31ST COLLOQUIUM ON PENSIONS AND RETIREMENT RESEARCH

Co-hosted by the ARC Centre of Excellence in Population Ageing Research (CEPAR) and the School of Risk and Actuarial Studies, UNSW Business School

5-6 December 2023: Colombo Lecture Theatres, UNSW Sydney

7 December 2023: Online Session, sponsored by IPRA

Disclaimer: All details in this program handbook are correct at the time of printing. If unavoidable changes are required, we apologise for any inconvenience. The Conference Organisers and Committee, including CEPAR and UNSW personnel, will not accept liability for damages of any nature sustained by participants, or loss of or damage to their property as a result of this conference.

Enquiries: cepar@unsw.edu.au | +61 2 9931 9202 | cepar.edu.au

The Colloquium on Pensions and Retirement Research is co-hosted by the ARC Centre of Excellence in Population Ageing Research (CEPAR) and the School of Risk & Actuarial Studies, UNSW Business School. The Colloquium is a unique annual event, bringing together academia, government, and industry to discuss the latest research on pensions, superannuation and retirement.

SCIENTIFIC COLLOQUIUM COMMITTEE

- Hazel Bateman, CEPAR, School of Risk & Actuarial Studies, UNSW Business School
- David Bell, CEPAR, The Conexus Institute
- Katja Hanewald, CEPAR, School of Risk & Actuarial Studies, UNSW Business School
- George Kudrna, CEPAR, UNSW Business School

Add the tag **#ceparColloquium** for content posted on **social media** relating to the CEPAR International Conference, and tag CEPAR:

- **Twitter**: @CEPAR_research
- **LinkedIn**: linkedin.com/school/cepar-research

PROGRAM

To view the program online:
- scan the QR code with your phone camera
- or visit the conference website via your web browser at

cepar.edu.au/news-events/events/colloquium2023

Dietary Requirements: During catering breaks, please check for labels to match dietary requirements or ask a catering staff member.

A Networking Reception will be held on 5 December, sponsored by the Innovations in Risk, Insurance and Superannuation (IRIS) Knowledge Hub. The networking reception is open to all participants and will be held in the foyer.

Visitor Safety Information - The health and safety of our patrons is our top priority, and this event will abide by the Public Health Order prevailing at the time. Please follow our conditions of entry.

Health and safety protocol:

- While wearing **masks** is not mandatory *(as of 15 November 2023)*, we strongly encourage you to wear a mask indoors and on public transport at this time, especially if you cannot physically distance. Please bring a mask with you.
- Maintain physical distancing and density limits of not more than 1 person per 2sqm indoors
- Wash or sanitise your hands regularly
- Keep a safe distance from others and avoid physical contact

Public Transport - The UNSW Kensington Campus is easily accessible via public transport. Call the Transport Infoline on 131 500 or visit transportnsw.info.
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.

Paid casual and visitor parking is offered via the CellOPark App and ‘pay by plate meters’ at various locations. Parking is free after 7.30 pm weekdays and on weekends and public holidays. Further information is available at www.estate.unsw.edu.au/getting-here/parking-campus.

There are two major carparks on UNSW Kensington Campus:

- Barker Street Carpark – Entry via Gate 14, Barker Street.
- Botany Street Carpark – Enter via Gate 11, Botany Street.

Internet access: Visitors can access Wi-Fi across all UNSW campuses by connecting to the UNSW Guest Network. Please note, Guest Wi-Fi is not intended for existing staff or students. If you are an existing UNSW staff or student, please use the Wi-Fi for Staff and Students service.
In order to connect to the guest wi-fi network please follow the following steps:
Step 1 - Navigate to Wi-Fi settings and connect to the '**UNSW Guest**' Network.
Step 2 - You will be redirected to a registration screen and be asked to provide your name and e-mail details. You will also need to accept the T&Cs and Privacy Statement before proceeding.
For further information, please visit www.myit.unsw.edu.au/services/guests/wi-fi-guests or contact the IT Service Centre at (02)9385 1333 or ITServiceCentre@unsw.edu.au.

Media may attend sessions and are asked to identify themselves and their organisation when asking questions/making comments.

ASSISTANCE

If you require on-site assistance at the conference, please see a member of the Colloquium Committee.

INFORMATION FOR PRESENTERS

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

- Arrive at their session venue at least 15-30 minutes before the start of the session to meet with your session chairperson and familiarise yourself with the venue room.
- Check / upload your PowerPoint/PDF slides onto the lecture computer (onto the Desktop) in the session room and make sure that your file runs appropriately.
- Your session chairperson will briefly introduce you to the audience before your presentation starts.
- After each presentation, the session chair will facilitate the Q&A
- Session chairs will keep to these timings, so have our presentations prepared accordingly.

Program schedule (subject to minor changes)

5 December 2023 (Day 1)

Venue: Colombo House Theatres, UNSW Sydney

Time in Sydney (AEDT time zone)	Day 1 Program Schedule	Venue
8.30-9.00am	Arrival and registration	Foyer
9.00-9.10am	Welcome and Opening Remarks	Colombo A
9.10-10.30am	Session 1: Plenary	Colombo A
10.30-11.00am	Morning Tea	Foyer
11.00am-12.30pm	Sessions 2A, 2B, 2C: Concurrent Papers	Colombo A,B,C
12.30-1.30pm	Lunch	Foyer
1.30-3.00pm	Session 3: Plenary	Main Room
3.00-3.30pm	Afternoon Tea	Foyer
3.30-5.00pm	Sessions 4A, 4B, 4C: Concurrent Papers	Colombo A,B,C
5.00pm	Closing Remarks Day 1	Colombo A,B,C
5.00-7.00pm	Networking Reception, sponsored by the Innovations in Risk, Insurance and Superannuation (IRIS) Knowledge Hub	Foyer

6 December 2023 (Day 2)

Venue: Colombo House Theatres, UNSW Sydney

Time in Sydney (AEDT time zone)	Day 2 Program Schedule	Venue
8.30-9.00am	Arrival and registration	Foyer
9.00-9.05am	Welcome Remarks	Colombo A
9.05-10.30am	Session 5: Panel	Colombo A
10.30-11.00am	Morning Tea	Foyer
11.00am-12.30pm	Sessions 6A, 6B: Concurrent Papers	Colombo A,B
12.30-1.30pm	Lunch	Foyer
1.30-3.00pm	Session 7: Plenary	Colombo A
3.30-3.40pm	Closing Remarks Announcement of the Best Student Presentation Award	Colombo A

7 December 2023 (Day 3)

ONLINE, sponsored by the International Pension Research Association (IPRA)

Time in Sydney (AEDT time zone)	Day 3 Program Schedule (online)
8.00-8.05pm	Welcome and Opening Remarks
8.05-9.05pm	Session 1: Retirement Benefits
9.05-9.10pm	Break
9.10-10.30pm	Session 2: Pension Design
10.30-10.40pm	Break
10.40pm-12.00am	Session 3: Pension Decisions
12.00-12.10am	Break
12.10-1.30am	Session 4: Pension Systems
1.30am	Closing remarks

Status: 30 November 2023

PROGRAM (subject to minor changes)			
Day 1: 5 December 2023, Colombo House Theatres, UNSW Sydney *Please note: the times shown are Australian Eastern Daylight Time (AEDT)*			
Time	**Session details**	**Presenter**	**Venue**
8.30-9.00am	***Arrival and Registration***		***Foyer***
9.00-9.10am	**WELCOME AND OPENING REMARKS** Hazel Bateman (ARC Centre of Excellence in Population Ageing Research (CEPAR), UNSW Sydney)		**Colombo A**
9.10am-10.30am	**SESSION 1: PLENARY – Superannuation and Pension Decisions** Chair: Hazel Bateman (UNSW Sydney; CEPAR)		**Colombo A**
9.10-9.50am	Pathways for Directing Members into Retirement Solutions	Geoff Warren (The Conexus Institute; Australian National University (ANU))	
9.50-10.30am	White-Labels, Brands and Trust: How Mutual Fund Labels Affect Retirement Portfolios	Julie Agnew (College of William and Mary)	
10.30am-11.00am	***Morning Tea***		***Foyer***
11.00am-12.30pm	**CONCURRENT SESSION 2: CONTRIBUTED PAPERS**		
	Session 2A: Reverse Mortgages Chair: Katja Hanewald (UNSW Sydney; CEPAR)		
11.00-11.30am	Home Equity Release Products and Retirement Provision	Caroline Knebel (Leibniz Centre for European Economic Research; Goethe University)	**Colombo A**
11.30am-12.00pm	Demand for Reverse Mortgages: Behavioural Explanations	Hanlin Lou (UNSW Sydney; CEPAR)	**Colombo A**
12.00-12.30pm	Recent Developments in Home Equity Retirement Funding	Josh Funder (Household Capital)	**Colombo A**

	Session 2B: Retirement Income Issues Chair: Gaoyun Sophie Yan (UNSW Sydney; CEPAR)		
11.00-11.30am	Facilitating a Trustee-Directed Retirement Solution	Pamela Hanrahan (UNSW Sydney; Johnson Winter Slattery)	**Colombo B**
11.30am-12.00pm	Beyond Retirement Income: Cognition and Age Inclusion Issues for Superannuation Funds	Benedict Davies (UniSuper)	**Colombo B**
12.00-12.30pm	Identifying Supply-Side Obstacles to the Provision of Life Annuities	Anthony Asher (UNSW Sydney)	**Colombo B**
	Session 2C: Climate Risk Chair: George Kudrna (UNSW Sydney; CEPAR)		
11.00-11.30am	Annual Super Fund Members' Meetings: The Evidence So Far	Scott Donald (UNSW Institute of Climate Risk and Response)	**Colombo C**
11.30am-12.00pm	Collective Influence on Pension Investment: ESG Needs from Pension Participants and Beneficiaries	Yadi Yang (Erasmus University Rotterdam; Asset Management NV)	**Colombo C**
12.30pm-1.30pm	*Lunch*		*Foyer*
1.30-3.00pm	**SESSION 3: PLENARY – Retirement Decisions** Chair: Susan Thorp (The University of Sydney; CEPAR)		**Colombo A**
1.30-2.00pm	Retirement Eggs and Baskets: Lifecycle Portfolio Dynamics	Loretti Isabella Dobrescu (UNSW Sydney; CEPAR)	
2.00-2.30pm	Insurer's Management Discretion: Self-Hedging Endogenous Participating Life Insurance	Karim Barigou (Université Lava)	
2.30-3.00pm	Retirement Income, Confidence and Gender: Insights from the How Australia Retires Survey	Junhao Liu (Vanguard Australia; CEPAR), and Kate McKinnon (Vanguard Australia; CAMA)	

3.00-3.30pm	***Afternoon Tea***		***Foyer***
3.30-5.00pm	**CONCURRENT SESSION 4: CONTRIBUTED PAPERS**		
	Session 4A: Retirement and Retirement Adequacy Chair: George Kudrna (UNSW Sydney; CEPAR)		
3.30-4.00pm	Welfare Implications of Employment Protection for Older Workers	Todd Morris (University of Queensland)	**Colombo A**
4.00-4.30pm	When Do Australians Expect to Retire?	Paul Gerrans (University of Western Australia)	**Colombo A**
4.30-5.00pm	The Impact of Divorce and Financial Literacy on the Financial Outcomes of Retirees	Elizabeth Mitchell (Griffith University)	**Colombo A**
	Session 4B: Reverse Mortgages and Aged Care Financing Chair: Bei Lu (UNSW Sydney; CEPAR)		
3.30-4.00pm	Postcode-Level Reverse Mortgages: Longevity Risks, House Price Risks, and Welfare Gain	Lingfeng Lyu (UNSW Sydney; CEPAR)	**Colombo B**
4.00-4.30pm	Novel Utility-Based Life-Cycle Models to Optimise Income in Retirement	Yunxiao Chelle Wang (UNSW Sydney; CEPAR)	**Colombo B**
4.30-5.00pm	Developing Private Long-Term Care Insurance in Australia: Pricing Analysis for Healthy and Ill Australian Retirees	Kyu Park (UNSW Sydney; CEPAR)	**Colombo B**
	Session 4C: Variable Annuities Chair: Francesco Ungolo (UNSW Sydney; CEPAR)		
3.30-4.00pm	Pooled Contingent Annuity	Vivian Dang (UniSuper), Victor Huang (Milliman), and Young Tan (Aware Super)	**Colombo C**
4.00-4.30pm	Variable Annuities: A Closer Look at Ratchet Guarantees, Hybrid Contract Designs, and Taxation	Len Garces (University of Technology Sydney; CEPAR)	**Colombo C**

4.30-5.00pm	Shapley Decomposition-Based Selection of Representative Contracts for Variable Annuity Valuation	Gayani Thalagoda (UNSW Sydney; CEPAR)	**Colombo C**
5.00pm	**CLOSING REMARKS FOR DAY 1**	Session chairs	**Colombo A, B, C**
5.00-7.00pm	***Networking Reception****, sponsored by the Innovations in Risk, Insurance and Superannuation (IRIS) Knowledge Hub*		***Foyer***

PROGRAM (subject to minor changes)			
Day 2: 6 December 2023 (AEDT), Colombo House Theatres, UNSW			
Time	**Session details**	**Presenter**	**Venue**
8.30-9.00am	***Arrival and Registration***		***Foyer***
9.00-9.05am	**WELCOME AND INTRODUCTORY REMARKS**		**Colombo A**
9.05am-10.30am	**SESSION 5: INDUSTRY/POLICY PANEL** Chair: Hazel Bateman (UNSW Sydney; CEPAR)		**Colombo A**
	What Does an Effective Retirement Income Strategy Look Like? **Panellists:** • Jacki Ellis (Head of Retirement Segment, Aware Super) • Lynn Kelly (First Assistant Secretary, Retirement, Advice and Investment Division, The Treasury) • Jeremy Cooper (Chair of Advisory Board, Conexus Institute) • Brnic Van Wyk (Head of Asset Liability Management, Australian Retirement Trust)		
10.30am-11.00am	***Morning Tea***		***Foyer***
11.00am-12.30pm	**CONCURRENT SESSION 6: CONTRIBUTED PAPERS**		
	Session 6A: Member Behaviour Chair: Hanlin Lou (UNSW Sydney; CEPAR)		
11.00-11.30am	Aware Super's My Retirement Planner: A New Retirement Calculator that takes into Account Risks and Empowers Better Financial Decision Making	Estelle Liu (Aware Super)	**Colombo A**
11.30am-12.00pm	Diverse Effects of Recurrent Communication Boosts and Nudges on Retirement Savings in the Long Run	Nguyen Bang Chau Victoria Hoang (University of Sydney; CEPAR)	**Colombo A**
12.00-12.30pm	Innovative Combo Product Design Embedding Variable Annuity and Long-Term Care Insurance Contracts	Yawei Wang (UNSW Sydney; CEPAR)	**Colombo A**

	Session 6B: Pension Systems and Demographics Chair: Akshay Shanker (UNSW Sydney; CEPAR)		
11.00-11.30am	Pension Systems (Un)sustainability and Fiscal Constraints: A Comparative Analysis	Vito Polito (University of Sheffield; CESifo; Netspar)	**Colombo B**
11.30am-12.00pm	Population Norms of Intrinsic Capacity in 14 European Countries and Israel: Variations and Implications for Pension Eligibility	Meimei Chen (Macquarie University Centre for the Health Economy; Australian Institute of Health Innovation)	**Colombo B**
12.00-12.30pm	Heterogeneous Lifespan and Retirement Financing with Private Pensions	George Kudrna (UNSW Sydney; CEPAR)	**Colombo B**
12.30pm-1.30pm	***Lunch***		*Foyer*
1.30-3.00pm	**SESSION 7: PLENARY - Lifecycle Decisions** Chair: Katja Hanewald (UNSW Sydney; CEPAR)		**Colombo A**
1.30-2.00pm	Can an Actuarially Unfair Tontine Be Optimal?	Steven Vanduffel (Vrije Universiteit Brussel)	
2.00-2.30pm	Borrower Preferences for Mortgage Attributes: The Roles of Confusion, Importance and Advice	Susan Thorp (University of Sydney; CEPAR)	
2.30-3.00pm	Disentangling Drawdown	Cameron Stewart (Super Consumers Australia)	
3.00-3.30pm	Flexible Retirement Choices: Switching Retirement Savings into an Annuity	Peter Smith (University of York; CAMA)	
3.30-3.40pm	**CLOSING REMARKS** **Announcement of the Best Student Presentation Award**		**Colombo A**

ONLINE SESSION PROGRAM (subject to minor changes)			
DAY 3: 7 December 2023 (AEDT) **Online via Zoom** *Please note: the times shown are Australian Eastern Daylight Time (AEDT)*			
Time (AEDT Time zone)	**Session details**	**Presenter/Chair**	**Presenter's Time Zone**
8.00-8.05pm	**Welcome & Opening Remarks**	Hazel Bateman (CEPAR; IPRA; UNSW Sydney)	
8.05-9.05pm	**Session 1: Retirement Benefits**	Chair: John Piggott CEPAR; IPRA; UNSW Sydney)	
8.05-8.25pm	Longevity Pessimism, Misinformation, and Pension Choice	Andre Lot (University of Sydney)	10.05-10.25am on 7 December CET (UTC+1): 10 hours behind Sydney
8.25-8.45pm	Anticipated and Experienced Regret in Annuity Choices: An Experimental Study	Koen van Boxel (Leibniz University)	10.25-10.45am on 7 December CET (UTC+1): 10 hours behind Sydney
8.45-9.05pm	On which Socioeconomic Groups do Reverse Mortgages have the Greatest Impact? Evidence from Spain	M. Mercè Claramunt (University of Barcelona)	10.45-11.05am on 7 December CET (UTC+1): 10 hours behind Sydney
9.05-9.10pm	*Break*		
9.10-10.30pm	**Session 2: Pension Design**	Chair: Dariusz Stanko (IOPS; IPRA)	
9.10-9.30pm	Economics of Widowhood Mortality in Adult Women in India: Role of Paid Work, Pension and Household Economic Status	Babul Hossain (International Institute for Population Sciences (IIPS))	3.40pm-4.00pm on 7 December IST (UTC+5:30): 5:30 hours behind Sydney

9.30-9.50pm	Reform of the Dutch pension system: a legal comparison of the Dutch and Australian occupational pension system	Emma Suzanne van Aggelen (Tilburg University; KU Leuven; Netspar)	11.30-11.50am on 7 December CET (UTC+1): 10 hours behind Sydney
9.50-10.10pm	'Relabelling' of Individual Early Retirement Pension in Finland: application and behavioural responses using Finnish register data	Ricky Kanabar (University of Bath; Netspar)	10.50-11.10am on 7 December GMT (UTC+0): 11 hours behind Sydney
10.10-10.30pm	Gender Gaps in the Chilean Pension System	Maria Fernanda Toledo, and Ximena Quintanilla (Superintendence of Pensions Chile)	8.10-8.30am on 7 December CLST (UTC-3): 14 hours behind Sydney
10.30-10.40pm	*Break*		
10.40pm-12.00am	**Session 3: Pension Decisions**	Chair: Mike Orszag (WTW; IPRA)	
10.40-11.00pm	Are Risk Preferences Stable for Impactful Financial Decisions?	Jorgo Goosens (Radboud University Nijmegen; Tilburg University; APG; Netspar)	12.40-1.00pm on 7 December CET (UTC+1): 10 hours behind Sydney
11.00-11.20pm	Improving Pension Information: Experimental Evidence on Learning Using Online Resources	Denise Laroze (Universidad de Santiago de Chile) and Paulina Granados (Superintendencia de Pensiones Chile)	9.00-9.20am on 7 December CLST (UTC-3): 14 hours behind Sydney
11.20-11.40pm	Friends with Benefits: Strengthening Peer Effects through Aligning Reference Group Attributes to Consumer Traits	Pieter Verhallen (North Carolina State University; Netspar)	7.20-7.40am on 7 December EST (UTC-5): 16 hours behind Sydney
11.40pm-12.00am	Quantifying the Insurance Effects of Japanese Social Insurance Policies on Household Structure	Charles Leung (City University of Hong Kong)	8.40-9.00pm on 7 December HKT (UTC+8): 3 hours behind Sydney

12.00-12.10am	*Break*		
12.10-1.30am (8 December)	**Session 4: Pension Systems**	Chair: Hazel Bateman (CEPAR; IPRA; UNSW Sydney)	
12.10-12.30am	Population Aging and Optimal Fiscal Progressivity	Fan Yang (McGill University)	8.10-8.30am on 7 December EST (UTC-5): 16 hours behind Sydney
12.30-12.50am	Dynamic Allocation Strategy with Retirement Bonds: The Case of Brazil	Arun Muralidhar (AlphaEngine Global Investment Solutions)	7.30-7.50am on 7 December CST (UTC-6): 17 hours behind Sydney
12.50-1.10am	“Growing Pains” in China’s Social Security System	Xincheng Qiu (Arizona State University)	6.50-7.10am on 7 December MST (UTC-7): 18 hours behind Sydney
1.10-1.30am	Allocation of Longevity Gains in Public Pension Plans	Eduard Ponds (Tilburg University; APG Asset Management)	3.10-3.30pm on 7 December CET (UTC+1): 10 hours behind Sydney
1.30am	**Closing Remarks**	Hazel Bateman (CEPAR; IPRA; UNSW Sydney)	

Day 1: 5 December 2023

SESSION 1: PLENARY – Superannuation and Pension Decisions

Pathways for Directing Members into Retirement Solutions

Geoff Warren (The Conexus Institute; Australian National University (ANU))

Abstract: We outline a choice architecture for Australia's retirement income system by identifying potential pathways through which members could find their way to a retirement solution that is suitable for their individual needs. The pathways include member self-direction, or member choice; adviser direction through either limited or comprehensive personal financial advice; and three forms of trustee direction – recommendation, assignment and default. For each pathway, we outline its nature, identify strengths and opportunities as well as weaknesses and challenges; and scope out what is required from a policy and operational perspective for the pathway to operate effectively. We provide a useful reference to inform the development of policy, regulations and the retirement income strategies of superannuation funds under the Retirement Income Covenant, in particular the components that relate to member engagement and guidance. In particular, we highlight the need to facilitate the trustee-directed pathways. We see our contribution as particularly relevant as the Government considers its response to the Quality of Advice Review.

Bio: Dr Geoff Warren is Research Director at the Consensus Institute and an Associate Professor with the Australian National University. He is a member of various investment and research advisory boards including: Atlas Infrastructure, ASIC Consultative Panel, Brandes Center, Conexus Institute, the Salvation Army and Super Consumers Australia. Geoff's research has an applied emphasis with particular focus on superannuation, retirement and fund management. Prior to pursuing an academic career, he spent over 20 years in investment markets spanning stock research, investment strategy, head of research, equity portfolio management and asset consulting.

White-Labels, Brands and Trust: How Mutual Fund Labels Affect Retirement Portfolios

Julie Agnew (College of William and Mary)

Abstract: This paper investigates how brand trust influences participants' risk and return expectations, as well as asset allocations. In two experiments, participants choose between generic "white-label" investment options and equivalent investment options branded with either the investment managers' or employers' names depending on the study. Engaging over 900 employed retirement-plan participants from the Understanding America Study panel, participants make incentivized investment allocations and predict investment returns using distribution builders. Our results show participants reporting higher expected returns and lower perceived risk for options displaying highly trusted brand names compared to options with poorly trusted brand names. This result appears driven by individuals with low financial literacy. In addition, we show that perceived risk and return influence asset allocations and that allocations to branded assets increase with brand trust. Together, the results have important implications for how plan sponsors and fund managers present investment options to participants.

Bio: Julie Agnew is the Class of 2018 Professor of Finance and Economics. From 2014 until 2016, she was the Inaugural Director of the Boehly Center for Excellence in Finance at William & Mary's Raymond A. Mason School of Business. She is a TIAA-CREF Institute Fellow, on the Advisory Board of the Wharton School's Pension Research Council, a former elected member of the Defined Contribution Plans Advisory Committee (DCPAC) for the Virginia Retirement System, and a Research Associate for the Center for Retirement Research at Boston College. She is also a board member of C&F Bank. From 2009-2011, she was the Co-Director of the Center for Interdisciplinary Behavioral Finance Research.

Her research and consulting activities focus on behavioural finance and its relationship to financial decisions made by individuals in their retirement plans. She has presented her research at several national and international conferences, testified as an invited expert witness in front of the Senate's Committee on Health, Education, Labor and Pensions and published in journals that include the American Economic Review, the Journal of Financial and Quantitative Analysis, Management Science (forthcoming), the Journal of Pension Economics and Finance and the Journal of Behavioral Finance. Additionally, she has won several nationally competitive research grants amounting to over one million dollars of funding.

Prior to pursuing her doctorate, Dr. Agnew worked as an Analyst in investment banking for Salomon Brothers in New York City and as an Equity Research Associate for Vector Securities International in Chicago. A former Fulbright Scholar to Singapore, Dr. Agnew co-authored a book examining strategic business opportunities in Indonesia, Singapore and Malaysia. Dr. Agnew earned a B.A. degree in Economics (High Honors) and a minor in Mathematics from William & Mary. She graduated Magna Cum Laude and is a member of Phi Beta Kappa. She received a Ph.D. in Finance from Boston College in 2001. In 2012, she was a Senior Visiting Fellow affiliated with the School of Risk and Actuarial Studies in the Australian School of Business at the University of New South Wales in Sydney, Australia.

CONCURRENT SESSION 2: CONTRIBUTED PAPERS

Session 2A: Reverse Mortgages

Home Equity Release Products and Retirement Provision

Caroline Knebel (Leibniz Centre for European Economic Research; Goethe University)

Abstract: Many people invest in real estate as a mean of saving for retirement. While living rent-free during retirement is an advantage, the accumulated wealth is tied up in the real estate. If homeowners wish to release their home equity, while remain living in their property, they face a complex long-term financial decision. In this paper, we aim to answer the research questions: Is the home equity release decision determined by the offer? What drives the (low) demand for such products?

We conduct a survey experiment in Germany during fall 2020 with 2,660 participants. The participants are asked to recommend one of the three options: real estate life annuity, reverse mortgage, or no financial product. To better understand the effect of the offer, the three options are presented either simultaneously or sequentially.

Overall, the difference between the final decisions in the two variants is not statistically significant, hinting towards low demand driving the results. As potential drivers of the low demand, we analyse among others the role of home ownership status of the participants, their bequest motive, and their level of financial literacy.

We find that homeowners and those with a bequest motive are more likely to recommend "no financial product". This hints towards reluctance to part with one's property. Interestingly, participants with lower financial literacy are more likely to recommend the financial products. This may highlight the need for providing careful information to households when they make this complex long-term decision.

Bio: Caroline Knebel studied economics at the Universities of Tübingen and Munich (LMU) in Germany. During her bachelor studies, she spent a year abroad at the Université Laval, Canada. In her master's thesis, she analysed the influence of additional pension information on the gender gap in financial planning for retirement. Since October 2018, she has been a doctoral student at the Graduate School for Economics, Finance, and Management (GSEFM) at Goethe University Frankfurt, Germany.
Caroline Knebel joined ZEW's Research Unit "Pensions and Sustainable Financial Markets" in December 2019. The ZEW – Leibniz Centre for European Economic Research is a non-profit economic research institute specializing in applied economic research. Her research interests lie in the field of household finance. Among others, she is working on individual savings behaviour, financial literacy, and old age provision.

Demand for Reverse Mortgages: Behavioural Explanations
Hanlin Lou (UNSW Sydney; CEPAR)

Abstract: Economic theory predicts that reverse mortgages should be popular, but the actual take-up rate of reverse mortgages is still low. We study the role of behavioural factors in the "reverse mortgage puzzle." We introduced Australian homeowners to a well-designed reverse mortgage product through an online survey and elicited their demand for the product. In the survey, information treatments addressing the mental accounting effect, narrow bracketing, and product complexity were randomly assigned to participants. Comparisons in stated demand among treatment groups allow us to identify the effect of each behavioural factor. We find that behavioural factors significantly affect individuals' reverse demand on the intensive margin. In particular, reminding individuals that their housing wealth could be used to finance their retirement, like other wealth (mental accounting framing), can motivate them to extract more housing wealth. By contrast, we find that personal and socioeconomic factors matter more in determining individuals' propensity to use reverse mortgages (demand on the extensive margin). Our findings aid policymakers and financial institutions in understanding reverse mortgage demand and using behavioral instruments to promote the usage of reverse mortgages.

Bio: Dr Hanlin Lou is a Research Fellow at the Centre of Excellence in Population Ageing Research (CEPAR). Before joining UNSW, he held the position of a postdoctoral research fellow in behavioural financial economics at the University of Sydney. Hanlin obtained his PhD in Economics from the University of Technology Sydney in 2022. His research centres on behavioural economics, behavioural financial economics, and applied econometrics. Furthermore, Hanlin's research encompasses the design and execution of field experiments, laboratory experiments, and online experiments. Hanlin also collaborates with industrial partners to explore the implications of behavioural insights for enhancing individuals' financial well-being.

Recent Developments In Home Equity Retirement Funding
Josh Funder (Household Capital)

Abstract: This presentation will report and discuss recent trends on home equity retirement funding in Australia. As a result of the ageing population there are an increasing number of Australians retiring every year. A falling percentage of these retire mortgage free and the current macroeconomic environment has increased exposure to both higher interest rates and inflation. However, it has been a record year for Australian home equity retirement funding. The Home Equity Access Scheme (HEAS) is particularly popular due to subsidised pricing. Overall there is growing awareness of Pillar Three retirement funding.

Bio: Josh Funder is CEO and Managing Director of Household Capital. Prior to founding the company in 2016, he was a director of Celladon Inc (NASDAQ: CLDN) and spent over a decade as a partner at GBS, Australia's largest venture funds management firm. Josh is a co-founder, director and former chairman of Per Capita, whose research on longevity and positive ageing formed part of the inspiration for Household Capital. Josh earned B.Sc. and LL.B. degrees at Melbourne University, an LL.M. degree at the London School of Economics and a D.Phil in intellectual property for biotechnology from Oxford University.

Session 2B: Retirement Income Issues

Facilitating a Trustee-Directed Retirement Solution

Pamela Hanrahan (UNSW Sydney; Johnson Winter Slattery)

Abstract: We propose a framework to facilitate trustee-directed retirement solutions made available by a trustee to existing super fund members. Essentially, it 'collectivizes' the R&D costs of, and legal risk attaching to, the standardised elements of the personal financial product advice process. These elements are the questionnaire, the algorithm, and the guidance material.

The proposed framework is for use by APRA-regulated super funds, who have demonstrated to APRA that they have appropriate product range.The usual laws regulating the provision of personal financial product advice continue to apply to the trustee when it recommends or assigns the member to a financial product. However, a trustee that correctly uses the framework is taken to have met relevant legal standards in formulating the solution, recommending and selecting retirement products, and communicating with the member.

The proposed framework will enable each trustee to provide a retirement solution that is 'safe by design' at a low cost and at scale to members. It compares favourably in a number of areas to indicated government direction on reforming retirement advice by super funds.

Bio: Dr Pamela Hanrahan is an internationally recognised expert in corporate law, collective investments and superannuation law, financial services regulation, and corporate governance.

Pamela advises listed and privately-held corporations and trustees and their boards on complex regulatory and governance matters. Her insights are informed by her practical experience as a non-executive director and as a former senior regulator in State and Commonwealth agencies. She is frequently consulted by governments on law reform and has conducted or advised several major inquiries on corporate and financial regulation. Pamela is Deputy Chair of the Business Law Section of the Law Council of Australia and a member of the National Corporate Governance Committee of the Australian Institute of Company Directors. She is a Professor of the UNSW Business School, a Senior Fellow of the Melbourne Law School, and author of several major legal texts including Securities and Financial Services Law (2021) and Directors' Legal Responsibilities (2022).

Beyond Retirement Income: Cognition and Age Inclusion Issues for Superannuation Funds

Benedict Davies (UniSuper)

Abstract: The retirement income covenant requires superannuation funds to assist their members over retirement, broadening the sector's focus beyond the accumulation phase to decumulation. While this shift towards retirement is not completely new, the management of retirement resources is an increasingly important issue. This requires a response from both superannuation funds, who need engage with the existing research on cognition and on age-inclusion policies, and for researchers to fill out gaps in the

evidence-base. This paper surveys two related issues, cognition and age-inclusion by addressing:

- COGNITION What are the cognitive challenges members face?
- AGE INCLUSION What is age inclusion and why does it matter?

Cognitive abilities of retirees are increasingly important, given the increasing need to make decisions over a stylised superannuation lifecycle. Retirees are also facing increasingly complex decisions that need to be made while their ability to make decisions is potentially decreasing. Further, protecting members from fraud or poor decisions directly links member vulnerability to retirement outcomes.

Additional considerations arise from people living longer, and health care will be in demand and the research on cognition and health care use, and mediating factors, such as physical activity are relevant.

Further, regulators have recently flagged that superannuation funds need to consider how they may assist members who are already in the retirement phase, including helping members experiencing cognitive decline. Superannuation funds could also have a role to play in creating age-inclusive environments by implementing educational programs and facilitating social engagement initiatives.

By understanding what lies beyond retirement income, superannuation funds could factor cognitive health and age inclusion within their retirement strategies. This could involve developing tailored financial literacy programs that account for cognitive abilities, offering personalised retirement planning tools and ensuring accessibility of information for retirees with differing cognitive capacities.

By acknowledging the impact of cognitive decline and understanding age-inclusive policies, super funds may better support retirees' needs, leading to improved retirement outcomes and overall quality of life.

Bio: Benedict Davies is a Manager of Policy & Advocacy in the Office of the CEO at UniSuper. Prior to this role, they held positions such as Public Policy & Advocacy Manager and Government & Industry Policy Manager at UniSuper.

Identifying Supply-Side Obstacles to the Provision of Life Annuities

Anthony Asher (UNSW Sydney)

Abstract: Research over the last three decades has tended to conclude that life annuities should play a greater role in private defined contribution (DC) retirement funds. That their role remains limited presents an ‘annuity puzzle’, which is frequently, but unsatisfactorily, explained by limited demand due to financial illiteracy and behavioural biases. Suppliers and regulators are, however, also boundedly rational. This paper investigates the market structure – narratives and institutions – that underlies the limited use of lifetime annuities in the Australian retirement market by the analysis of published views and interviews with knowledgeable insiders. The narratives include a narrow focus on liquidity and accumulation, muddled thinking on the role of incentives and fiduciary duties, and a naïve view of the effectiveness of regulation. The structures include incentives that encourage the accumulation of fund under management rather than drawdowns, and a lack of resources in the face of many other demands. On the other hand, the regulatory framework is intimidating: overly complex, sometimes intrusive and ill-informed. Trustees are restricted in their ability to innovate by investing in new products or by engaging more closely with members. Regulators and trustees are afraid of volatile public attitudes.

Bio: Associate Professor Anthony Asher is an academic at the University of New South Wales with special interest in retirement products and advice, investment and other related issues. He is currently a member of the Actuaries Institute Council and Audit Committee and Convenor of the Retirement Income Working Group.

He has divided his working life between practice and academia. Living in Australia from 2003, he first served in the policy and research division of the Australian Prudential Regulation Authority and then as a consulting actuary with Deloitte. His early work in life insurance culminated in four years as Chief Actuary of a medium sized insurer in South Africa. He has also served a variety of other financial service organizations as consultant and director.
Current research interests include retirement products and advice, and the application of virtue theory to education and regulation. He has written a book Working Ethically in Finance: Clarifying our vocation as well as over two hundred papers, submissions and articles.

Session 2C: Climate Risk

Annual Super Fund Members' Meetings: The Evidence So Far

Scott Donald (UNSW Institute of Climate Risk and Response)

Abstract: The trustees of Australia's superannuation funds have been required to hold formal members' meetings annually since 2020. This paper analyses the questions posed by members at the Annual Members' Meetings of the largest 25 superannuation funds over the past three years in order to engage, for the first time, with the question whether the meetings are merely performative, or whether they provide an effective mechanism for bilateral signalling between the funds' trustees and members that has value in the governance of the funds.

Bio: Scott Donald is an Associate Professor in the School of Private and Commercial Law. Scott joined the Faculty in 2010 after a successful career in the funds management industry advising governments, superannuation funds, insurance companies and fund managers on investment strategy, governance and regulation. Scott teaches corporations, trusts and superannuation law at both undergraduate and post-graduate level. He regularly presents at academic, professional and industry conferences in Australia and overseas and publishes in both the academic and professional press on research related to financial services regulation, governance and superannuation policy. See further: https://www.unsw.edu.au/staff/scott-donald.

Collective Influence on Pension Investment: ESG Needs from Pension Participants and Beneficiaries

Yadi Yang (Erasmus University Rotterdam; Asset Management NV)

Abstract: To address important Environmental, Social, and Governance (ESG) issues that matters to pension participants and beneficiaries, the traditional way of maximizing the financial returns should be replaced by striving for long term social gains. However, due to the traditional way of pension fund management, most if not all pension participants and beneficiaries have no say in how their pension would be invested. This paper studies how pension participants and beneficiaries' attitudes and needs for ESG conscious investment are and how will their attitudes and needs, together with risk preference, influence the decision-making process of pension fund managers.
This study uses quantitative methods to measure the attitudes and needs of ESG investment of pension participants and beneficiaries. Choice-based conjoint analysis has been applied to quantify the trade-off between ESG investment and pecuniary return of ESG investment. Small-scaled qualitative study and a 100-participant pilot have been conducted before we design the survey with choice-based conjoint experiment. In total, 500 participants finished the quantitative and quanlitative survey. The sample used for conjoint analysis consists of 433 Dutch pension fund participants.

More than half of the participants hold positive attitudes toward ESG investment. However, the findings indicate that pension participants and beneficiaries hold different views regarding the trade-off of ESG investment. The majority want their pension to be invested in an ESG-conscious way, as long as it does not cost too much. For a hypothetical pension income €2,200, respondents would prefer ESG investment if it does not cost more than €232.56/month. Among the three factors, environment issues gain most focus comparing to social or governance issues. Moreover, risk preference is not correlated with participants' ESG preference. Pension fund managers are in general less optimistic toward greater involvement and autonomy than pension participants and beneficiaries.

Bio: Yadi Yang is a 5th year PhD in Marketing at the department of Business Economics from Erasmus University Rotterdam. She is under the supervision of Prof.dr.ir. Benedict Dellaert, Prof.dr. Onno Steenbeek, and Prof.dr. Bas Donkers. She obtained her bachelor and master diploma in Aerospace Engineering at Beijing Institute of Technology before she moved to the Netherlands.
Yadi's current research aims at gaining a better understanding of the saving, investing, and spending behaviors of consumers for pension preparation, to support individual pension planning by personalized marketing tools. Her first project studies how to jointly model the discrete and continuous pension investment behaviors of consumers using MDCEV model. Her second project studies how consumers' goal would influence their preference for different pension pay-out schemes using conjoint choice experiment and text analysis. Her third project aims to develop a recommender system that integrate consumer preference as well as the suggestions from pension experts using knowledge graph embedding techniques to provide optimal recommendations on pension products for consumers.

SESSION 3: PLENARY – Retirement Decisions

Retirement Eggs and Baskets: Lifecycle Portfolio Dynamics

Loretti Isabella Dobrescu (UNSW Sydney; CEPAR)

Abstract: Housing and pension wealth are two major contributors to the quality of old-age provision. Here we study the interplay between these two asset classes using the impact of changes in saving incentives on wealth accumulation across the lifetime. To do so, we build and estimate a dynamic lifecycle model of saving and portfolio choice featuring risky earnings, lumpy housing with collateralized borrowing, and financial assets inside and outside pension plans. Through counterfactual simulations, we find complementarity from pensions to housing, and a substitutability from housing to pensions. Specifically, incentivizing pension savings increases housing, with homeownership and mortgaging occurring earlier and at higher levels, in anticipation of a prosperous retirement. In contrast, more attractive housing reduces liquidity and displaces pension savings, while tightening collateral constraints reduces both pension and housing investments. The mechanism behind this asymmetry, and especially how it unfolds across genders, stems from behavioural and housing frictions along with the partial liquidity offered by collateralized borrowing that jointly determine the timing of wealth accumulation. In this respect, we show that: (i) changes to pension plan architecture can significantly narrow the gender gap in wealth, (ii) better pension and housing conditions increase overall wealth without any further moderating effects on gender-wealth inequality, and (iii) higher market risk and tighter borrowing constraints widen the gap.

Bio: Isabella's interests are in labour, public finance, health and applied econometrics. She has primarily focused her structural work on topics related to consumption and saving dynamics, as well as studying risk-taking and cognition via nonparametric partial identification methods. More recently, she combines theory, empirical analysis and

randomised controlled trials to help design interventions that aim to improve educational outcomes using technology.
Isabella is also the Deputy Head of the School of Economics, co-chair of the STEP UP initiative in Education, a CEPAR Associate Investigator, and an editor of the Journal of Pension Economics & Finance (JPEF).

Insurer's Management Discretion: Self-Hedging Endogenous Participating Life Insurance

Karim Barigou (Université Lava)

Abstract: The majority of articles on participating pension contracts assumes an exogenously given investment strategy for the underlying asset portfolio. This simplifies reality as the insurer may want to adapt the investment strategy according to the value of liabilities and asset-liability ratios. We discuss the choice of endogenous investment strategies and analyse their effect on pension contract values and solvency risks. Moreover, we also present a data-driven neural network approach to derive the optimal hedging strategy for participating endogenous life insurance contracts and highlights the main differences between exogenous and endogenous liabilities.

Bio: Karim Barigou is Assistant Professor in the School of Actuarial Science at Université Laval, Canada. His research lies at the intersection of life insurance and quantitative finance. His recent work covers diverse areas such as longevity modelling under model uncertainty, pricing and hedging equity-linked insurance contracts, and data-driven applications in life insurance. Previously, Karim Barigou worked as a postdoctoral researcher at ISFA, University Lyon 1 (2019-2022), focusing on longevity risk detection and model selection. He earned his Ph.D. in Business Economics from KU Leuven in 2019, where his research under the supervision of Jan Dhaene focused on combining market-consistent and actuarial valuations for life insurance liabilities.

Retirement Income, Confidence and Gender: Insights from the How Australia Retires Survey

Junhao Liu (Vanguard Australia; CEPAR); Kate McKinnon (Vanguard Australia; CAMA), Timothy Smart (Vanguard Australia)

Abstract: With an ageing global population, ensuring that adequate resources are in place and are effectively used by retirees to maintain pre-retirement lifestyle remains a major challenge for governments, the private sector, and individuals. This study sought to improve our understanding of the retirement income needs and preferences of Australians, their confidence in meeting these needs, and marked gaps in preparedness across cohorts.
We leverage individual-level survey data comprising a nationally representative sample of 1,800 Australians. The survey collected a wide range of objective and subjective retirement-related information from working-age and retired respondents, such as life stage, retirement lifestyle, retirement planning, and the role of Superannuation. We employ a variety of techniques, including cross tabulations, OLS, binomial and ordered logit regressions to explore the data, and highlight three key findings. First, perceived (working age) and actual (retirees) spending needs in retirement vary by financial and demographic characteristics, including age. Anticipated spending levels fall as people approach retirement, implying difficulty in ascertaining retirement needs earlier in one’s working life. Older retirees reported needing less retirement income, consistent with literature suggesting declining spending. Second, having a clear plan, higher income, and home ownership are significantly associated with high retirement confidence. Third, although we find no significant association between gender and indicated retirement spending needs, females contend with a confluence of factors that manifest in lower confidence around

retirement outcomes; beyond the earnings gap, women have lower superannuation participation rates and engagement, more interruptions to employment due to parental and carers leave, and lack of comfort or understanding with financial products and services.

Bios:
Junhao Liu is an investment strategy analyst in Vanguard's Investment Strategy Group, conducting research in retirement and investor behaviour in Australian and U.S. Prior to joining Vanguard, he spent the three years as a postdoctoral research associate at the University of Sydney. His research on retirement savings, mortgage decisions, and financial literacy has been published in the Journal of the Economics of Ageing, Journal of Risk and Insurance, Journal of Consumer Affairs, and Journal of Financial Literacy and Wellbeing.
He is an associate investigator at the ARC Centre of Excellence in Population Ageing Research (CEPAR), with a PhD in risk and insurance from the University of Wisconsin-Madison, a MSc from the University of Cambridge, and a BSc from the University of Hong Kong.

Kate McKinnon is an Investment Analyst in the Retirement Team in Vanguard's global Investment Strategy Group, which is responsible for generating Vanguard's research and thought leadership on the economy and markets, asset allocation and portfolio construction, and retirement and investor behaviour. Prior to joining Vanguard, Kate has worked as researcher and analyst within the finance industry, the international public sector, and at the Australian National University and Melbourne University. Kate earned her PhD in Economics from the Australian National University. She is a Visiting Fellow at ANU's Crawford School of Public Policy and a Research Associate in the Finance and the Macroeconomy Programme at ANU's Centre for Applied Macroeconomic Analysis. Her research interests include retirement, asset markets and monetary policy.

CONCURRENT SESSION 4: CONTRIBUTED PAPERS

Session 4A: Retirement and Retirement Adequacy

Welfare Implications of Employment Protection for Older Workers

Todd Morris (University of Queensland)

Abstract: We study the welfare implications of employment protection for older workers, exploiting recent bans on mandatory retirement across Canadian provinces. Using linked employer-employee tax data, we show that the bans cause large and similar reductions in job separation rates and retirement hazards at age 65, with further reductions at higher ages. The effects vary substantially across industries and firms, and around two-fifths of the adjustments occur between ban announcement and implementation dates. We find no evidence that the demand for older workers falls, but the welfare effects are mediated by spillovers on savings behaviour, workplace injuries, and spousal retirement timing.

Bio: Todd Morris is a Lecturer at the University of Queensland. He obtained his PhD from the University of Melbourne in 2020 and had research positions at the Max Planck Institute for Social Law and Social Policy from 2019 to 2021 and HEC Montréal from 2022 to 2023. His main research interests are in empirical public and labour economics. A unifying theme to his research is the causal evaluation of government policies, often related to retirement. His research has been published by the Journal of Public Economics and the American Economic Journal: Economic Policy.

When Do Australians Expect to Retire?

Paul Gerrans (University of Western Australia)

Abstract: An expected retirement age is an important component of a retirement plan. This includes for developing a financial plan, a plan for work exit conditions, as well as social plans for retirement, each of which are important retirement adjustment predictors. This paper examines the age at which Australian workers expect to retire and how these expectations have changed over time. Two databases are utilised that allow different aspects of retirement age expectations to be explored. The first is a panel of participants in the HILDA database between waves six (2006) to wave 21 (2021). Annual retirement age expectations are complemented with responses to a retirement module administered every four-years that asks the preferred age of retirement as well as the probability of working after age 65-years. Our second database is from a sample of Australian workers, 50 years of age or over, who participated in a project investigating a holistic model of retirement planning advice. Participants were asked at what age they expected to retire as well as their confidence they had in this age. Respondents were followed over 12-months which allows an examination of how both expectations and confidence changed together.

Bio: 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 builds on collaborations with retirement savings funds in Australia and internationally to examine member choice behaviour both in accumulation and decumulation. Current projects include an ARC Linkage investigating holistic retirement advice models and retirement planning confidence. Paul teaches undergraduate personal finance units and postgraduate units in consumer financial products and services. He has an interest the acquisition of financial literacy by young adults 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 and a member of ASIC's MoneySmart Teaching Evaluation Steering Committee. Paul is currently a member of the OECD/INFE Research Committee, Super Consumers Australia Policy Reference Committee, and the OECD's PISA Expert Group.

The Impact of Divorce and Financial Literacy on the Financial Outcomes of Retirees

Elizabeth Mitchell (Griffith University)

Abstract: In 2017, it was reported that, on retirement, men had accumulated 39% more funds than women (Association of Superannuation Funds of Australia, 2017). Many factors contribute to this inequality such as the gender wage gap and disproportionate financial impact on the accumulation of retirement wealth due to gendered roles in the couple relationship, i.e. in lower-paid work, in a caring role, part-time work, reliance on a primary income earner entrenching barriers to full-time employment. However, there may be more to this story. This paper considers the financial shock of divorce as a life event that contributes to the lack of retirement funds of divorced individuals when compared with 'single, never married' individuals and 'couple' households.

While the divorce rate has been declining since the early 1990's, it remains high at 2.0 per 1,000 resident population (Australian Bureau of Statistics, 2017). De facto couples are also experiencing high rates of separation (AIFS, 2018; Spallek, Haynes, Baxter, and Kapelle, 2018). This life event requires numerous financial decisions, including a division of property and child-rearing arrangements. The division of assets coincides with a loss of the division of labour and economies of scale (Davidson, Saunders, Bradbury, and Wong, 2018; Nelson, 1988). Each newly formed household, therefore, becomes solely responsible for housing tenure, utilities, insurance, their share of child raising and other household expenses. Researchers have documented that divorce has a greater impact on

women than men (André et al., 2019; De Vaus et al., 2017; Sharma, 2015). This research extends prior work by focusing on the impact of divorce over the lifecycle on the accumulation of retirement funds for women and men.

Furthermore, the gender impacts of financial decision making should not be ignored when considering accumulation and decumulation of retirement funds. During cohabitation, women tend to manage household budgeting and men are involved in the high-stakes financial decisions (Fonseca, Mullen, Zamarro, and Zissimopoulos, 2012). Consequently, women have less practice at making high-stakes financial decisions that involve investment strategies for retirement. Hence this paper posits that women experience a higher degree of long-term adverse financial impacts on the accumulation of superannuation funds as a result of divorce compared to men.

Accordingly, this research utilises the *Wealth Module* in the *Household and Labour Dynamics in Australia (HILDA) Survey* to examine the financial impacts of divorce on the accumulation of superannuation funds of women. As the *Wealth Module* is included every four years, using a dynamic model, it is possible to note the changes in 11 asset classes related to the accumulation wealth and superannuation after the occurrence of divorce and throughout retirement. This method was previously employed by Coile and Milligan (2009) to analyse the impact of a health diagnosis on retiree wealth and has also been used to examine the reasons for change in home ownership (West and Worthington, 2018, 2019) and the changes in the net wealth of women, men and couples following divorce (West and Mitchell, 2022)

To address current gaps of knowledge in the literature, first I hypothesise that following the event of divorce, fully retired individuals will experience an adverse impact on the net wealth in the short-medium and long-term and this will be different for men and women. Second, that fully retired men and women will experience changes in net wealth in the short-medium and long-term across 16 years of retirement and this will differ according to gender, household structure and the financial shock of divorce. Third, the financial skills of men and women will moderate the financial outcomes of individuals in retirement, and this will differ according to gender, household structure and divorce.

The results of this research will contribute to the literature on gender equity in retirement, the financial impacts of divorce on women and will also inform policy makers and corporations on the need to bridge the inequities in retirement wealth of men and women.

Bio: Elizabeth is currently engaged in research for her PHD at Griffith University in the field of financial literacy. She has a background as a secondary teacher and midwife prior to being a public practice accountant. It was in her accounting career that she witnessed the profound effects of financial literacy on the financial wellbeing of clients. Her background in accounting, health and wellbeing and education, have culminated in a desire to research the impact of financial literacy, capability and wellbeing on vulnerable groups. At present she is the Head of Program for the Bachelor of Accounting at Melbourne Polytechnic.

Elizabeth is currently the Head of Program for the Bachelor of Accounting at Melbourne Polytechnic and is engaged in research for her PHD at Griffith University in the field of financial literacy. She has presented at conferences in New Zealand and Melbourne on financial literacy. She has a background as a secondary teacher and a public practice accountant prior to her career as a higher education academic. As a professional practicing accountant she has had first hand experience in the necessity of lean and agile responses to survive financial crisis such as the GFC in 2008. This along with her teaching background has motivated her to look for ways to find innovative ways to support the delivery of professional development within Higher Education. At present she is the Head of Program for the Bachelor of Accounting at Melbourne Polytechnic.

Session 4B: Reverse Mortgages and Aged Care Financing

Postcode-Level Reverse Mortgages: Longevity Risks, House Price Risks, and Welfare Gain

Lingfeng Lyu (UNSW Sydney; CEPAR)

Abstract: In the rapidly evolving economic and demographic landscape of Australia, the financial strategies of retirees require in-depth scrutiny. This research evaluates the Home Equity Access Scheme (HEAS) versus downsizing for older homeowners, factoring in elements such as means tests for Age Pension, health expenditures, taxes, and home maintenance. By anchoring the study on a utility approach, we carefully consider region-specific house prices and longevity risks on granular levels. Findings reveal that HEAS enhances healthy aging for healthy and mildly disabled retirees more than downsizing. In addition, this scheme benefits cash-poor but asset-rich retirees who have lower bequest motives, derive higher satisfaction from spacious homes, and prioritise long-term gratification. However, spatial disparities in housing prices and life expectancy decrease the uptake of HEAS, offering new perspectives on housing decisions among seniors.

Bio: Lingfeng Lyu, currently undertaking his PhD at the University of New South Wales (UNSW) and affiliated with the ARC Centre of Excellence in Population Ageing Research (CEPAR), is venturing into the nuanced interplay of aged care and economic landscape in the Australian context. Focused on exploring the potential of reverse mortgages as a means for retirees to release their home equity, Lyu's research offers insights into the profound impact such financial tools can have on post-retirement quality of life. By investigating the connection between housing prices and broader economic dynamics, he seeks to shed light on these intricacies. Central to his research is the quest for alternative financing avenues to bolster the sustainability of long-term care funding.

Novel Utility-Based Life-Cycle Models to Optimise Income in Retirement

Yunxiao Chelle Wang (UNSW Sydney; CEPAR)

Abstract: The global shift towards defined-contribution pension schemes has been accompanied by asymmetric risks and new responsibilities for households to plan and fund effectively their own retirement over the years. In this study, expressing and combining preferences for consumption, investment, bequest, public pension entitlement and the choice of reverse mortgage products, we develop several utility-based life cycle models to facilitate the complex decision-making process that retired households are required to follow to optimise their retirement income. This optimal policy is given in the form of either an analytical or a numerical solution using stochastic dynamic programming. The timing of this paper coincides with the launch of a reverse mortgage style loan, offered by the Australian federal government and allowing retired households to receive an income stream by taking out a loan against the equity in their home. Calibration is performed using real Australian household data.

Bio: Yunxiao (Chelle) Wang is a Postdoc Fellow in the School of Risk and Actuarial Studies at the University of New South Wales Business School. Her research interests are retirement planning, superannuation, pension, life cycle models, stochastic control and optimization. She received her PhD in Actuarial Studies from Monash University focusing on economic forecasting and the optimisation of decisions in retirement. She also holds a Bachelor’s degree in Actuarial Studies and Econometrics, Honour’s degree in Mathematics from Monash University.

Developing Private Long-Term Care Insurance in Australia: Pricing Analysis for Healthy and Ill Australian Retirees

Kyu Park (UNSW Sydney; CEPAR)

Abstract: To establish a private long-term care insurance (LTCI) market in Australia, calculating LTCI product costs requires a reliable actuarial model suited to the local population. Utilising our existing five-state Markov model on functional disability and chronic illness, we estimated premiums for various LTCI products, encompassing stand-alone LTCI and life care annuity (LCA), and assessed the impact of these products on an individual's utility. The model considered factors including age, sex, and (optionally) trend, utilising Australian data from 1998 to 2018. For product design and assumptions, we factored in the comfortable consumption level and aged pension for Australian retirees, and insights gained from our systematic literature review on LTCI pricing methods and outcomes. The calculated premiums include expected benefit payments and the Solvency II capital requirement (SCR). We performed sensitivity analysis on utility measures based on assumptions about individual traits. The stand-alone LTCI was devised to provide a $1,500 monthly disability benefit, capped at $7,600 over a lifetime. The LCA combined a $1,000 monthly annuity payment with the stand-alone LTCI. Premiums showed considerable variation based on retirement illness status, and whether trend factors were incorporated. Estimated stand-alone LTCI premiums comprised 16% to 27% of SCR, while LCA premiums ranged from 7% to 11% of SCR. In many cases, purchasing an LTCI product increased individual's utility, though the degree relied on factors like risk aversion and wealth level. The creation of an Australian private LTCI market requires meticulous attention to population demographics, aging trends, and individual traits.

Bio: Kyu is a Senior Research Associate in the Risk and Actuarial Studies Department at the University of New South Wales, working for the Australian Research Council (ARC) Centre of Excellence in Population Ageing Research (CEPAR). He is working on research projects in the Sustainable Wellbeing in Later Life research stream, focusing on the development of longevity and health risk models and optimal design of health and aged care insurance products with applications to various public sector support policies for retirement incomes and aged care. He recently completed a PhD in Actuarial Studies and Business Analytics at Macquarie University for his work on analysis to find causes and outcomes of medication adherence in aged population.

Session 4C: Variable Annuities

Pooled Contingent Annuity

Vivian Dang (UniSuper), Victor Huang (Milliman), and Young Tan (Aware Super)

Abstract: *This paper was first presented at the 2023 International Congress of Actuaries. Following this, Milliman has carried out indicative pricing of PCA designs, building off existing pricing frameworks of similar guaranteed products such as Guaranteed Lifetime Withdrawal Benefits (GLWBs). Initial pricing results from Milliman have been provided as an attachment to this paper.*

Australian pension funds (superannuation funds) are now mandated to develop retirement income strategies, with the trustees having to set out how they assist members to balance objectives across higher income, risk management, and capital flexibility. In most cases, it is expected that funds offer a balanced approach in assistance – ranging from product development & solution design, tools & calculators, engagement plans, and provision of factual information & guidance.

Given the popularity of phased withdrawals (i.e., account-based pensions in Australian market) and the prevalence of legislated minimum drawdown observed by members of account-based pensions, and the low take-up in lifetime annuities, a pooled contingent

annuity (PCA) can be an innovative, valuable, and low-cost risk-management component as part of a balanced retirement solution.
Conceptually, a PCA is layered on top of an account-based pension. It will commence paying lifetime benefits, contingent on the member's account balance dropping below a threshold (e.g., to zero) – either due to the poor performance of investment assets and/or due to allowed withdrawals over an extended period (i.e., retirees living longer than what the assets can support for), or a combination of both due to the interactive nature of investment and longevity risks. In exchange, fees are charged regularly and paid into a single pool to build up a reserve which will be used to fund the contingent benefits. A PCA would be expected to provide the lowest cost to protect against longevity and investment risk, albeit with no guarantees on the level of income after it commences.
This paper expands on the fast-growing international research on longevity pooling designs (i.e., uninsured) for the purpose of retirement income (e.g., pooled annuity funds, modern tontines, group self-annuitisation schemes, individual tontine accounts, mortality-pooled investment, etc.) and contingent deferred annuities in the US market (i.e., insured products).
It sets out practical product design considerations and assesses retirees' retirement outcomes against the objectives in the Retirement Income Covenant. It will touch on the suitability of a PCA as part of an overall retirement solution suitability.

Bios: Vivian Dang is an actuary with 15 years' experience in superannuation consulting. He is currently working as a Strategy Lead at UniSuper and was previously Senior Consultant at MLC Wealth and a Consulting Actuary at The Heron Partnership and Russell Investments, providing actuarial and strategic advice to a wide range of superannuation funds and employers. Vivian is a member of the Actuaries Institute's Superannuation and Investments Practice Committee, the Life Insurance and Retirement Education Faculty and helped educate a generation of Part 3 superannuation students through course leader roles across the 6A, 6B and CAP subjects.

Victor Huang is a principal with Milliman and heads up the Financial Risk Management (FRM) practice in Australia. He has been with Milliman since 2008. Victor leads a team of actuaries, portfolio managers and capital markets experts in the design of retirement income strategies and products, as well as the implementation of investment solutions within superannuation, (re)insurance companies, ETF managers and managed accounts. Investment strategies - Victor has worked on include tail risk hedging, currency hedging, and rebalancing overlays for funds, as well as dynamic hedging programs for investment guarantee products and defined benefit liabilities. Victor has also led projects on developing quantitative frameworks to analyse different retirement income strategies and product designs.

Young Tan is an actuary working in superannuation since 2012. He is currently working as an Investment and Retirement Actuary at Aware Super and was previously Manager of Actuarial & Research at UniSuper and Consulting Analyst at Russell Investments. Young is a member of the Actuaries Institute's Superannuation Projections and Disclosures Sub-Committee, and the Life Insurance & Retirement Education Faculty. Young is interested in developing effective decumulation solutions that encourage confident spending.

Variable Annuities: A Closer Look at Ratchet Guarantees, Hybrid Contract Designs, and Taxation
Len Garces (University of Technology Sydney; CEPAR)

Abstract: Recently, providers of variable annuity (VA) contracts have launched products which offer potentially higher guaranteed benefits through a ratcheting mechanism in conjunction with an array of investment options, including a cash fund. In some contract

designs, the cash fund serves as an intermediate repository of earnings. For example, in a VA with a guaranteed minimum withdrawal benefit (GMWB), the policyholder has the option to withdraw less than the guaranteed withdrawal amount, with the difference being deposited into the cash fund, which appreciates at a benchmarked rate until the contract matures. We consider the valuation of a VA contract with a GMWB rider in which the policyholder has access to a cash fund. Assuming a ratcheting mechanism for the guarantee, we determine the optimal withdrawal strategy and provide numerical examples of cash flows emanating from the contract. We also investigate the implications of taxation on the value of the VA contract.

Bio: Len Patrick Garces is a Lecturer and Program Director for Quantitative Finance at the School of Mathematical and Physical Sciences, University of Technology Sydney. He is also an Associate Investigator at the ARC Centre of Excellence in Population Ageing Research (CEPAR). His current research is on continuous-time stochastic mortality models and their applications to actuarial valuation, the design and valuation of retirement income products, robust consumption and investment problems, and indifference pricing of mortality-linked securities.

Shapley Decomposition-Based Selection of Representative Contracts for Variable Annuity Valuation
Gayani Thalagoda (UNSW Sydney; CEPAR)

Abstract: The paper presents a Shapley decomposition-based method to improve explainability in the selection of cluster representatives for valuing variable annuity portfolios. While existing clustering-oriented data mining frameworks offer notable reductions in computational time, the selection of cluster representatives using these methods is independent of the risk measure being calculated. Policies with seemingly similar risk characteristics in the feature space may end up generating significantly different cash flows, diminishing their practical appeal for principle-based calculations. As a solution, this study proposes an algorithm that forms clusters based on Shapley decompositions. The method involves decomposing the overall risk of a contract into clearly separated contributions from each risk driver using a Shapley value-based decomposition. This decomposition allows for a structured and meaningful representation of the policy data, which is then used for selecting the cluster representatives. The proposed method can assist users in explaining the reasoning behind the selection of a policy as a cluster representative. Furthermore, the proposed method aligns with the grouping requirements of VM-21: Requirements for Principle-Based Reserves for Variable Annuities, which necessitate representative policies to be selected in a manner that accurately reflects characteristics and criteria with a material impact on the calculated risk measure.

Bio: Gayani Thalagoda is a PhD candidate at the University of New South Wales (UNSW) and a research student at the ARC Centre of Excellence in Population Ageing Research (CEPAR). Her research interests fall within the interdisciplinary areas of actuarial science and data science. Research interests include, valuation of guarantees embedded in variable annuities and longevity risk management.

NETWORKING RECEPTION

A Networking Reception, sponsored by the Innovations in Risk, Insurance and Superannuation (IRIS) Knowledge Hub, will be held in the foyer of the Colombo House Theatres and is open to all participants.

PRORGAM DAY 2: 6 December 2023

SESSION 5: INDUSTRY/POLICY PANEL

What Does an Effective Retirement Income Strategy Look Like?

Panellists:

- Jacki Ellis (Head of Retirement Segment, Aware Super)
- Lynn Kelly (First Assistant Secretary, Retirement, Advice and Investment Division, The Treasury)
- Jeremy Cooper (Chair of Advisory Board, Conexus Institute)
- Brnic Van Wyk (Head of Asset Liability Management, Australian Retirement Trust)

Bios:

As the Head of Retirement Segment, **Jacki Ellis** is responsible for Aware Super's Retirement Strategy and driving retirement initiatives across the Fund. She is passionate about enhancing Australia's retirement system, tailoring investment strategy to meet the needs of members, and delivering the personalised experiences and sustainable income that retirees require to have the confidence and freedom to live their best life.
Jacki was previously a Portfolio Manager in the Investment Strategy team at Aware Super and is experienced in modelling member outcomes, asset allocation, portfolio construction and manager selection. Prior to joining Aware Super, Jacki worked for Mercer as a Senior Investment Consultant and the APAC Director of Strategic Research and for Access Capital Advisers and the Australian Office of Financial Management. She has an Honours degree in Finance and a Bachelors degree in Psychology from the Australian National University and is a Chartered Financial Analyst.

Lynn Kelly is the First Assistant Secretary of the Retirement, Advice and Investment Division at Treasury and is responsible for providing policy and legislative advice to Government on initiatives to improve Australians' financial security and raise retirement standards. Lynn's previous roles at Treasury have included the Interim Chief Executive Officer of the Board of Tax and Chief Adviser, Corporate and International Taxation Division. Lynn joined Treasury's Sydney office in December 2016 after over twenty years as a tax professional in the private sector where she worked across diverse industries, including banking, media and consulting.

Jeremy Cooper was Chairman, Retirement Income at Challenger from late 2010 to late 2022. Prior to joining Challenger, Jeremy was appointed by the Rudd Government in 2009 to chair a wide-ranging review of the superannuation system, known as the 'Cooper Review'. Before his review role, Jeremy was the deputy chairman of ASIC for five years from mid-2004. While at ASIC, Jeremy had oversight responsibility across a range of ASIC's teams in the financial services sector. Jeremy is currently chairing the advisory board of independent superannuation think-tank, the Conexus Institute, and working on policy solutions to the decarbonisation challenge.

Brnic Van Wyk leads the development of the Australian Retirement Trust's asset liability management framework, member data analysis, models and governance structures. The Australian Retirement Trust, previously known as QSuper, is one of the largest superannuation funds in Australia, managing approximately AUD265billion on behalf of more than 2.4 million members. Van Wyk is a member of the leadership group for the newly formed retirement division and his team is responsible for designing the cohort structure and managing investment strategies for the default accumulation MySuper product, QSuper lifetime, and the ongoing operational, actuarial and solvency management of the asset pool for the lifetime pension product. He's a fellow of the Institute of Actuaries of Australia and the U.S.'s Institute of Actuaries. He's also a certified investment management analyst and serves on the IIA's retirement incomes working group. He's a board member of the pension benefits and social security section of the International Actuarial Association, the CIMA Society of Australia and the international advisory board of France's EDHEC-Risk Institute.

CONCURRENT SESSION 6: CONTRIBUTED PAPERS

Session 6A: Member Behaviour

Aware Super's My Retirement Planner: A New Retirement Calculator that takes into Account Risks and Empowers Better Financial Decision Making
Estelle Liu (Aware Super)

Abstract: Superannuation fund members often find it hard to know how much they need to save for their retirement and how they are tracking against that target. The typical retirement calculator in the industry today relies on deterministic projections and focuses more on showing the projected outcomes instead of guiding members to improve their retirement plan. Last year at the 30th Colloquium, we presented the presentation titled "Aware Super's Retirement Confidence Score: A new measure to take into account risks and track against retirement targets".
This presentation is the 2nd one of our series of talk on this topic. In this presentation, we will introduce Aware Super's "My Retirement Planner", which was launched to Aware Super members on 7th July 2023. My Retirement Planner is a new retirement calculator implemented the Retirement Confidence Score that takes into account investment risk in the projection as the measure to track against retirement goals. It can also be extended as a measure of success for members' retirement outcomes across the membership, aligning to the best practice outlined in the report of the APRA & ASIC thematic review of the Retirement Income Covenant.
My Retirement Planner also empowers members to make better financial decisions through a 'play mode'. The play mode allows members to explore what are the implications of different financial decisions on their retirement confidence score: retiring sooner or later, changing their retirement income targets, contributing more or less, and investing differently.
Preliminary data from users in the first month indicates that two thirds of the users used the play mode before completing the journey. Around 80% of these users resulted in either unchanged or higher retirement confidence score. Around 50% of them indicated additional contributions. Overall, the completion rate has been doubled compared to our previous deterministic retirement projection tool.

Bios: Estelle Liu is the Actuarial Practice Lead at Aware Super and her work includes superannuation projections, retirement modelling, policy submissions, defined benefits and member data driven insights and research.
Estelle is a Fellow of the Institute of Actuaries of Australia (FIAA) and a Chartered Enterprise Risk Actuary (CERA). Estelle is the chair of the Actuaries Institute's Superannuation Projection and Disclosure Sub-committee, a member of the Superannuation and Investments Practice Committee and Data Science Practice Committee.

Diverse Effects of Recurrent Communication Boosts and Nudges on Retirement Savings in the Long Run
Nguyen Bang Chau Victoria Hoang (University of Sydney; CEPAR)

Abstract: With people becoming more responsible for their financial decisions and retirement planning, there is a greater need for appropriate self-provision in retirement. Long-term planning is difficult, though, because of cognitive barriers and behavioural issues such mental accounting, framing, inertia, present bias, and exponential growth bias. To track saving plans and resolve behavioural obstacles, improved communication between pension funds and members is essential. Individuals can make thoughtful retirement planning decisions with the aid of communication interventions like boosts and nudges. The study explores how goal-setting messages with retirement income estimations might educate and enlighten people. It also examines if study participants will change their contact with superannuation fund and reconsider their present retirement savings options. The findings indicate that goal-setting messages have significant effects on retirement savings, while these effects differ for members with diverse goal-setting behaviours.

Bio: Nguyen Bang Chau (Victoria) Hoang is a PhD candidate in Consumer Finance at The University of Sydney Business School. Her research interests include retirement savings, superannuation, personal and consumer finance, behavioural economics, intertemporal decision-making, economics of ageing and communication interventions. As part of an ARC (Australian Research Council) Linkage project, her current work focuses on exploring behavioural changes in retirement savings due to periodical communication boosts and nudges. She is investigating the diverse impacts of a combination of retirement income projections and different goal-setting messages on superannuation fund members' voluntary contributions and communication with the fund. Before coming to Sydney, she graduated with a bachelor’s degree in Economics and an honours degree in Econometrics at The University of Queensland.

Innovative Combo Product Design Embedding Variable Annuity and Long-Term Care Insurance Contracts
Yawei Wang (UNSW Sydney; CEPAR)

Abstract: This paper presents a novel combo insurance product design consisting of a variable annuity contract embedded with guaranteed minimum income benefits and long-term care insurance. This combo product provides enhanced benefits when the policyholder is functionally disabled. The Hamiltonian Monte Carlo (HMC) simulation technique is utilised for numerically valuing the combo product whose underlying fund is proportionally invested in multiple asset classes. Product features including the elimination period and the maximum benefit period, are examined, and we show that the elimination period and the maximum benefit period can effectively reduce the product premium. From the policyholder's perspective, we quantify the extent to which the combo product costs less than purchasing stand-alone products separately. From the provider's perspective, we investigate the solvency capital requirement (SCR) for the combo product under Solvency II and show that the combo product requires less SCR per initial cash inflow than an LTC annuity. We perform fee sensitivity tests on model parameters to reveal some insights regarding risk management from the provider's perspective. We conduct a utility analysis to show the importance of LTC insurance protection and investing in risky assets post-retirement, and policyholders gain utility from the variable annuity component and LTC insurance component in the combo product design.

Bio: Yawei Wang is currently a second-year PhD student at UNSW Sydney. He is also a research assistant at the ARC Centre of Excellence in Population Ageing Research (CEPAR). His current research interest is retirement income product innovation.

Session 6B: Pension Systems and Demographics

Pension Systems (Un)sustainability and Fiscal Constraints: A Comparative Analysis

Vito Polito (University of Sheffield; CESifo; Netspar)

Abstract: Using an overlapping generations model, two new indicators of public pension system sustainability are proposed: the pension space, which measures the capacity to pay for pension expenditures out of labour taxation, and the pension space exhaustion probability reflecting demographic uncertainties. These measures reveal that the pension spaces of advanced economies are strikingly different. Most nations have little scope to further finance pensions out of labour income taxation over the next thirty years. There is no one-size-fits-all solution. Risk-equivalent pension reforms enhance welfare in the long run, particularly for rapidly ageing nations, but also entail non-negligible transitional costs.

Bio: Vito Polito is currently Reader in Economics at the University of Sheffield. Previously he held posts of Senior Lecturer at the University of Bath, Lecturer at the University of Cardiff and Doctoral Fellow at the University of York. He received his PhD from the University of York in 2009. Vito's main research interests are in the fields of applied macroeconomics and econometrics. He is currently working on projects on: (i) sovereign debt sustainability in ageing economies; (ii) modelling time series with vector neural networks; (iii) fiscal policy multipliers at the zero lower bound; and (iv) dual labour markets and macroeconomic policy. Vito is a fellow of CESifo and NETSPAR. He currently holds a NETSPAR Comparative Research Grant No. CRG2022.02. He is author of the Study Guide in Macroeconomics published by the London School of Economics (International Programmes). From 2003 to 2008 he worked as a Specialist Tax Consultant at the Italian Ministry of Finance. Vito lives in York (United Kingdom) with Carrie, Giuseppe, Filippa and Eddie.

Population Norms of Intrinsic Capacity in 14 European Countries and Israel: Variations and Implications for Pension Eligibility

Meimei Chen (Macquarie University Centre for the Health Economy; Australian Institute of Health Innovation)

Abstract: Background: The healthy ageing framework used by the World Health Organization describes an individual's functional ability as the result of the individual's intrinsic capacity, their environment, and the interactions between the individual and their environment. This study investigates the structure and variations of intrinsic capacity among individuals aged 50 and over in 14 European countries and Israel based on data from the Survey of Health, Ageing, and Retirement in Europe (SHARE). We examined and validated the structure of intrinsic capacity, estimated scores for each participant, and analysed variations in intrinsic capacity and its subdomain scores across different levels and variables. We compared participants' scores to their full pension eligibility age for different countries and genders.
Methods: Data analysis involved Structural Equation Modelling, including Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), bi-factor EFA, and bi-factor CFA to validate the intrinsic capacity construct. Descriptive statistics highlighted intrinsic capacity scores, differentiating them based on age, gender, country, and socio-economic status to establish population norms.
Results: Significant disparities were observed in intrinsic capacity scores and their subdomains across countries. Countries such as Denmark, Israel, and Switzerland

consistently reported higher scores in intrinsic capacity and multiple subdomains. In contrast, countries like Italy, Spain, and France had lower scores. Men had higher levels of psychological, locomotor, vitality, sensory, and overall intrinsic capacity, whereas women had higher scores in the cognitive subdomain. When stratified by socio-economic status, participants in the lowest income group consistently had the lowest scores for intrinsic capacity and its subdomains across both genders.
Conclusions: Intrinsic capacity varied significantly by country, gender, and socio-economic status. Comparing these scores with full pension eligibility ages can contribute to ongoing policy discussions in Europe.

Bio: Meimei Chen is a PhD student at the Macquarie University Centre for the Health Economy, specialising in causal inference, machine learning, and econometrics. Her research focuses on leveraging machine learning techniques to enhance causal inference and explore preference heterogeneity.

Heterogeneous Lifespan and Retirement Financing with Private Pensions

George Kudrna (UNSW Sydney; CEPAR)

Abstract: Much of the macroeconomic analysis of privatization of public pension has taken a strong assumption that all agents face similar mortality and equal life expectancy. We consider an opposite assumption that there is heterogeneous mortality. When agents have unequal lifespan that is negatively correlated with income type, privatizing public pension via expanding private retirement savings accounts, i.e., superannuation in Australia or 401k accounts in the US, can hurt households with shorter lifespan. The reason is that the presence of forced retirement savings accounts distorts consumption smoothing over the life cycle, especially liquidity constrained agents with low income and shorter lifespan. The efficiency gains of expanding private pensions and the resulting public support for pension reforms depend critically on heterogeneous lifespan. If lifespan inequality is high, overall welfare improving disappears and there is no sufficient support for expansion of private pension, which is opposed the conventional results in the social security reform literature.

Bio: George Kudrna did his undergraduate studies in the Czech Republic, and received a PhD in economics from the University of Sydney in 2009. He works as a postdoctoral fellow at the School of Economics. His research interests are in the fields of pension economics and macroeconomics.

SESSION 7: PLENARY - Lifecycle Decisions

Can an Actuarially Unfair Tontine Be Optimal?

Steven Vanduffel (Vrije Universiteit Brussel)

Abstract: A one-period tontine is a collective investment fund in which every participant enters with an initial contribution, but only those participants who are still alive at maturity are entitled to receive a share of the total fund value. A vast literature proposes various sharing rules, primarily using actuarial fairness of the payout as the main criterion, i.e., the sharing is structured in a way that participants have the same (unconditional) expected return. We revisit this point and suggest alternative sharing rules that aim at being better suited to investors. Specifically, we discuss how to share mortality risk using equality in expected utility among participants as our fairness criterion. A key finding is that, in a competitive market, only actuarially fair tontines are viable.

Bio: Steven Vanduffel is a professor in Finance and Insurance at Solvay Business School (Brussels). His research topics pertain to the fields of insurance and financial mathematics/engineering. His research has been published in journals such as Finance and Stochastics, Mathematical Finance, Journal of Mathematical Economics, Journal of Risk and Insurance, and Journal of Econometrics.
Vanduffel awarded the Robert Mehr Award (2022), the Robert C. Witt Award (2018), the Redington Prize (2015), the PRMIA Award for new frontiers in Risk Management (2014), the Johan de Witt Prize (2012), the SCOR-EGRIE Young Economist Best Paper Award (2011), and the Lloyds Science of Risk Prize (2011).
He is a co-editor of ASTIN Bulletin (the journal of the international Actuarial association) as well as an associate editor of European Actuarial Journal and of Dependence Modeling. Steven advises insurers, banks and pension funds on issues such as model development, model risk management, pension solutions, ALM, and credit risk.

Borrower Preferences for Mortgage Attributes: The Roles of Confusion, Importance and Advice
Susan Thorp (University of Sydney; CEPAR)

Abstract: Choice of a home loan is one of the most important and confusing financial decisions households make in their lifetime. Borrowers go to mortgage brokers to learn about different mortgage products, and for help to make a good decision. As for other types of financial advice, mortgage broker and borrower incentives may not align. Using data collected in a lab-in-the-field experiment, we find that the attributes that borrower's rate as most confusing, they also rate as least important. We show that brokers educate borrowers, moderating their clients' confusion about mortgage attributes. However, borrowers who consult brokers place importance on attributes that align with broker incentives. Results from a choice experiment show that broker-advised consumers are willing to pay more for attributes that increase broker fees, such as high-volume and longer-term mortgages.

Bio: Susan Thorp is a Professor of Finance in the Business School. She has previously held positions at the University of Technology Sydney and the Reserve Bank of Australia. Susan has an honours degree in Economics from the University of Sydney, and a PhD in Economics from the University of New South Wales.

Disentangling Drawdown
Cameron Stewart (Super Consumers Australia)

Abstract: As a greater proportion of the population head into retirement and the retirement system itself matures, we unpack people's decisions around converting their super savings into an income. The goal was to assist policy makers and the superannuation sector in understanding consumer behaviour and highlight areas where older Australians could be better supported.
We conducted a combined online and phone-based survey of 1100 Australians aged 65 to 83. We wanted to understand the behaviours of people over the preservation age with defined contribution accounts, either in accumulation or pension mode. The focus was primarily on drawdown decision making, so people with only accounts where these decisions are typically not required (e.g. annuity or defined benefits) were excluded.
The survey found that for the majority of people their drawdown decisions are based on meeting their needs (e.g. living expenses). The financial situation of a partner also plays a significant role, emphasising the importance of household level assessments when

seeking to understand people’s drawdown decisions. There are other less powerful drivers, like the minimum drawdown rates being seen as a government recommendation. People who appeared to be making less than optimal drawdown decisions tended to have a low level of knowledge about superannuation tax settings. While some people worry about health and age care costs this doesn't always translate into people drawing or spending less to prepare for these costs.
As the government grapples with how the superannuation sector and the retirement system can better support people to maximise their income in retirement this study will serve as a useful evidence base to help understand people’s behaviour in drawing down their superannuation.

Bio: Cameron Stewart is a Researcher and Data Analyst at Super Consumers Australia. Cameron has a Bachelor of Arts (Honours) majoring in Economics from the University of Sydney. Cameron is passionate about personal finance and ensuring that everyone gets the most out of their superannuation. His areas of research include the retirement phase and retirement planning, and taxation of superannuation.

Flexible Retirement Choices: Switching Retirement Savings into an Annuity
Peter Smith (University of York; CAMA)

Abstract: In this paper we consider the choice that retirees might make between drawing down from their pension pot and the purchase of an annuity. A key finding of our research that in a world of ‘loss aversion’, across a very wide range of assumptions, there is almost always a ‘crossover point’ during retirement at which moving out of drawdown into an annuity can be the optimal strategy. This suggests that the pensions industry should investigate the construction of a hybrid, ‘flex-first, fix-later’ pension product. We show that a ‘hybrid’ approach can produce much higher levels of happiness, especially at older ages, than staying wholly in drawdown or from buying an annuity at the point of retirement.

Bio: Peter Smith has been Professor of Economics and Finance at the University of York since 2002 and is a research associate of the Centre for Applied Macroeconomic Analysis (CAMA). His research is in areas of financial economics, macroeconomics and labour economics. Recently, he has published research papers on the analysis of the importance of macroeconomic sources of risk in domestic and international asset markets, the significance of trend following as an investment strategy and risk factor in a range of asset markets and on the determination of the gender pay gap. He has published research papers in 29 different international journals and in 10 books.
He is Chair of the Trustees of the Money, Macro and Finance Society and has been at adviser to the Financial Conduct Authority, the Ministry of Defence and the Department for Business, Innovation and Skills. He is Senior Adviser to Solent Systematic Investment Strategies.

PROGRAM DAY 3: 7 December 2023

Online via Zoom

Session 1: Retirement Benefits

Longevity Pessimism, Misinformation, and Pension Choice
Andre Lot (University of Sydney)

Abstract: To determine the value of a pension, individuals need to consider their survival risk. In this paper, I first elicit survival probabilities for a broad set of target ages, using a representative panel of the 18-70 year-old Swiss population. I document a systematic survival belief bias, which is the stylized fact that individuals underestimate their survival probabilities (compared to actuarial life tables). Then, I show that incorrect information about longevity in general is a substantial component of this bias. Next, I implement an incentivized experiment that requires subjects to make risky pension choices, in which payoffs are not affected by participants' own longevity. I find that longevity pessimism induces earlier and less risky choices about the timing of pension benefits, under annuity or lump-sum pension schemes. Finally, I show that happiness and satisfaction have an indirect effect on pension choices through the channel of longevity pessimism.

Bio: Andre Lot has recently submitted his PhD thesis in Finance to the Norwegian School of Economics and will soon join the University of Sydney Business School. His research focuses on empirical and experimental household finance. He has been currently working on individual retirement financial decision-making, on topics of longevity beliefs, liquidity and precautionary savings, and tax-incentivized retirement investment schemes.

Anticipated and Experienced Regret in Annuity Choices: An Experimental Study
Koen van Boxel (Leibniz University)

Abstract: In this study, we investigate experimentally the role of anticipated and experienced regret in the decision to purchase life annuities. Our experiment focuses on a set of offered annuity contracts, with varying principal protected components and two feedback treatments. Our findings suggest that people prefer principal protection in general and that regret averse present lower demand for annuities. We also show, that those regret averse individuals tend to make less extreme annuity choices. We further find, that all participants invest more in annuities if they can customize the principal protected component, and that for all of them receiving feedback sequentially reduced the demand for annuities. Yet, sequential feedback harms regret averse individuals more, as they experienced more regret.

Bio: Koen van Boxel has been working as a PhD-student and research associate at Leibniz University Hannover in Germany since October 2022. Before this, he got his master’s degree in financial economics at Radboud University Nijmegen, the Netherlands, as well as a master’s degree in environmental economics from the Swedish Agricultural University in Uppsala, Sweden. He mainly focuses on behavioral economics and use of experimental methodology. Some projects he has been working on include the use of (nature-related) images in mutual fund investment decision-making, as well as the current project on annuity investment decision making and feelings of regret.

On which Socioeconomic Groups do Reverse Mortgages have the Greatest Impact? Evidence from Spain

M. Mercè Claramunt (University of Barcelona)

Abstract: We assess the effects that reverse mortgage contracting has on family finances over the lifetime of a family according to the socioeconomic group to which it belongs. We used a stochastic model with a double source of randomisation, survival and entry into dependency, and applied it to Spanish families based on data from the 2017 Spanish Survey of Household Finances. One conclusion indicates that immediate and long-term effects are very different depending on the group, being higher for families that, a priori, would least need the monetary supplement provided by reverse mortgages, according to the indices defined in this paper

Bio: M. Mercè Claramunt has a PhD in Economics and Actuarial Science. She is a professor in the Department of Economic, Financial and Actuarial Mathematics of the UB. She is lead investigator of the Actuarial and Financial Modelling Research Group and Presidentof the Scientific Committee of the Observatory of European Complementary Social Pension Plans.

SESSION 2: Pension Design

Economics of Widowhood Mortality in Adult Women in India: Role of Paid Work, Pension and Household Economic Status

Babul Hossain (International Institute for Population Sciences (IIPS))

Abstract: The economic consequence of widowhood on health is well-established, demonstrating that poorer economic status can significantly modify health outcome even the risk of mortality. However, empirical evidence are restricted only for the developed countries. Thus, this study assesses the roles of economic factors (paid work, pension and household economic status) on the mortality of widows in broad age groups from India. We used two waves of the India Human Development Survey (IHDS), a nationally representative prospective dataset in India for 42,009 women (married and widows) aged 25 years and above from IHDS wave 1 whose survival status was observed between two waves. Further, 6,953 widows were considered for sub- sample analysis in this study. Logistic regression and propensity score matching (PSM) applied to understand the association and causality between economic factors and mortality for widows. Poor household status, paid regular work and receiving a widowed pension were significantly associated with lower mortality for young widows, while unpaid and paid regular work was a significant linked with mortality for old widows. The result of causal inference suggests that receiving a widows' pension had a no significant impact on mortality for both young and old widows, while engaging in paid regular work significantly reduced the mortality of old widows. These findings suggest that paid employment have a protective impact by reducing mortality among widows in India.

Bio: I am a Doctoral Fellow in population studies at the International Institute for population sciences, Mumbai, India. I am using quantitative methods to study gender, health and social inequality. Most of my research focuses on how gender and social identity like marital status affect health inequality across different phases of individual life in India.

Reform of the Dutch Pension System: A Legal Comparison of the Dutch and Australian Occupational Pension System

Emma Suzanne van Aggelen (Tilburg University; KU Leuven; Netspar)

Abstract: The Netherlands is reforming its pension system. On 30 May 2023 the Dutch government adopted the New Pension Act. This New Pension Act came into force on 1 July 2023. The transition process must be completed by 2028.
With the implementation of this act, the Dutch pension system will undergo fundamental changes. For example, defined benefit schemes will be abolished and a new type of defined contribution pension contract will be introduced. It is important to note that all accrued benefits will be converted into DC. However, despite the upcoming pension reform, some elements of the current pension system will remain unchanged.
In this presentation the Dutch pension reform and, in particular, the New Pension Act are being described from a legal perspective. Some key aspects of the new pension system are outlined and the purpose of the pension reform is discussed. In addition, a look will be taken at the Australian pension system. A comparison is made between the Australian and Dutch pension system in terms of pension design, taking into account the recent changes to the Dutch pension system.

Bio: Emma Suzanne van Aggelen obtained her doctoral degree at the Catholic University of Leuven. During her PhD she specialized in pension law. As a postdoctoral researcher at the University of Tilburg (Fiscal Institute Tilburg), she conducts research in the field of pension law and tax law. She is also research fellow at the KU Leuven (Institute of Social Law) and a research fellow of Netspar.

‘Relabelling’ of Individual Early Retirement Pension in Finland: Application and Behavioural Responses using Finnish Register Data

Ricky Kanabar (University of Bath; Netspar)

Abstract: Using rich Finnish population level registers, we examine the impact of fusing a flexible early retirement pathway with a more stringent pathway, without changing eligibility conditions, so called ‘relabelling’, on individual application behaviour. Our findings show that among affected cohorts the likelihood of applying for (successfully claiming) disability-related early retirement declined by 1.8 (1.5) percentage points equivalent to a relative drop of approximately 37% (39%) following the reform. Individuals with below tertiary level education and stronger lifetime labour market attachment exhibit a stronger behavioural response to the reform. We find tentative evidence of programme substitution to early retirement pathways designed to keep individuals in the labour market albeit on a part time basis. Our findings suggest that social norms and lack of awareness associated with early retirement pathways can strongly influence application behaviour even when eligibility conditions remain unchanged, offering policymakers novel ways to extend working lives.

Bio: Dr Ricky Kanabar is Associate Professor of Social Policy at the University of Bath, a Fellow at Netspar (Tilburg), an Affiliate at CEPAR (Australia), and a Research Affiliate, MiSoc (Essex).

Gender Gaps in the Chilean Pension System

Maria Fernanda Toledo, Ximena Quintanilla, and Paulina Granados (Superintendence of Pensions Chile)

Abstract: The gender dimension is fundamental in the design, implementation, and evaluation of public policy. In the case of the Chilean pension system, this has been an aspect considered in all the reform processes or reform projects since the comprehensive reform of 2008. Therefore, it is important to systematically monitor the gender dimension in

the system and to analyse the gender gaps both in the results of the system and in the main determinants.
This document seeks to delve into the analysis of gender gaps in the pensions' system. The analysis focuses on two indicators: the probability of contributing to the system and the accumulated balances for pension, finding that when labour market variables are considered, the effect of gender disappears or decreases significantly. In addition, analysis of the evolution of the gender gap in the accumulated balances is carried out, finding that, although the gap has decreased through the cohorts and over time, it is maintained through all ages, and there would even be a particular pattern in the case of young people for whom the gap starts out relatively high.
Although it is shown that the gap has improved, it has not disappeared.
A future challenge for this study will be to complement the analysis with other socioeconomic variables such as education and additional labour market variables, and even factors related to family structure and care systems, which we know determine gender differences.

Bios:
María Fernanda Toledo is a researcher for the Research Division of the Pension Regulator Authority of Chile since 2015, focusing on topics related to the pension system, participation in the system, its benefits, and the solidarity pillar. She has also been involved in the analysis of the different pension system reform proposals in the past eight years.
Before joining the Pension Regulator, she worked at the research departments of the Education Ministry, the Finance Ministry and the Service for the Prevention and Rehabilitation of Substance and Alcohol Abuse. She holds a master's in economics from the Pontificia Universidad Católica de Chile.

Paulina Granados is the Head of Research at the Pension Regulator Authority of Chile since 2017, acting also as Executive Secretary of the Asociación Internacional de Organismos de Supervisión de Fondos de Pensiones (AIOS).
Before joining the Pension Regulator Authority of Chile, she worked at the Employment Labour and Social Affairs Directorate of the OECD (2011-2017), at the Central Bank of Chile (2002-2005) and as Executive Director of Amnesty International, Chilean Section (1999-2001).
She holds a PhD in Economics from the European University Institute (Italy). She is Industrial Engineer and Master in Applied Economics from Universidad de Chile, Master in Economics from the University of Warwick (UK) and a Master of Research in Economics from the European University Institute (Italy).

Ximena Quintanilla is an economist from the University of Chile and holds a PhD in Economics from University College London. She has undertaken consultancies for the World Bank on social protection topics, worked for the Institute of Fiscal Studies in London on development economics, worked for the Undersecretary of Social Security in Chile and for the Superintendence of Pensions in Chile. In the latter, Ximena has analysed the extent to which different factors affect pension outcomes, the drivers for switching pension providers, the gender gaps within pension system and has carried out experimental evaluations to study the effect of different information sets on pension choice. Further, as head of the Research Division of the Superintendence, she has led the last two updates of the regulatory mortality tables applied to the pension system, which are used both to calculate benefits and reserves. As a senior member of the Superintendence of Pensions, she has been involved in several pension reform proposals.

SESSION 3: Pension Decisions

Are Risk Preferences Stable for Impactful Financial Decisions?

Jorgo Goosens (Radboud University Nijmegen; Tilburg University; APG; Netspar)

Abstract: Numerous methods to elicit people's risk preferences have evolved and evidence suggests that risk preferences may vary considerably when measured with different methods. We test this "risk elicitation puzzle" amongst 1600 pension fund members for which the stakes are large and their decisions are impactful. Based on a within-subject design using three well-known risk preference elicitation methods tailored to the pension domain, we find that the different methods give rise to varying estimates of risk preferences at the individual and aggregate level. We perform an in-depth comparison of the three risk elicitation tasks using simulation exercises. The observed heterogeneity in risk preference estimates across elicitation methods is similar to the heterogeneity arising from independent random draws from the choice distributions in the experiment. Observed risk preference instability across methods is more prevalent for individuals that are older, blue-collar workers, and lower income earners.

Bio: Jorgo Goossens is Assistant Professor in Finance at Radboud University, Institute for Management Research. He is also a Visiting Researcher at Tilburg University, Researcher at APG Asset Management, and a fellow of Netspar. Parts of his research are funded by grants from the NWO, Netspar, and GRI.
His research areas cover (behavioural) asset pricing, macro finance, experimental finance, and household finance. Most of his work focusses on non-standard preferences, asset pricing, and household finance.
Jorgo holds BSc. and MSc. degrees in Econometrics from Tilburg University. Additionally, he holds a MSc. degree in (teaching) mathematics from Eindhoven University. Finally, he holds a MPhil. Degree in Finance from Tilburg University and he received his Ph.D. degree in Finance & Econometrics from Tilburg University in February 2023.

Improving Pension Information: Experimental Evidence on Learning Using Online Resources

Denise Laroze (Universidad de Santiago de Chile) and Paulina Granados (Superintendencia de Pensiones Chile)

Abstract: When planning for retirement, deciding what to do with one's pension funds is a high-stakes, one-shot decision, often written in technical jargon that few people understand. It is therefore not surprising that workers experience an important level of stress during the whole pension process, and many of them even prefer to pay for advice or miss out on social benefits they are eligible for because they do not understand the retirement process. We argue that the learning process can be eased by providing information in video format (vs the standard text) and by changes to the user interface of the websites on which individuals learn about their pension options. The results of both a field experiment with 50 to 70-year-old participants and a lab experiment on university students suggest that videos are significant and substantively more effective in increasing the number of correct responses to a retirement comprehension test. The significance of this effect is robust to changes in the content of the videos, with equivalent impact in private and public pension schemes. The study is conducted in association with the Chilean Superintendencia de Pensiones and experts from the Instituto de Previsión Social.

Bios:
Denise Laroze is an Associate Professor at the Universidad de Santiago de Chile (USACH), she holds a PhD in Government from the University of Essex and MSc in Political Science and Political Economy from the London School of Economics (LSE). Her current research interests are experimental investigations on Decision Architecture in the area of credits and pensions. These studies look into what kinds of simplifications can be implemented to raise citizens' quality of life. She has previously studied the creation of new political parties, migration preferences, the propensity to lie, regional patterns in Covid infections, and premature mortality. The information needed to replicate her research is available at https://github.com/deniselaroze.

Paulina Granados is the Head of Research at the Pension Regulator Authority of Chile since 2017, acting also as Executive Secretary of the Asociación Internacional de Organismos de Supervisión de Fondos de Pensiones (AIOS).
Before joining the Pension Regulator Authority of Chile, she worked at the Employment Labour and Social Affairs Directorate of the OECD (2011-2017), at the Central Bank of Chile (2002-2005) and as Executive Director of Amnesty International, Chilean Section (1999-2001).
She holds a PhD in Economics from the European University Institute (Italy). She is Industrial Engineer and Master in Applied Economics from Universidad de Chile, Master in Economics from the University of Warwick (UK) and a Master of Research in Economics from the European University Institute (Italy).

Friends with Benefits: Strengthening Peer Effects through Aligning Reference Group Attributes to Consumer Traits
Pieter Verhallen (North Carolina State University; Netspar)

Abstract: Sharing information about peers' behaviour has been shown to influence a subject's behaviour across many contexts. However, such interventions have not always, and not for everyone, been effective. We propose that the alignment of specific salient reference group characteristics to specific subject traits underlies the effectiveness of peer effect interventions. Specifically, we look at two channels of influence: a normative and an informational channel. We test whether subjects' perceived social identification with and source credibility of reference groups interact with subjects' susceptibilities to normative and informational influence. First, we identify which reference group attributes (e.g., age, gender) have the largest impact on social identification and source credibility as perceived by a broad sample of pension fund participants (N=1,466). Next, we translate these results into peer effect interventions in the lab (N=220) and with an online panel (N=1,161), and find that higher social identification with a reference group results in norm convergence only if subjects' susceptibility to normative influence is high. Lastly, we test our theory in the field (N=222,596), and confirm that higher social identification with and source credibility of reference groups, through tailored peer effect interventions targeting subsets of a heterogeneous population, strengthens the peer effect. Compared to a control condition and a generic peer effect condition commonly used in industry, the tailored peer effect conditions in our field experiment increased the click-rate by 31 to 55 per cent.

Bio: Pieter Verhallen, Ph.D., is an Assistant Teaching Professor in Marketing and Faculty Senator at the Poole College of Management, North Carolina State University. He has held previous affiliations with Duke University, Maastricht University, as well as Universidad Panamericana Guadalajara, and is a research fellow at the Network for Studies on Pensions, Aging and Retirement (Netspar). With a background in psychology and life sciences (BSc), entrepreneurship (MSc), and marketing (PhD), his research focuses on consumer financial decision-making, and has been applied in the field with public and private organizations in both Europe and the United States to drive behavioural change. Next to his research, he founded, managed, sold and supported multiple digital and fast-moving consumer goods startups (Unilink, Game Collectibles Benelux, MiniTree, Asana, Dutch Webshop Company, Soapbox, Prolendo), conducting business with stakeholders in over 70 countries.

Quantifying the Insurance Effects of Japanese Social Insurance Policies on Household Structure

Charles Leung (City University of Hong Kong)

Abstract: The importance of social insurance programs and redistributive taxation systems in promoting a stable and inclusive society is heightened by the challenges of an aging population. This paper aims to investigate the relationship between household insurance capacity and the effectiveness of various social insurance policies in smoothing income across diverse demographic groups. By quantifying the insurance effects of each policy on different household characteristics, such as age, marital status, health status, and productivity levels, this paper offers a comprehensive analysis. Considering government budget constraints and the issues stemming from an aging population, our findings provide valuable insights for policymakers to develop targeted programs that improve social welfare and address the concerns related to an aging population.

Bio: Charles Ka Yui Leung received his B.S.Sc. at the ChineseUniversity of Hong Kong in 1991 and Ph.D. at University of Rochester in 1996. He has taught at the ChineseUniversity of Hong Kong (Department of Economics). He received the Fulbright Scholarship (Research) in year 2004-5 and has been a visiting scholar at FisherCenter for Real Estate and Urban Economics at Haas School of Business, University of California, Berkeley (2004-5); Hoover Institution, Stanford University (several times); Wisconsin School of Business, University of Wisconsin-Madison (2013 Fall); Institute of Social and Economic Research, Osaka University (2015 Spring). Since 2012, Dr. Leung also serves as a research associate of the Globalization and Monetary Policy Institute, Federal Reserve Bank of Dallas, a (non-resident) visiting research fellow of ISER, Osaka University (May 2015 ~ March 2019), a research associate of IREFIM (June 2018 ~).Most of the research output of Dr. Leung can be found in the following website: http://ideas.repec.org/e/ple96.html

SESSION 4: Pension Systems

Population Aging and Optimal Fiscal Progressivity

Fan Yang (McGill University)

Abstract: This paper provides a comprehensive quantitative analysis of the optimal fiscal reform for an economy facing demographic change. To do so, I build a standard overlapping generation heterogeneous-agent general equilibrium model, augmented with rich household heterogeneity and a realistic fiscal system. To conduct comprehensive fiscal policy reforms, I expand the conventional policy toolkit with payroll tax deduction, which injects more progressivity into the pension system. Moreover, I also consider a novel channel -- the fiscal interaction between social security and progressive income tax. The main findings suggest that the optimal pension benefit scheme is flat. In addition to the flat benefit, an augmented payroll tax deduction of around 15000$ can improve welfare at the cost of efficiency loss. The optimal reform considering fiscal interaction also features a flat pension scheme, but a less progressive income tax and slightly higher payroll tax cap. The reduction in the fiscal progressivity balances equity and distortions, improving efficiency significantly compared to reforms of the social security system only. While population

aging does not alter the patterns of the optimal policy, it raises the optimal level of fiscal progressivity compared to the counterparts under the status quo. The key reason for this is that as low-skill households live longer, the benefits of progressive policies increase.

Bio: Fan Yang is a Ph.D. candidate in Economics. His main research interest is in macroeconomics and public economics. He is particularly specializing in topics related to inequality, fiscal policy, demographic changes, and their interactions with agents' behaviours. His research combines empirical analysis using micro-survey data, and large-scale quantitative models to quantify heterogeneous agents' behaviour and study optimal fiscal policy reforms. He will become a postdoc researcher at McGill University in 2023 Fall and work on topics related to demographic change and caregiving. For more information about him, please visit https://www.fanyangecon.com/.

Dynamic Allocation Strategy with Retirement Bonds: The Case of Brazil
Arun Muralidhar (AlphaEngine Global Investment Solutions)

Abstract: Australian superannuation funds have focused a lot of attention, but have not solved the key issue of appropriate decumulation. Brazil issued a series of retirement bonds (RendA+) in January 2023 and withing the first six months had raised over R$ 1bn in AUM from 60,000 investors. This retirement bond innovation could provide a useful case study for Australia (and other countries) to adapt and adopt and we demonstrate how this retirement bond, along with an intelligent dynamic allocation strategy can help individuals have a high probability of achieving retirement goals, unlike current products offered to participants.
The goal of investing for retirement is to secure a target level of income that maintains the individual's preretirement lifestyle. Current "safe harbor" glide-path products shift investments from stocks to bonds on the basis of the individual's age. This approach is unlikely to secure a target retirement income because the glide path is focused on the wrong goal. Additionally, naïve static 60/40 type portfolios are also unlike to provide secure retirement income. We tested a dynamic asset allocation strategy that takes no view of future market performance and is based on a retirement income goal, but leverage the fact that investors now have access to the new retirement income bond in Brazil (and currently contemplated in many developed and developing countries). We show how this dynamic strategy could dominate standard portfolio choices. The article introduces a new way to think about intermediate retirement targets and explores the implications of the dynamic asset allocation strategy for the level of savings required to achieve a retirement goal.

Bio: Co-Founder of Mcube Investment Technologies LLC and creator of the retirement bond and education bond ideas. Currently advising governments on the design and implementation of such instruments. PhD MIT Sloan School of Management 1992. Authored 4 books on pensions and investments, including a book with Nobel Laureate Franco Modigliani and multiple papers with Nobel Laureate Robert C. Merton.

"Growing Pains" in China's Social Security System
Xincheng Qiu (Arizona State University)

Abstract: This paper investigates the puzzles in China's social security system. First, given the relatively low benefit rate and still relatively young demographic structure, the statutory contribution rate is surprisingly high and the social security fund is already in deficit. Second, despite the low statutory retirement ages (50 for women and 60 for men), early retirement is prevalent. We develop and calibrate an overlapping generations model of optimal social security featuring wage compression relative to workers' productivity, which we micro-found by older workers' fairness concerns. The theory provides a novel and unified explanation for these facts, focusing on the labor demand side forces: firms

are not willing to hire older workers who have lower productivity relative to the younger cohorts but demand wages that rise with those of the younger cohorts. We find that, paradoxically, the rapid inter-cohort productivity growth, a phenomenon we documented in Fang and Qiu (2022), is at the root of these puzzles, leading to “growing pains” in China’s social security system. Our quantitative analysis reveals that surprisingly, the “growing pains” in China’s social security system will be “cured” when the inter-cohort productivity growth slows down to the levels in more developed economies.

Bio: I am an Assistant Professor at the Department of Economics, W. P. Carey School of Business, Arizona State University. I received my Ph.D. from the Department of Economics, University of Pennsylvania, in May 2023.

Allocation of Longevity Gains in Public Pension Plans

Eduard Ponds (Tilburg University; APG Asset Management)

Abstract: This paper analyses for a sample of 17 OECD countries the impact of the longevity trend on the implied return over time of public pension plans. We are interested in a fair and sustainable allocation. Using a stylized model, we derive as fair rule that the increase in life expectancy is distributed proportionally over the working and the retirement period, so that the ratio of working period length and pension period length will remain stable for different cohorts. We calculate for a sample of 17 OECD countries the internal rates of return of participating in the public plans of these countries for cohorts born in the period 1935-1990. The fair rule, compared to the historical practice, lead to an average reduction of the internal rate of return with around 0.5%-point. We also confirm that the fair rule implies a more stable ratio of retirees over workers and a more stable contribution rate.

Bio: Prof. Dr. Eduard Ponds holds the chair of Economics of Collective Pension Plans at Tilburg University. He is expert in economics of pensions and collective pension plans, in particular in the fields of pension funds, pension plan (re)design, risk management, actuarial aspects, intergenerational risk sharing, and classic and value-based ALM. His publications are mainly on collective pensions, in particular related to the pension fund sector in the Netherlands and elsewhere.

He is also employed at APG as researcher (www.apg.nl), a pension service provider in the Netherlands with 600 bln euros AuM and 25 clients (end 2022).