negotiating for better returns on money lent to corporates.
This paper explores these issues of collusion and conflict, considering the legal and ethical obligations of the trustees. It also reports on interviews with trustees and their advisors as to how they perceive these issues and the steps they have taken to address them. The results should prove useful to trustees and advisors to ensure that they fulfil all their fiduciary and social duties, and inform future changes to both superannuation and corporation law.

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Robert Annabel is an Honours student in the UNSW School of Risk and Actuarial Studies. He has 3 years work experience working for various actuarial consulting firms over 3 years as a graduate consultant and UNSW Co-Op intern. In the future, he would like to, hopefully, complete a PhD exploring the consequences of superannuation funds becoming significant owners of the Australian capital markets and economy.

Financial Engineering: A New Longevity Bond to Manage Individual Longevity Risk

Yuxin Zhou (UNSW, CEPAR)

Abstract: This paper proposes a new type of longevity bond as a postretirement investment product for individuals to hedge their longevity risk which has the flexibility to meet both income and bequest needs. The payoffs of the bond are composed of flexible monthly coupon payments until death and a principal payment at the time of death. In order to price and hedge the bonds, we calibrate arbitrage-free Nelsen-Siegel (AFNS) interest rate and a multi-factor continuous time mortality model with Australian data. We show how to construct a hedging portfolio for a portfolio of these bonds issued to individuals with existing Australian government bonds to minimize the interest rate risk. We also assess the capital requirements for the longevity risk and any remaining mismatching risk in the portfolio to quantify the capital cost to include in the individual bond price. The bond has the benefit of including a natural hedge through a principal payment on death and flexibility income levels until death.

Yuxin Zhou is an honours candidate at the School of Risk and Actuarial Studies at UNSW Sydney and CEPAR. He obtained a Bachelor degree of Actuarial and Commerce from UNSW. His current research interest is in the area of longevity risk management.

18:30 **Colloquium Dinner**

PROGRAM: TUESDAY, 3 DECEMBER

8:45 – 9:00	*Arrival and Registration*
9:00 – 10:30	**SESSION 5: PANEL– Retirement Income Review**

Chair: Marc de Cure, Advisory Board Chair, CEPAR; Adjunct Professor and Advisory Board member, UNSW Business School; Independent Non-Executive Director, Zurich Financial Services Australia

- Deborah Ralston, Professorial Fellow, Monash University
- Geoff Lloyd, CEO, MLC Wealth
- Robbie Campo, Group Executive - Brand, Advocacy, Marketing and Product, Cbus Super Fund
- Ian Yates AM, CEO, COTA Australia

Dr Deborah Ralston is a Professorial Fellow, with over 25 years of board level experience across commercial and public sectors with particular experience in the banking, superannuation, and education industries.
She is currently a Reserve Bank of Australia Payments System Board Member, and was recently Chair of the SMSF Association.
In 2018 she was appointed to the Comprehensive Income Products for Retirement (CIPRs) Framework Advisory Committee. She was also the inaugural chair of ASIC's Digital Finance Advisory Committee and is a member of the YBF Fintech Hub Advisory Board. From 2004 to 2018 she was a non-executive Director of ASX-listed company, Mortgage Choice.
From 2009 to 2015 she was the Executive Director of the Australian Centre for Financial Studies, in her role as a Professor of Finance with the Monash University Business School. She was the Principal Investigator of the CSIRO-Monash Superannuation Research Cluster. Prior to her engagement at Monash University, she was Pro Vice-Chancellor of Business, Law and Information Sciences at the University of Canberra, and prior to that Dean of Business at the University of the Sunshine Coast.
She holds a Doctor of Philosophy in financial regulation, and a Master of Economics in small business finance. She is also a Fellow of CPA Australia (FCPA) and the Australian Institute of Company Directors (FAICD).

Geoff Lloyd was appointed Chief Executive Officer of MLC Wealth in September 2018.
Geoff's leadership responsibilities at MLC Wealth include oversight of: Australia's largest retail super fund; platform funds under management (FUM) of $67bn; more than $50bn in business and corporate super FUM; over $200bn of assets under management; and a large, national team of employed and self-employed financial planners. This year he announced a new strategic intent and transformation program to strengthen and modernise MLC Wealth ahead of its separation from the NAB Group.
Prior to joining MLC Wealth, Geoff was CEO and Managing Director of Perpetual Limited, where he and his senior leadership team successfully delivered Perpetual's strategy designed to simplify, refocus and grow the company.
Geoff commenced at Perpetual in 2010 as Group Executive Private Wealth and became Managing Director and CEO in 2012.
Previously he held a number of senior roles at BT Financial Group and St George's Wealth Management business including, Group Executive - Wealth, General Manager - Advice and Private Banking, and Chief Legal Counsel.
He is the Chair of the Financial Services Council, an Advisory Board member of The Big Issue, and the Patron of the Financial Industry Community Aid Program (FICAP). He is also a patron of the Emerge Foundation, a signatory to the Banking and Finance Oath, and the Chair of the University of Technology Sydney Law Advisory Board.
Geoff has a Master of Laws (Distinction) from the University of Technology Sydney and has completed the Harvard University Advanced Management Program.

Robbie Campo is Group Executive Brand, Advocacy and Product at Cbus. Robbie has enjoyed almost two decades working in industry super including as Deputy Chief Executive at Industry Super Australia. She has extensive experience in marketing, brand, communications, strategic policy and advocacy, risk and compliance and financial advice. Robbie will be a strong policy and brand advocate for Cbus within her extensive network across the industry. She is a current Non-Executive Director and Audit and Risk Committee member at Victoria Legal Aid, and is also a Director of Women in Super and the Chair of WIS' Policy Committee.

Ian Yates AM is Chief Executive of COTA Australia, the national peak body for older Australians. Ian has played national leadership roles in COTA since 2002 after being Chief Executive of COTA SA since 1989. He serves on a wide variety of federal government and aged care sector national bodies, currently including the Aged Care Financing Authority, the Aged Care Quality and Safety Advisory Council, the Aged Care Sector Committee and the Dementia Ageing and Aged Care Mission Expert Advisory Panel. Ian is a Sponsor Member of the National Aged Care Alliance, chairs the Alliance's Aged Care Gateway Advisory Committee and Co-Chairs its Aged Care Roadmap and NACA Blueprint Implementation Group.
Ian is also a member of the ASIC Consumer Advisory Panel and of the Advisory Board of the Centre of Excellence in Population Ageing Research (CEPAR). Other roles include Chair of the Management Committee of the Australasian Journal on Ageing; a Director of COTA's membership services company and the Aged Rights Advocacy Service. He has held a number senior positions in public health governance in South Australia and served on the Flinders University Council for 20 years including seven years as Deputy Chancellor and Chair of both its Audit and Resources Committees and Alumni. Ian is Emeritus Deputy Chancellor of Flinders University and holds an Honorary Doctorate from the University. He was awarded Membership in the Order of Australia (AM) in June 2005.

10:30 – 11:00	*Morning Tea*
11:00 – 13:00	**SESSION 6A - Retirement Incomes** ***Chair: Andrés Villegas (CEPAR, UNSW)***

Public Annuities: Buyers' Behaviour and Policy Design

Sau-Him Paul Lau (University of Hong Kong)

Abstract: Motivated by Diamond (2004) and the experiences in various economies adopting the defined contribution pension system, we study the number, form and offering time of public annuities when individuals' survival probabilities and strength of bequest motive are heterogeneous. After obtaining a useful measure of the severity of adverse selection, we examine public annuities with a guarantee clause that a fraction of the annuity payout is still received by the buyer's beneficiary after she dies. We show that an increase in the guarantee proportion is generally able to mitigate adverse selection. However, when the heterogeneities in survival probability and bequest strength are limited, the guarantee clause is irrelevant. Regarding the offering time, we find that a deferred public annuity contract offered at a young age eliminates adverse selection and crowds out the transaction of the immediate annuity contract offered at an older age. Our results are useful to countries planning to introduce public annuities.

Sau-Him Paul Lau received BSocSc from the University of Hong Kong, MSc from the London School of Economics and PhD from the Stanford University. After teaching at the Texas A&M University, the Australian National University and the Hong Kong Baptist University, he joined the School of Economics and Finance, University of Hong Kong in 2000. Paul began his career with research interests in macroeconomics and growth. His work in providing microfoundations to staggered wage contracts widely observed in the United States and the United Kingdom has led him to develop a research interest in applied game theory. His interest in economic growth has helped him pursue research questions linking growth with time series econometrics. As a result, Paul has developed a unique research profile that combines macroeconomics and growth, applied game theory and time series econometrics. In recent years, Paul has extended his research interest in economic growth to issues related to population aging, including effects of mortality decline on saving, retirement age and human capital investment. His work on game-theoretical analysis has also led him to collaborate with his co-authors to conduct experiments on social identity and cooperation in inter-group games.

Longevity Risk: Retirement Product Innovation and Risk Management Strategies

Doreen Kabuche (UNSW, CEPAR)

Abstract: This research develops a new retirement income product that provides partial guarantees as part of retirement benefits in a group-self annuitization. Guarantees are common in participating life annuities where are offered through participation in the insurer's profit. The design of this product involves a mix of features of a Group-self annuity (GSA) and a Participating Life Annuity (PLA). Since the need for guaranteed income is becoming an increasingly important issue for retirees, insurance companies and governments, "new" innovative designs for risk pooling products such as GSAs with alternatives typically minimum and/or partial guarantees that are less risky to both insurers and policyholders will provide optimal solutions to longevity risk. The proposed product divides pension savings between two accounts namely, a GSA account and a surplus account. The GSA account provides lifelong retirement benefits while the surplus account is used to adjust such benefits over time. Our new retirement income product aims at providing a financially secure retirement income stream while offering retirees with the flexibility to switch from a lifelong account to a surplus (capital) account. Australia population- mortality data from the Human Mortality Database and Australia interest rate data are used in setting the product. Smoothing techniques are implemented for both the GSA and surplus accounts to maintain the desired account ratios subject to Australian regulatory requirements.

Doreen Kabuche is a Ph.D. candidate at the University of New South Wales (UNSW) in Sydney, Australia and a Research Scholar at CEPAR, UNSW Business School. She researches and writes about designing retirement income products. She aims to identify and develop alternatives that facilitate efficient longevity risk management. Her research interest covers topics ranging from population ageing, retirement income products designing, health insurance markets, quantitative finance, petroleum, and energy economics. She holds a Masters in Petroleum, Energy Economics and Finance from the University of Aberdeen, UK and a Bachelor degree in Actuarial Sciences from the University of Dar es Salaam, Tanzania. Prior to her doctoral studies, Doreen was a research fellow at the United Nations Economic Commission for Africa (UN-ECA) in Kigali, Rwanda. She has also served as an assistant lecturer at the University of Dar es Salaam, in Tanzania.

Tax Progressivity in Australia: A Dynamic General Equilibrium Analysis

Nabeeh Zakariyya (ANU)

Abstract: We study the optimal progressivity level of the Australian personal income tax system in a dynamic general equilibrium, overlapping generations model with skill heterogeneity and uninsurable labor productivity risk. We first demonstrate that our model can replicate the key features of the Australian economy, including the distribution of tax liabilities and progressivity level. We next apply the model to measure the optimal progressivity of the personal income tax system, relying on a utilitarian social welfare criterion. Our results indicate that reducing the progressivity level of the income tax system reduces distortions on incentives to work and save, that subsequently leads to improvements in aggregate efficiency and welfare. The utilitarian social welfare function is maximized when the income tax system is proportional at the flat rate of around 14 percent. The optimal progressivity level of the income

tax system is closely related to the design of a means-tested pension system. Interestingly, the optimal proportional tax code is robust to alternative designs of the means-tested age pension system.

Nabeeh Zakariyya is a final year PhD candidate at the Australian National University with the Research School of Economics. His current research examines the dynamics of progressivity and the size of tax and transfer systems on social welfare, aggregate efficiency and inequality using both empirical and general equilibrium models. His current work focuses on examining the impacts of changing progressivity on aggregate efficiency, social insurance and redistribution in Australia in compared to other OECD countries. Nabeeh's primary research interests include the impact of social welfare policies on household behaviour over the lifecycle, particularly on the interaction between tax progressivity and targeted public transfers in maximizing welfare outcomes. In addition, he also researches issues related to how measures of subjective wellbeing can better inform policies. Prior to his candidature, he worked with the World Bank Pension and Social Administration Project in the Maldives, consulting on the development and risk-based supervision of the newly formed retirement pension scheme.

UBER Retirement

Paul M. Secunda (Marquette University, USA)

Abstract: Although by no means a new question regarding retirement, the noteworthy growth of "gig companies" in the "sharing economy," has renewed concerns that even more American workers will lack access to employment-based retirement plans. Although the gig economy does "offer workers advantages including more independence and flexibility, . . . company-sponsored retirement saving is not one of them." This is a "dangerous" state of affairs as employment-based retirement plans make up a critical part of an individual's strategy for retirement security.
Such retirement plans, like the nearly-ubiquitous 401(k) plans, provide a necessary bulwark against destitution in old age, especially given that Social Security provides only partial income replacement and few Americans have much put away in private savings. Yet, independent contractors, which as how most gig companies classify their workers, are approximately two-thirds less likely than standard employees to have access to an employer-provided retirement plan. Much academic and judicial ink
has already been spilt over whether Uber drivers and other members of the
sharing economy are independent contractors or employees. This classification is of utmost importance because it largely determines whether gig workers are covered by employment laws, as most such laws center on the employer-employment relationship. Surveys have indicated that a significant number of gig workers want – and need - to have employer-based retirement plans. Into the breach, a number of proposals have emerged to provide "independent workers" or "independent contractors," who work for gig companies, with some form of portable, occupational retirement benefit. These proposals are certainly praiseworthy for recognizing a substantial problem: the need to provide gig workers with portable retirement security given the sporadic, non-exclusive, frequently part-time nature of most of this work. However, most of the extant proposals concede a critical point by concluding that gig workers are *not* employees, but rather some type of independent contractor, for purposes of employment law. This paper sets out a model for providing retirement benefits for gig workers in the sharing economy.

Professor Paul Secunda joined Marquette University Law School in the summer of 2008, after six years on the faculty of the University of Mississippi School of Law. He teaches Employee Benefits (social security) and Pension Law, Labor Law, Employment Law, Employment Discrimination Law, Education Law, and Civil Procedure. In 2013, U.S. Secretary of Labor Solis appointed Professor Secunda to a three-year term to the Department of Labor's ERISA Advisory Council, where he advises the Department on employee benefit law issues involving retirement and welfare benefit plans. In 2014, he was named Vice-Chair of the ERISA Advisory Council, and in 2015, he served as its Chair. Professor Secunda's legal scholarship centers on comparative analyses of employee rights to employee benefits, as well as on the civil liberties and civil rights of employees, with a focus on public employees' constitutional speech, privacy, and associational rights. He is the author of nearly five dozen books, treatises, articles, and shorter writings. Professor Secunda was in Australia in 2015 as both a Senior Fulbright Scholar focusing on a comparative analysis of the Australian Superannuation Guarantee and as a Senior Fellow at Melbourne Law School, teaching a class in Comparative Superannuation Law. Professor Secunda is an elected member of both the American Law Institute and the American College of Employee Benefits Counsel.

11:00 – 13:00

SESSION 6B - Health and Aged Care
Chair: Bei Lu (CEPAR, UNSW)

Ageing and Caring – The Socioeconomic Contributions and Implications of Caring when Aged 65 Years or Older

Lukas Hofstätter (Carers NSW; Department of Sociology, Macquarie University)

Abstract: Discourse regarding our ageing society tends to frame demographic shifts in terms of costs to the health and welfare systems. However, nearly one in four family and friend carers, over 600,000 nationally, are over the age of 65 (ABS 2015). Older carers make a significant contribution to the Australian economy and society by providing unpaid care to hundreds of thousands of people of all ages living with a disability, mental illness or health condition, saving governments more than $60 billion per year Deloitte Access Economics 2015). This presentation examines the features of an ageing society from the perspective of the socioeconomic contributions of older people as carers, exploring their current and future financial security, the impact of caring role on their workforce participation and wellbeing, and intersections of these variables with gender and age. The experiences of older carers are multilayered and unique, highlighting a number of service gaps and unmet support needs that carry implications for policy and advocacy. Data from the Carers NSW 2018 Carer Survey (Carers NSW 2018) and the ABS Survey of Disability, Ageing and Caring 2015 (ABS 2015) were compared and analysed to build an in-depth socio-economic profile of carers aged 65 years or older in NSW. Older carers are more likely than carers under the age of 65 to be female and to be caring for a male partner or spouse who is also 65 years older. Nearly one in three older carers provides more than 60 hours of care per week, and 40% of older carers have been in a caring role for more than 10 years. This confirms that caring roles are often long term and can affect carers' abilities to participate in paid employment, in turn impacting their access to a retirement that adequately meets their needs (ABS 2015). Carers NSW 2018 Carer Survey data shows that older carers are most likely to fund their retirement through a government pension, followed by their superannuation. While most older carers have thought about their retirement and how they intend to fund it, the difference in long-term earning power for male and female carers has a direct impact on their assets, savings and superannuation. Female carers are more likely than male carers to reduce their working hours, limit their career progression or leave the workforce to accommodate their caring responsibilities. Female primary carers are also much more likely to be employed on a part-time basis and more female carers than male carers are not be in the labour force at all (Carers NSW 2018). As a result, the divergence in median income for older female and male carers continues to endure with older male primary carers on average $420 per week compared for older female primary carers earning at $387. More than half of older primary carers identified difficulty in meeting every day costs as a result of their caring role (ABS 2015). Nearly three quarters of older male and female carers have identified a government pension or allowance as their main source of income, compared to only 57% of men and 67% of women aged 65 or older in the general population. These gendered differences between carers and non-carers is also reflected in access to superannuation, which is the primary source of income for 18% of older male carers, and only for 13% of female carers, compared to 20% of men and 15% of women in the general population (ABS 2015).
While older carers are more likely to be female and in a primary caring role, older male carers continue to a have higher rate of participation in the labour force. 15% of older male carers are still in the workforce, which is only slightly lower than for the same group in the general

population (16%). Female carers aged 65 or older have a labour force participation rate of 10%. While this lies below the participation rate of male carers, female carers however have a higher participation rate than women aged 65 or older in the general population (9%), indicating a need to compensate for the loss of lifetime income and additional expenses due to their caring role (ABS 2015).
The socioeconomic disadvantage that older carers experience is important to note, as it affects their health and wellbeing, reducing their capacity to care sustainably and increasing pressure on formal services. As such, these issues need to be addressed at a policy level. However, it is also important to recognise the positive features of caring and ensure that older people are supported to maintain sustainable caring roles that benefit society and economy, those they care for and themselves.

References:
Australian Bureau of Statistics (2015) Survey of Disability, Ageing and Carers, 2015. TableBuilder Dataset, www.abs.gov.au, Australian Government, Canberra.
Carers NSW (2018) Carers NSW Carer Survey, unpublished data. Carers NSW, Sydney.
Deloitte Access Economics (2015) The Economic Value of Informal Care in Australia in 2015. Report for Carers Australia, Canberra.

Lukas Hofstätter is a Research and Development Officer at Carers NSW, and Honorary Postdoctoral Associate at the Department of Sociology at Macquarie University. Previously he worked as a lecturer and researcher in various contexts in Sydney (Australia), Frankfurt am Main (Germany), and Vienna (Austria). He holds a PhD in Sociology from Macquarie University Sydney and Goethe-University Frankfurt (Cotutelle), where he graduated with a thesis on finance, inequality and globalisation. He also holds a Master of Arts and a Bachelor of Philosophy in Sociology from the University of Vienna. His current research interests include the sociology and political economy of caring and empirical methods in research and evaluation.

Retirement Planning with Systematic Disability and Mortality Risk

Mengyi Xu (UNSW, CEPAR)

Abstract: This paper studies retirement planning for a retiree in the presence of systematic disability and mortality risk. We use the U.S. Health and Retirement Study (HRS) data to calibrate a multi-state model which incorporates a deterministic time trend and a stochastic factor in the transition rates between different health states as proxies for systematic trend and uncertainty, respectively. We study how systematic trend and uncertainty affect retiree's demand for long-term care (LTC) insurance and life annuity. We also assess the welfare loss if the retiree ignores systematic trend and / or uncertainty. The welfare cost from following the sub-optimal strategy is measured as the percentage of extra initial wealth required to bring the retiree to the utility level that is obtained by following the optimal strategy with the original initial wealth. The welfare cost of ignoring trend and uncertainty is most significant for low-wealth people (up to 200% of their wealth at retirement). In contrast, the welfare costs for high-wealth people are negligible, rarely above 1% of their wealth at retirement. Our results demonstrate that the recognition of systematic trend and uncertainty in disability and mortality is key to the low-wealth people's sustainable well-being in later life.

Mengyi Xu is a Senior Research Associate at the Australian Research Council Centre of Excellence in Population Ageing Research (CEPAR). She has completed her PhD in Actuarial Studies at UNSW Business School. Her research interests include retirement financial products, pension fund management and longevity modelling. She is a Fellow of the Institute of Actuaries of Australia.

Friends, Family and Framing: A Cross-country Study of Subjective Survival Expectations

Megan Gu (Macquarie University)

Abstract: Giving people objective information about the longevity of peers and/or same-sex ancestors induces revisions in subjective survival expectations. 'Live to' and 'die by' framing has

a much larger effect on subjective expectations than personalised information about cohort or family longevity. Survival information provided in these formats could assist regulators trying to educate the public about longevity and the consequent need for delayed retirement or pension ages. According to life-cycle theory, to manage retirement wealth efficiently, individuals should hold accurate (or at least unbiased) survival expectations. Research into subjective survival expectations from a range of countries, including the Netherlands and Australia, shows that, on average, individuals underestimate their survival prospects; younger cohorts and women underestimate more than older male cohorts (Bucher-Koenen and Kluth 2013, Kutlu-Koc and Kalwij 2013; Teppa and Lafourcade 2014; Wu et al. 2014); the survival experience of (especially same sex) parents and grandparents significantly influences individuals' expectations of their own survival (Khan et al. 2014); and that framing effects are important (Payne et al. 2013). Pessimism about survival is related to earlier retirement, lower retirement savings and lower rates of annuitization (van Solinge and Henkens 2009; Bucher-Koenen and Kluth 2013; Bateman et al 2014; Rutledge et al 2014; Teppa and Lafourcade 2014), all of which increase demands on publicly provided safety nets. Increases in pension eligibility ages are likely to be resisted more strongly by individuals with pessimistic survival expectations. This raises the question of how individuals form subjective survival expectations, and the related normative question of how policymakers can help people adjust subjective survival expectations as longevity rises.

We implement a two-country online experiment survey of around 2000 participants in Australia and the Netherlands to investigate how people update their subjective survival expectations after receiving objective information about their longevity prospects - systematic longevity (cohort life expectancies) and idiosyncratic life expectancy (same-sex parent/grandparent's lifetime relative to average). We also examine the impact of personal characteristics including demographics, preferences and health status on the formation of subjective survival expectations as well as provide guidance for regulated information provision to help people form more accurate expectations. Each participant is asked their subjective survival probabilities to a range of target ages and median life expectancy in either a 'live to' or 'die by' frame. They are then randomly assigned to information conditions where information about their current cohort survival or personalised information on same sex parent/grandparent survival, or both, were provided. Participants are asked to update their subjective survival expectations and median life expectancy.

The four key hypotheses we tested are:

- on average, the "live to", "die by" framing is irrelevant to subjective survival expectations;
- on average, participants who receive no additional information hold unbiased subjective survival expectations;
- participants who receive information about the survival of their same-sex parent or grandparent hold subjective survival expectations that are correlated with their family history, relative to the respondent's age/gender cohort; and
- on average, participants who receive information about the average survival of their birth/gender cohort and information about the survival of their same-sex parent and grandparents hold unbiased subjective survival expectations that are also correlated with family history.

These hypotheses were rejected by the Dutch and Australian data. The irrelevance of framing is strongly rejected: people are more optimistic under the 'live to' than the 'die by' frame. The subjective survival expectations respond to the treatments of providing cohort and family survival information: the gap between the subjective probabilities and the life table's probabilities narrows. This effect is more pronounced in the formation of subjective median life expectancy. Furthermore, more numerated participants tend to form more accurate subjective survival expectations while those with poor selfassessed health are more pessimistic.

We conclude that our proposed information formats are cognitively challenging for those without adequate numeracy skills and induce pessimism by highlighting individual's mortality. As well, by comparing survey outcomes from the Netherlands and Australia, we can exploit key differences between retirement systems in both countries: the Netherlands has compulsory annuitisation; Australia has no compulsory decumulation structure and virtually no voluntary annuitisation. Our results are relevant to regulators trying to educate the public about longevity and the consequent required changes to public policy to address the fiscal burden of population ageing.

Megan Gu is a research fellow at Macquarie University Centre for the Health Economy (MUCHE). She has experience in applied economic research in healthcare and ageing, with experience working with longitudinal linkage datasets and surveys. She previously worked as a research fellow at the ARC Centre of Excellence in Population Ageing Research (UNSW) investigating the formation of subjective survival expectations as well as the impact of cognitive decline on financial decision making. She was also a post-doctoral fellow at the Centre for Health Economics Research and Evaluation (UTS) (jointly with Capital Markets Cooperative Research Centre) working with an industry partner on research topics including hospital choice and hospital charges. Megan completed a Bachelor of Economics (Honours) at the University of Sydney and a PhD in Economics at the University of New South Wales.

Long-term Care Insurance Financing using Home Equity Release: Evidence from an Experimental Study

Tin Long Ho (CEPAR, UNSW)

Abstract: Long-term care (LTC) insurance protects against future unexpected LTC costs. However, due to the costly nature of LTC insurance, take-up rates are relatively low internationally. At the same time, home equity release products, including reverse mortgages and home reversion plans, are also unpopular, as individuals use their housing assets to hedge against future unexpected LTC cost. To solve the difficulties of funding LTC insurance and the substitution effect of housing wealth, we develop a new financial product which allows individuals to use their housing wealth to fund LTC insurance premiums. To ascertain the demand for this new product, we conduct and analyse an experimental online survey that focuses on Chinese homeowners aged 45-64. We make two key contributions to the literature: (1) We suggest viable solutions to both the LTC insurance and the reverse mortgage puzzles; and (2) we analyse the potential demand for different product designs linking LTC insurance and home equity release products. We test how accessible housing wealth and socioeconomic covariates impact the demand for LTC insurance. Our results will allow policymakers and businesses to assess the potential demand for the new products and to develop a successful and mature private market for LTC insurance.

Tin Long Ho is a PhD candidate at the School of Risk and Actuarial Studies at UNSW Sydney and the ARC Centre of Excellence in Population Ageing Research (CEPAR). His research currently focuses on retirement planning in China and the role of housing and new retirement financial products. His research interests are pricing and design of financial products; home equity release for retirement financial planning. Tin Long Ho obtained a Bachelor of Commerce in Actuarial Studies (Honours) from the University of Melbourne.

11:00 – 13:00

SESSION 6C - Behaviour and Engagement
Chair: Sophie Yan (CEPAR, UNSW)

A Fistful of Dollars: Financial Incentives Improve Retirement Information Search

Inka Eberhardt (UNSW, CEPAR)

Abstract: A lack of pension awareness undermines adequate savings decisions. To understand what motivates individuals to become informed about their pension situation, we conducted two field experiments with 245,712 and 257,433 pension fund participants, respectively. We find that lottery-type financial incentives to visit an online personal pension planner are cost effective and increase the rate at which individuals check their pension information. Offering a few large prizes rather than many small prizes is most effective, and financial incentives work when used repeatedly. Uptake of pension information does not lead to improved pension knowledge and increased savings behavior three weeks after our intervention.

Inka Eberhardt is interested in the interface between behavioral economics and pension systems. For her dissertation, Inka worked together with the "Bedrijfstakpensioenfonds Detailhandel", the pension fund of the Dutch retail sector. She uses field experiments and online surveys to research the effectiveness of pension communication on savings behavior and retirement decisions. Currently, Hazel Bateman and Inka work on a project that tests what information consumers need and understand in order to buy an appropriate retirement income product. The aim of her research is to improve communication and to enable consumers to make better choices.

Life Insurance: Decision States, Financial Literacy and the Role of Personal Values

Paul Gerrans (UWA)

Abstract: Accompanying the "unprecedented shift away from state to private pension provisions" (Ongena, 2018) has been a transition from defined benefit (DC) retirement savings plans to predominantly defined contribution (DC) pension plans. Both provide, and in part necessitate, choices by individual members in terms of savings rates and investment strategy. While performance of the plan investment strategy(ies) is important to members in both DB and DC plans, for DC members performance has a more direct impact and one they can influence by changing the investment strategy of their account. The performance of a member's retirement savings account is not only important to the individual member but also to taxpayers who fund state based retirement income support whose expected rising magnitude triggered the shift to private pension provision.
Given the importance of individual retirement savings, and the growing importance of DC plans, it is surprising that empirical literature focussing on the performance of investment choice in retirement savings plans is relatively small, and with conflicting results. For example, findings of no difference in the performance of active and inactive members in aggregate (Yamaguchi et al., 2007), poorer outcomes from those exercising choice (Ahmed et al., 2018) including poor timing ability (Gharghori et al., 2008), and outperformance of active members at the expense of inactive members (Dahlquist et al., 2016).
We utilise a large, longitudinal sample of members drawn from an Australian superannuation master trust over a ten-year period spanning the global financial crisis. The sample includes workers from 180 different employers from a range of industries. Members of the trust are able to select a different investment strategy for their future contributions, and separately for their accumulated balance. We estimate a range of risk-adjusted performance measures and focus on the distribution of performance and employ the approach of Kosowski, Timmerman, Wermer, and White (2006) to discriminate among a distribution of performance where luck plays a role.

Paul Gerrans is a Professor of Finance at The University of Western Australia. Paul's research focuses on consumer financial decision making, particularly within a retirement savings context, and the role of financial literacy in these decisions. This research has been aided by transaction databases provided by a number of large retirement savings funds. Paul teaches personal finance and financial planning and undertakes related research into financial literacy and financial advice seeking. He has an interest in all aspects of financial literacy with an emphasis on the acquisition of financial literacy by young adults (e.g. undergraduate students) and the interaction of financial literacy and cognitive decline among older adults. Paul has previously been a member of federal government retirement savings advisory bodies, a member of the MoneySmart Teaching Evaluation Steering Committee at the Australian Securities and Investments Commission, and presently is a member of the OECD/INFE Research Committee and the OECD PISA Expert Group.

Pensions and Participation: Evidence from WWII Veterans in Australia

David Rodgers (UNSW, CEPAR)

Abstract: WWII veterans in Australia could access retirement and disability benefits that the rest of the population could not. I use this differential access to examine the labour supply

effects of these programs. WWII veterans could access the Service Pension, a pension with similar benefit levels and means tests to the normal Age Pension, but available five years earlier at the age of 60. A large share also accessed a disability pension provided by the Department of Veterans' Affairs. My primary approach to identification is to use the large differences in World War II service across single year birth cohorts of Australian men uncovered by Cousley et al. (2017). Results from this approach suggest that WWII service significantly lowered participation, but only over the ages of 60 to 64. A 10 percentage point rise in the share of a cohort that served overseas during WWII is estimated to have lowered participation of the cohort by 2.7 percentage points over these ages. I also compare the retirement expectations of WWII veterans and nonveterans at middle-age. Veterans did expect to retire earlier, but again only over the ages of 60 to 64. The age distribution of these participation effects indicates they were likely caused by the Service Pension.

David Rodgers is studying for a PhD in economics at the University of New South Wales, where he is affiliated with the School of Economics and CEPAR. His PhD research is on the macroeconomic consequences of population ageing. David has worked as an economist at the Reserve Bank of Australia and the Australian Prudential Regulation Authority, and in credit risk and stress testing roles at CBA and HSBC.

Can a Non-Linear Taper Rate on the Age Pension be Welfare Improving?

Daniel Wheadon (UNSW, CEPAR)

Abstract: Several countries, including Australia, have a means-tested public age pension, where the pension is restricted to those with limited income or wealth, and the size of the pension paid to eligible households declines as either wealth or income increases. Means testing the age pension can reduce the overall fiscal burden of a pension system, relative to a universal system, but it also can create disincentives for households to work and save. Policymakers can influence both the extent and intensity of these disincentives through their choices regarding the maximum level and the taper (withdrawal) rate of the pension. In particular, a high taper rate can induce strong disincentives for households to work or save, but will affect a relatively small number of households. Conversely a low rate will produce weaker disincentives to work or save but will affect a larger group of households. Previous attempts to identify the optimal taper rate have generally assumed that this rate is constant, however allowing the taper rate to vary by household income or assets may provide an additional tool for policymakers to manage the household incentives without affecting pension eligibility. In this paper, I develop an OLG model of the Australian economy to investigate the effects of a pension function with an adjustable, or non-linear, taper rate on household behaviour and welfare. I consider two alternative specifications to the linear pension function; a progressive function, where the taper rate increases as income rises, and a regressive pension function with a declining taper rate, and seek to identify whether either specification can generate improvements in expected welfare.

Daniel Wheadon completed a B.Ec (hons) at the University of New South Wales in 2001 and an M.Ec in 2014. From 2002 to 2017, Daniel worked as a Senior Analyst at the Reserve Bank of Australia in the Economic Analysis, Banking and Payments Policy departments, with responsibilities that included from analysis of commodity prices, financial aggregates, housing and innovations in payments technologies, as well as anti-money laundering compliance and regulatory oversight of Australia's real-time gross settlement (RTGS) system. Daniel is currently a CEPAR PhD candidate at UNSW, researching optimal pension design in the context of an aging population.

13:00 – 14:00	*Lunch*

14:00 – 15:30	**SESSION 7 - PLENARY** ***Chair: Hazel Bateman, CEPAR, UNSW Sydney***

High-Performance DC Pension Plans: Design, Technology and the Role of Public Policy

Gordon Clark (Oxford University, UK; Sir Louis Matheson Distinguished Visiting Professor, Monash University)

Abstract: Defined contribution pensions have supplanted defined benefit pensions in many OECD countries with significant implications for the retirement welfare of plan participants. New models of management have come to market, promising customised solutions for the retirement aspirations of different kinds of participants within and without conventional DC plans. These developments are charted recognising the coexistence of different models of management and the increasing sophistication of pension providers. The rudiments underpinning the latest model of management are explained and the conditions under which this model may be successful are noted. As DC systems come to maturity around the world, significant challenges remain in making good on pension adequacy. Here, industry innovation and best practice are balanced against a significant role for public policy.

Professor Gordon L Clark DSc (Oxon) FBA is a Senior Consultant and Emeritus Professor at the Smith School of Enterprise and the Environment with cross-appointments in the Saïd Business School and the School of Geography and the Environment at Oxford University. He holds a Professorial Fellowship at St Edmund Hall, Oxford. He is as well, Sir Louis Matheson Distinguished Visiting Professor at Monash University's Faculty of Business and Economics (Melbourne) and a Visiting Professor at Stanford University. Previous academic appointments have been at Harvard's Kennedy School of Government, Harvard Law School (Senior Research Associate), the University of Chicago, Carnegie Mellon's Heinz School and Monash University. Other honours include being Andrew Mellon Fellow at the US National Academy of Sciences and Visiting Scholar Deutscher Akademischer Austausch Dienst at the University of Marburg.

Defaults, Disclosures, Advice and Calculators: One size does *not* fit all

Susan Thorp (The University of Sydney; CEPAR)

Abstract: In two on-line incentive-aligned experiments (each with over 1000 participants) savers were asked to choose the least cost of four investment options in which to invest their current balance in each of 40 rounds. In the first experiment participants were randomly assigned to four treatments: baseline (where they received no additional information); a disclosure nudge; a default nudge; and advice. The second experiment repeated the first, except that the intervention treatments were crossed factorially with presentation of a simple or 'smart' calculator. In the first experiment there was no improvement in accuracy for disclosure or default relative to baseline. There was some evidence for bimodality as some participants learnt how to calculate the least cost fund, while others appear to (blindly) follow default and disclosure information. However, advice led to immediate improvements in accuracy. In the second experiment, provision of a boost in the form of simple or smart calculators to participants improved accuracy. Our results reinforce the importance of boosting consumer's competence in how to make decisions, rather than solely pushing them towards a not-always-better option.

Susan Thorp is Professor of Finance and a CEPAR Associate Investigator at the University of Sydney, where she is Associate Dean Research and Associate Dean Research Education. Prior to joining the University of Sydney in 2015, she was Professor of Finance and Superannuation at the University of Technology Sydney. Susan has an honours degree in Economics from the University of Sydney, and a PhD in Economics from the University of New South Wales. Susan researches household and consumer finance with a particular focus on retirement savings and decumulation. She uses theoretical, empirical and experimental techniques to understand financial decision making. Much of this research has tested the way decision makers respond to advisors, disclosures and choice architecture. Financial econometrics is another concentration of Susan's research. She has studied the increased integration that occurs in financial markets during crises, with a recent focus on commodity markets. Susan has published 40 papers in international academic journals. She has led and participated in grant projects attracting over $3 million dollars in public and industry funding. Susan is also a regular contributor to consumer finance and superannuation policy discussions, and her research is cited by major public reviews and inquiries. Susan is a member of the Steering Committee of the Melbourne Mercer Global Pensions Index, an annually compiled internationally recognised index of pension system quality, a member of the CEDA Council on Economic Policy and a member of the Research Committee of the OECD/International Network on Financial Education.

Longevity Products in Australia

Emily Barlow, David Knox (Mercer)

Abstract: There are five income products in Australia that provide longevity protection; namely the age pension, defined benefit pensions, lifetime annuities, deferred annuities and group self annuities (GSAs). This paper will consider the features of each of these income products and then analyse the similarities and differences between lifetime annuities, deferred annuities and GSAs. The paper will also discuss the challenges faced by superannuation funds and financial advisers in introducing longevity products as part of a hybrid portfolio. In part, the presentation will also reflect Mercer's experience in the development of LifetimePlus – Australia's first GSA.

Emily Barlow is a Principal in Mercer's Institutional Wealth business. In her role as a Senior Investment Consultant, she is responsible for the provision of strategic investment advice to a broad range of institutional clients with a specialty in superannuation and post-retirement investment solutions. She is based in Sydney.
Prior to joining Mercer in May 2018, Emily gained six years of experience working in the investment and pensions industry in the United Kingdom including roles at SSGA as a European defined contribution (DC) investment consultant, where she delivered member-focused investment solutions based on in-depth consumer research; and, at Zurich as a corporate propositions consultant, working on the management and development of DC products. Emily holds a Master of Chemistry from the University of Oxford, the Investment Management Certificate (UK), and a Diploma in Regulated Financial Planning. Emily is a holder of the right to use the Chartered Financial Analyst designation.

David Knox BA PhD FIAA is a Senior Partner at Mercer and Senior Actuary for Australia. He is the National Leader for research and policy; actuary to the Tasmanian and Western Australian public sector superannuation plans; and lead author of the Melbourne Mercer Global Pension Index, now in its eleventh year. Before joining Mercer, David was at PricewaterhouseCoopers and prior to that he was the Foundation Professor of Actuarial Studies at The University of Melbourne. In his two decades in academia, he acted as a consultant to a range of financial organisations, in both the private and public sectors, specialising in pensions and retirement incomes. He has spoken and written widely in this area and has served on many Government and industry committees. David was an independent Board member of Australian Prudential Regulation Authority from 1998 to 2003 and President of the Institute of Actuaries of Australia in 2000.

15:30 **CLOSING REMARKS**

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