



SOCIETY OF  
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2019 **ANNUAL  
MEETING**  
& EXHIBIT

October 27-30  
Toronto, Canada

## Session 097: Global Ageing and Product Innovation

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# Global Ageing and Product Innovation

**Doug Andrews, FSA, FCIA**  
**University of Waterloo**

October 29, 2019



# Population Aging, Implications for Asset Values, Impact for Pension Plans: An International Study

*A very brief overview of this and related  
research by*

*Doug Andrews*

*Project Director*



# Acknowledging Our Partners

- Society of Actuaries
- Institute and Faculty of Actuaries
- Canadian Institute of Actuaries
- University of Kent
- University of Waterloo
- Social Sciences and Humanities Research Council
- National Pension Hub (part of Global Risk Institute)
- International Actuarial Association
- International Centre for Pension Management

# Acknowledging Key Contributors

- Miguel Leon-Ledesma, Jaideep Oberoi, Aniketh Pittea, Pradip Tapadar – University of Kent
- Steve Bonnar, Lori Curtis, Kathleen Rybczynski, Tony Wirjanto, Mark Zhou – University of Waterloo
- The **Research Oversight Group** established by the SOA, IFoA, and CIA
- Various research assistants including Soheyl Sadinejad and Giovanna Apicella

# Population Structure Affects Asset Values/Returns

- Theoretical approach – using an OLG model with 5 life stages we find returns are reduced by approximately 4% in aggregate when survival probabilities above age 65 are increased by 4%
- Empirical analysis of equities, infrastructure, housing, bonds – we find significant impacts for the first three; property (REITs) would likely be affected but we have not completed this analysis

# We Examine Pension Risk Management Using an Economic Capital Approach

- Develop an Economic Scenario Generator using a graphical model – with and without a demographic node
- Wide range of possible outcomes with long left [**LOSS**] tail – but US stylized plan more volatile than UK plan
- Long bonds more useful for US stylized plan than UK plan
- Asset allocation more effective risk management tool than adjusting contribution rate

# Obstacles to Aging in Place - Financial

- Unsatisfactory terms for Home Equity Release in terms of loan to value ratio
- An unbundled approach might lead to better risk management resulting in better pricing

# Obstacles to Aging in Place – Health & Social

- Smooth transitions through requiring some assistance to long-term care are desirable
- Current alternatives in Canada are expensive; Netherlands has stichtings
- Alone Stage of Retirement – how will we care for our women? Robots?

# Two Alternatives For Reflection

- Basic Minimum (or Guaranteed) Income – not as costly or disincentivizing as the fear mongers suggest
- Increasing the age for social security and the amount payable – surrounding this with a safety net of social assistance - *providing greater opportunities for product innovation*

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# About us



The Institute of Actuaries of Japan

*Think the Future, Manage the Risk*

- ✓ IAJ, founded in 1899, engages in a broad range of activities including:
- study and research of actuarial science,
  - the education of actuaries,
  - administration of the qualifying actuarial examination system,
  - facilitation of professional/cultural exchanges with overseas actuarial organizations.

# Agenda

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1. Serious situation of Japan's aging society
2. Customer anxiety triggered by aging population
3. How we relieve customer anxiety

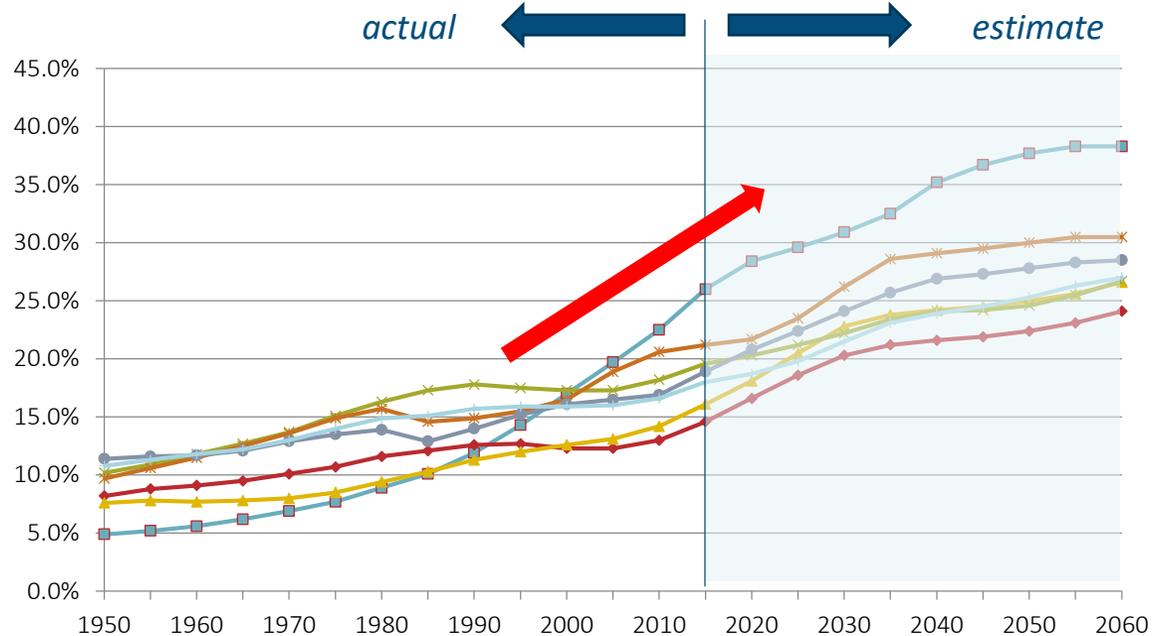
# **Serious situation of Japan's aging society**

# Aging pace in Japan

- Almost the same pace as that in America and European countries until around 1990
- Outgrown other countries / The most aging country in the world

## Trend of aging ratio

Here aging ratio means the percentage of people over 65.



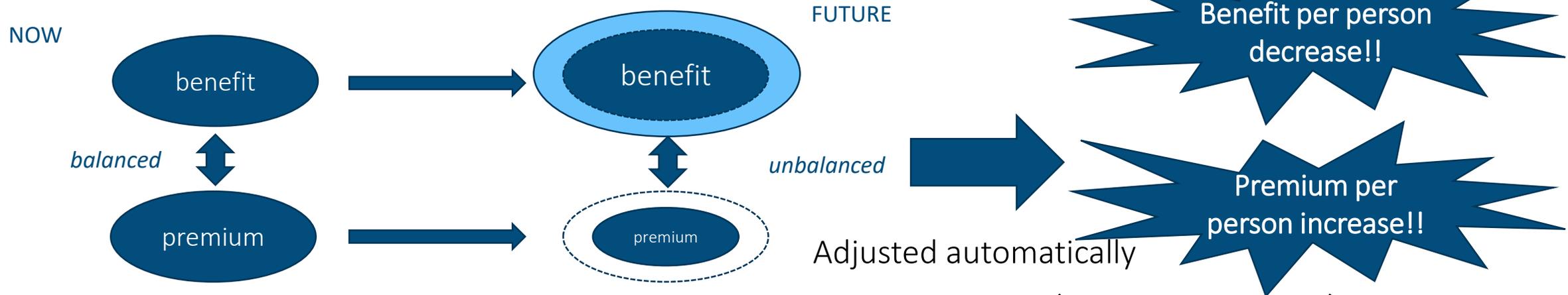
	(2015)
JPN	(26.0%)
USA	(14.6%)
CAN	(16.1%)
SWE	(19.6%)
DEU	(21.2%)
FRA	(18.9%)
GBR	(18.0%)

Source: Created based on World Population Prospects: The 2017 Revision (UN)

# **Customer anxiety triggered by aging population**

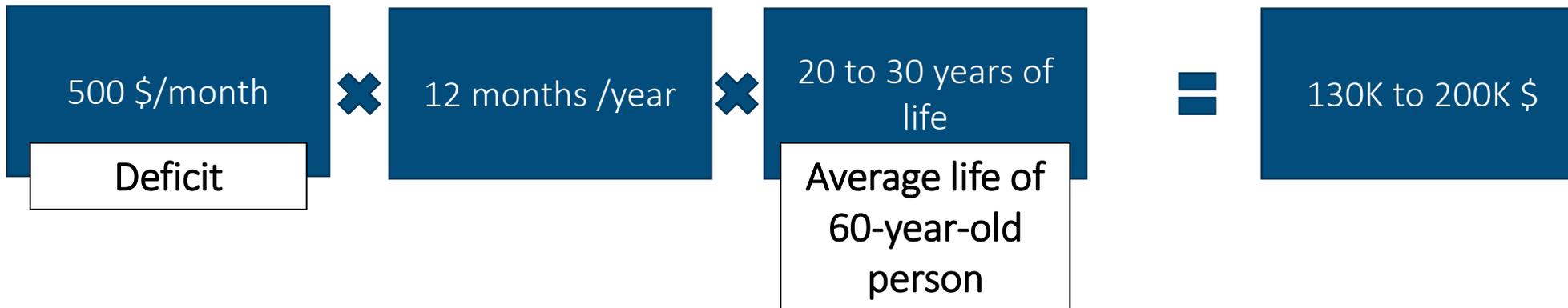
# Customer anxiety triggered by aging population

## Public pension



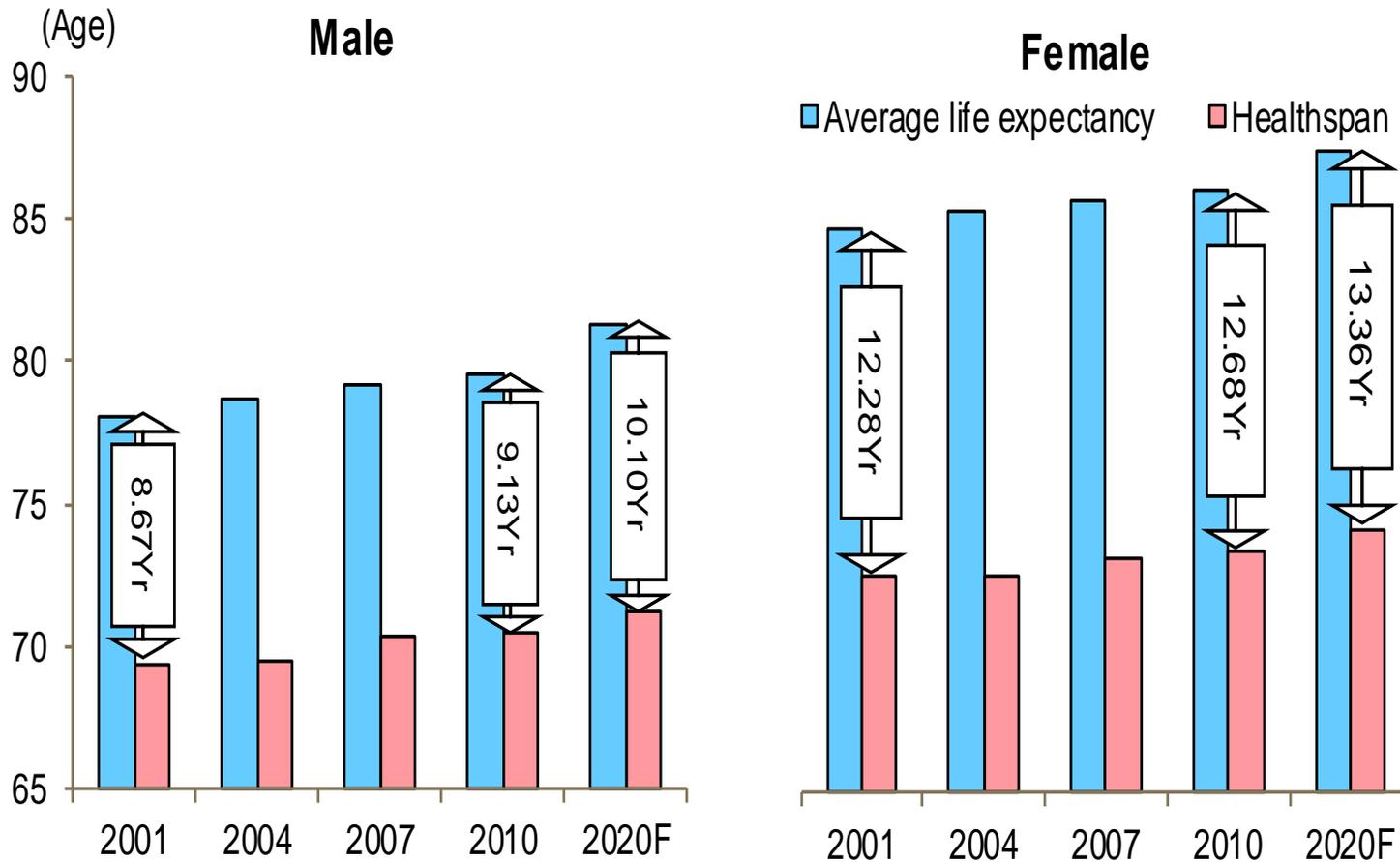
- Public pension won't be enough to sustain life after retirement. (200K \$ problem)

## 200K\$ problem



# Customer anxiety triggered by aging population

## Trend of life expectancy and healthy life expectancy

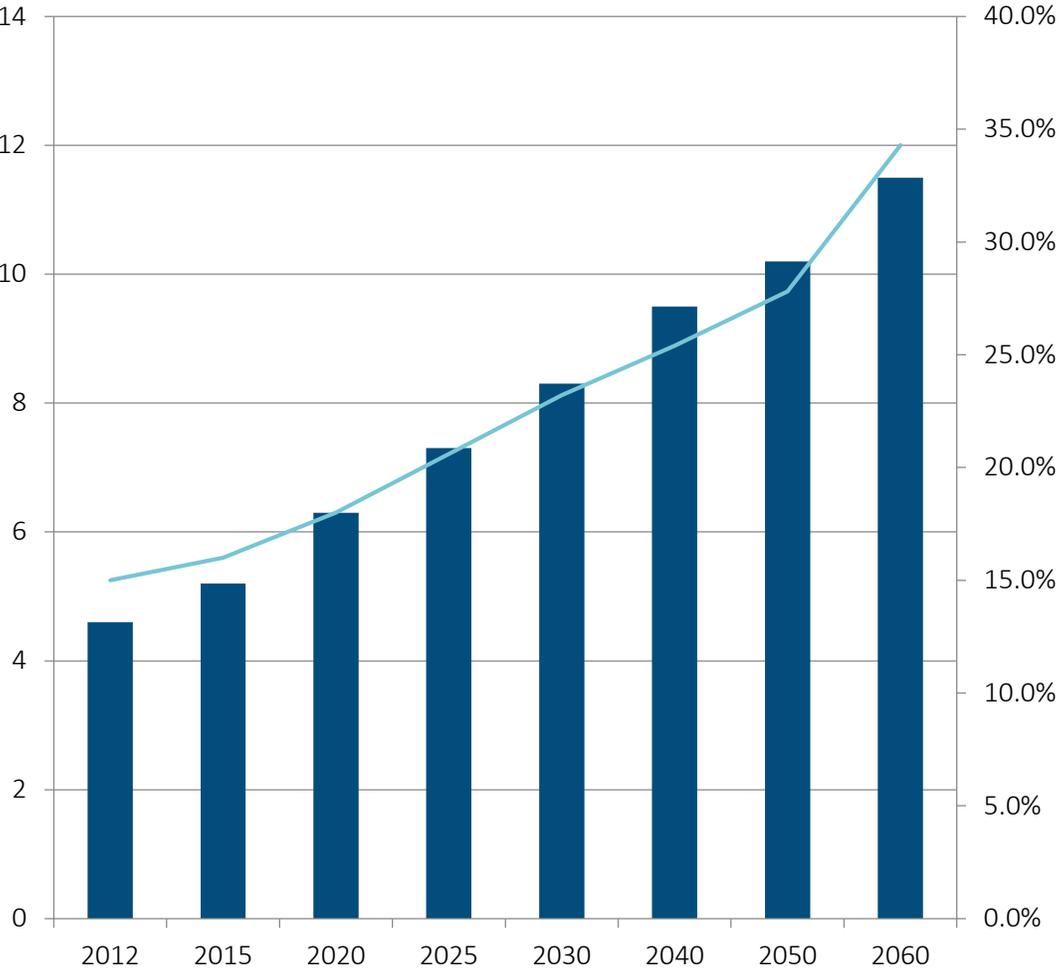


Japanese people have been suffering from some kind of disease for more than 10 years

Source : Ministry of Health, Labor and Welfare, National Institution of Population and Social Security Research

# Customer anxiety triggered by aging population

## Trend of the number and percentage of people with dementia



Dementia care is expensive...  
Annual social cost  
⇒ Around 1,350 billion \$

Dementia parents don't want to burden their family.

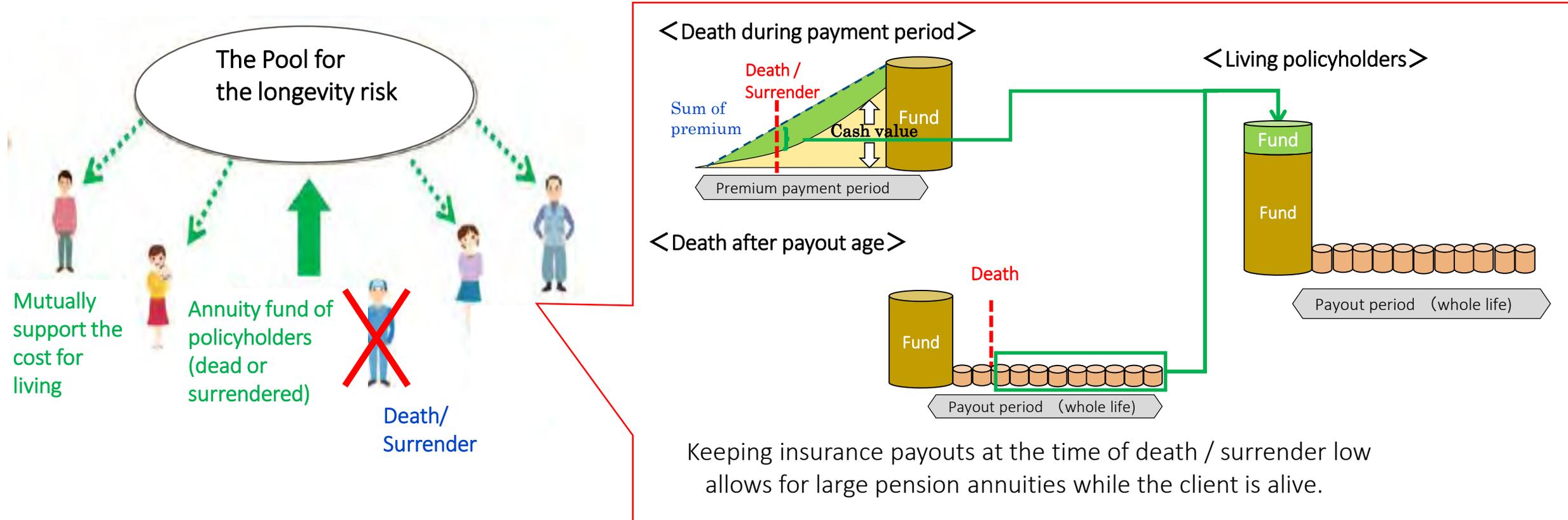
Source: Created based on the outline (Ministry of Health, Labor and Welfare) of the comprehensive strategy for promoting cognitive impairment measures (new orange plan)

# How we relieve customer anxiety

# Tontine annuity

Help growth of asset for life after retirement

= lapse-supported / early-death-supported annuity

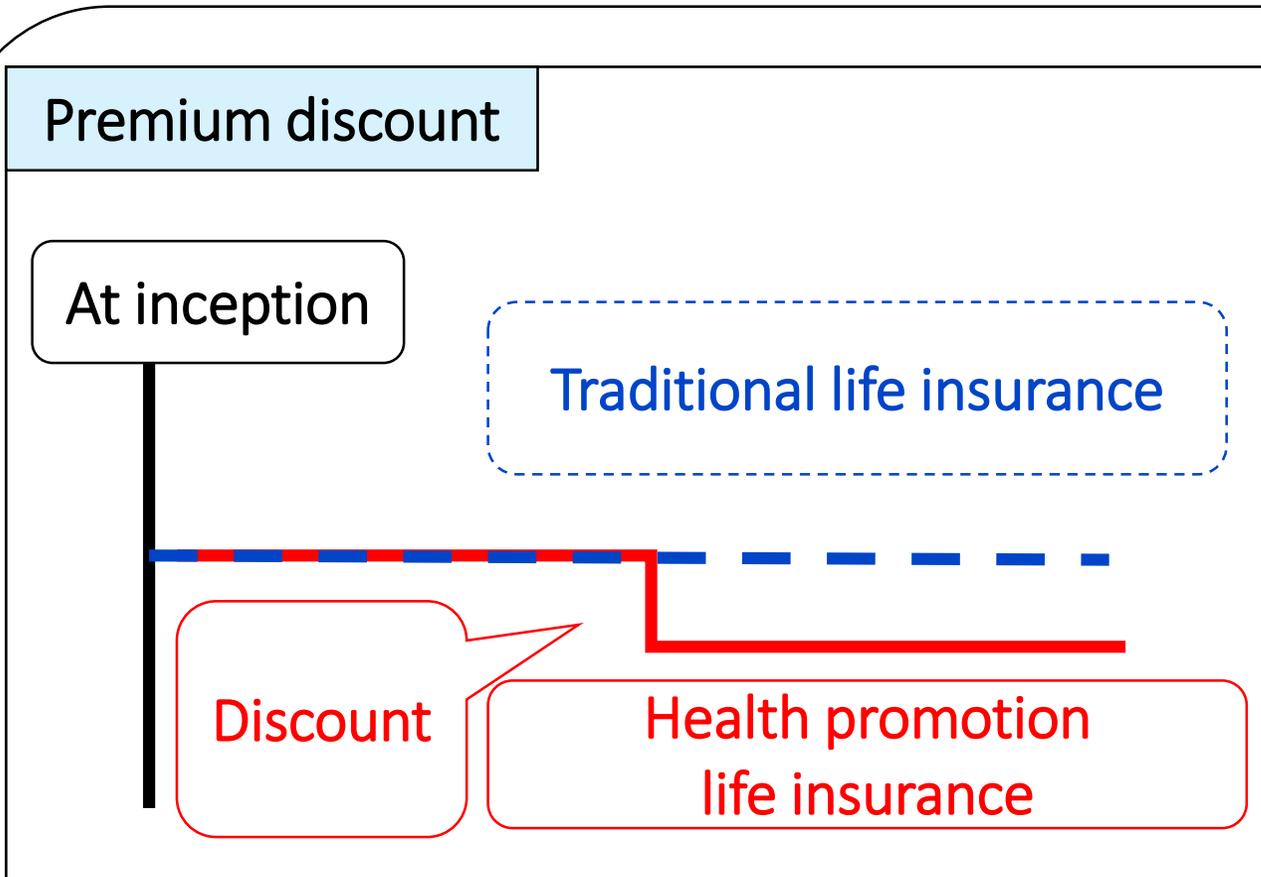


- The break-even ages are estimated conservatively, e.g. About 90 years old for male.  
(Japanese Life Expectancy (2018) – Male: 81.25 / Female: 87.32)

# Health promotion insurance

Contribute to enhance healthy life expectancy

Offering incentives to customers to improve their health condition and follow a healthy lifestyle.



## Example 1

Premium rebate (1 month ~ 2 month)

- Steps (more than 8,000 steps)

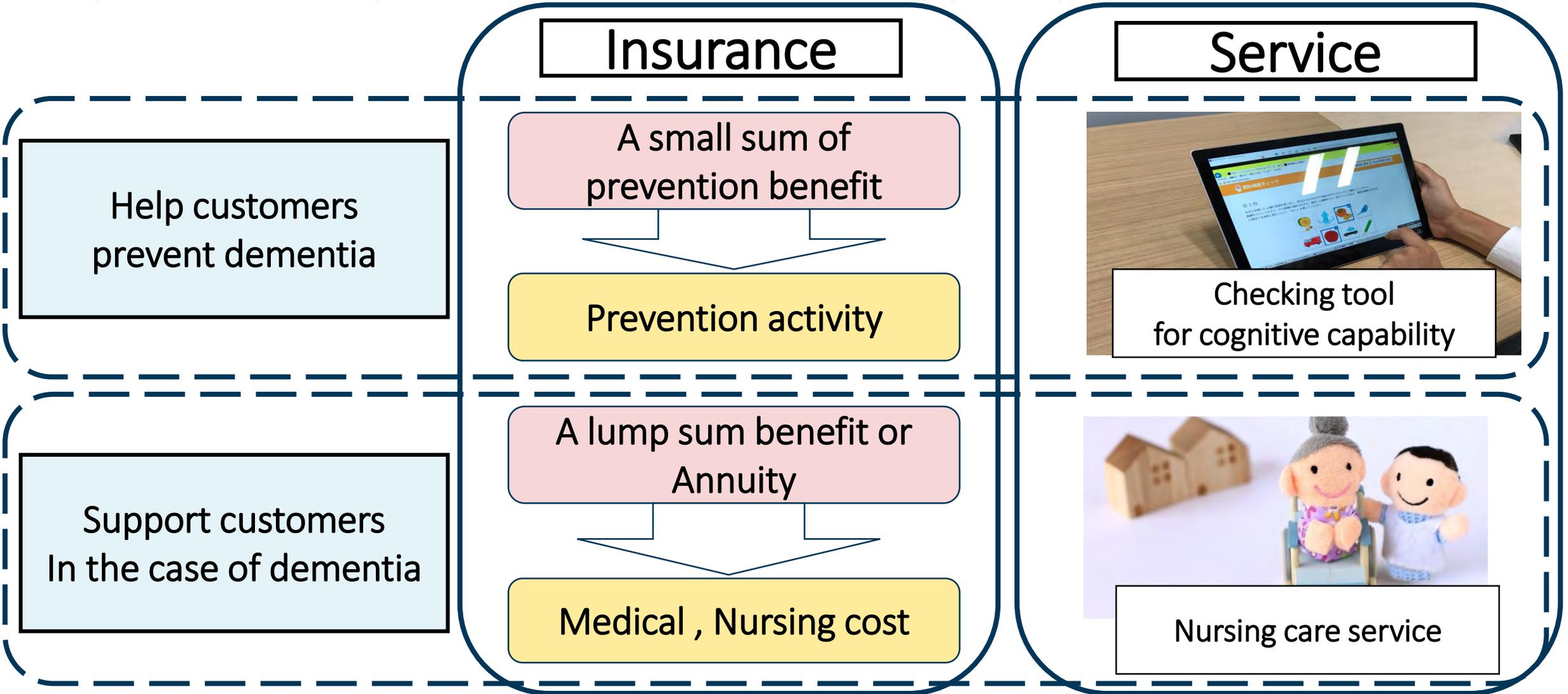
## Example 2

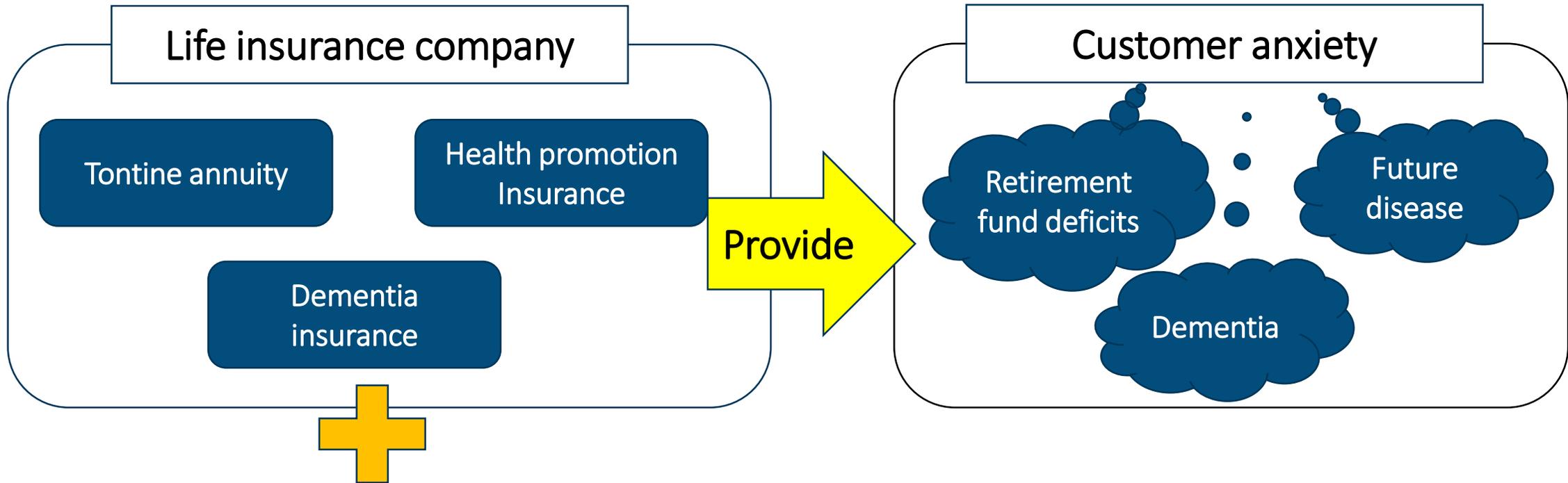
Premium discount (up to 33%)

- Improvement of BMI (18-27 is best)
- Improvement of Blood pressure (min < 90mmHg and max < 140mmHg is best)
- Success in stop smoking

# Dementia insurance

Help customers prevent dementia and support people with dementia





We should improve each procedure to be elderly-friendly !

When selling insurance

Are sales documents easy enough to understand ?

When claiming benefit

Should we designate proxy beneficiary  
In case beneficiary(=insured ) gets dementia?

etc...

# Session Title: Session 097 Global Ageing and Product Innovation

**Presenter Name:** Matt Singleton

**Date:** Tuesday, October 29, 2019; 10:15am – 11:30am



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# Ageing: a sizeable opportunity for North America (and beyond)

**Presenter Name:** Matt Singleton, Swiss Re

**Date:** Tuesday, October 29, 2019; 10:15am – 11:30am



# Today's traditional consumers; tomorrow's "new" consumers

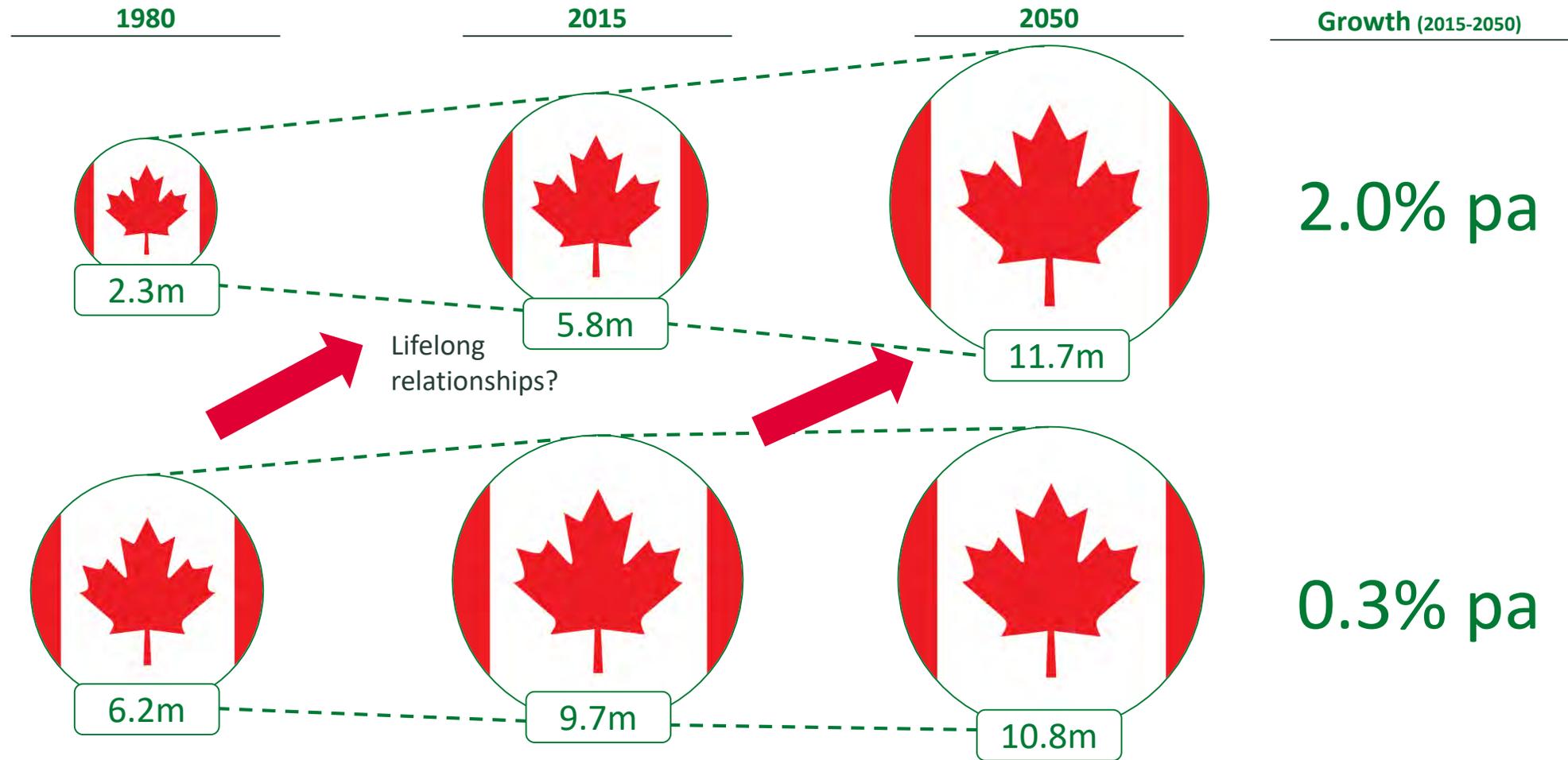
Canada



**"New", ageing consumers**  
(People aged 65+)



**Traditional consumers**  
(People aged 30-49)



Access a growing, wealthy segment – yours, or your competitors' consumers

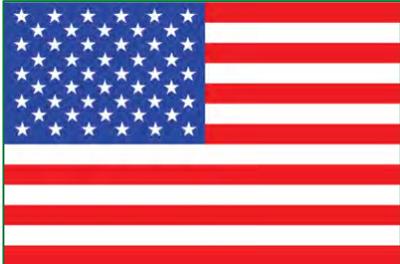
 = Above average

# Gain greater access to a growing segment

Age range	Proportion of population (2020)	Proportion of population (2050)	Mean income per household (before tax, \$'000s)	Mean net worth per household (\$'000s)
20-35	45%	43%	56.4	76.2
35-44			97.1	288.7
45-54			<b>131.4</b>	<b>727.5</b>
<b>55-64</b>	<b>29%</b>	<b>34%</b>	<b>141.3</b>	<b>1,167.4</b>
65-74			<b>106.6</b>	<b>1,066.0</b>
≥75			77.1	<b>1,067.0</b>

Age 55-70

- ✓ A population of 56m (= market the size of Australia + Belgium + Iceland + Ireland + Puerto Rico!)
- ✓ High income
- ✓ High wealth
- ✓ Trust in insurance
- ✓ Looking for new solutions for their longer lives



# Who pays for ageing?



THE ANNUAL AMOUNT SPENT TO FUND THE LIVES OF PEOPLE OVER AGE 65, ACROSS 3 MAJOR SOURCES



ESTIMATES

How much does it cost to support an American senior?

TOTAL ANNUAL SPEND



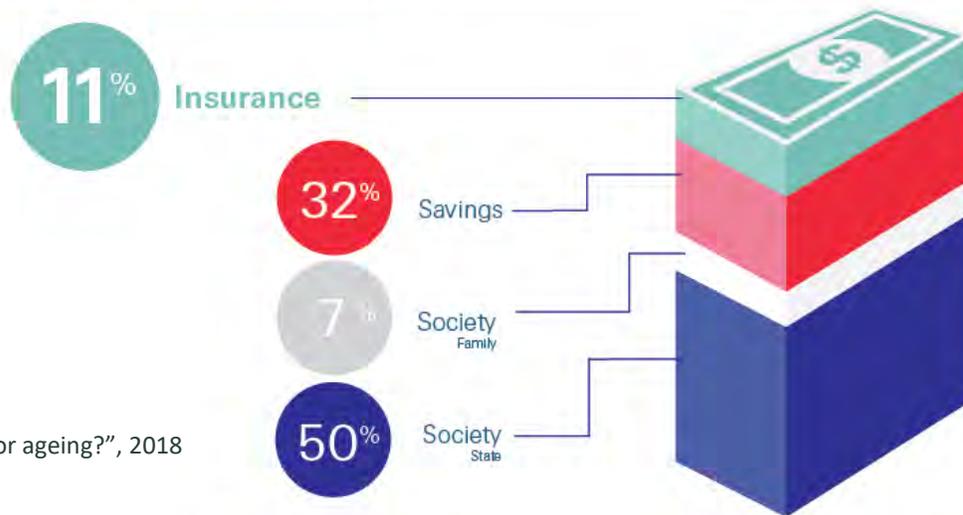
FOR EVERYONE OVER AGE 65

AVERAGE ANNUAL SPEND



PER PERSON OVER AGE 65

Who pays for the ageing?



Source: Swiss Re "Who pays for ageing?", 2018 (2015 figures in USD PPP)

THE ANNUAL AMOUNT SPENT TO FUND THE LIVES OF PEOPLE OVER AGE 65, ACROSS 3 MAJOR SOURCES



ESTIMATES

How much does it cost to support a Canadian senior?

TOTAL ANNUAL SPEND



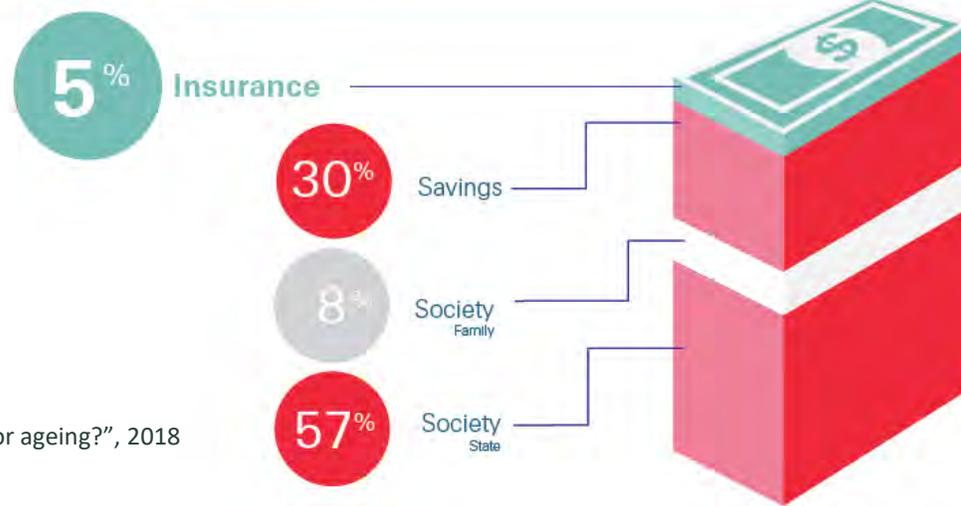
FOR EVERYONE OVER AGE 65

AVERAGE ANNUAL SPEND



PER PERSON OVER AGE 65

Who pays for the ageing?

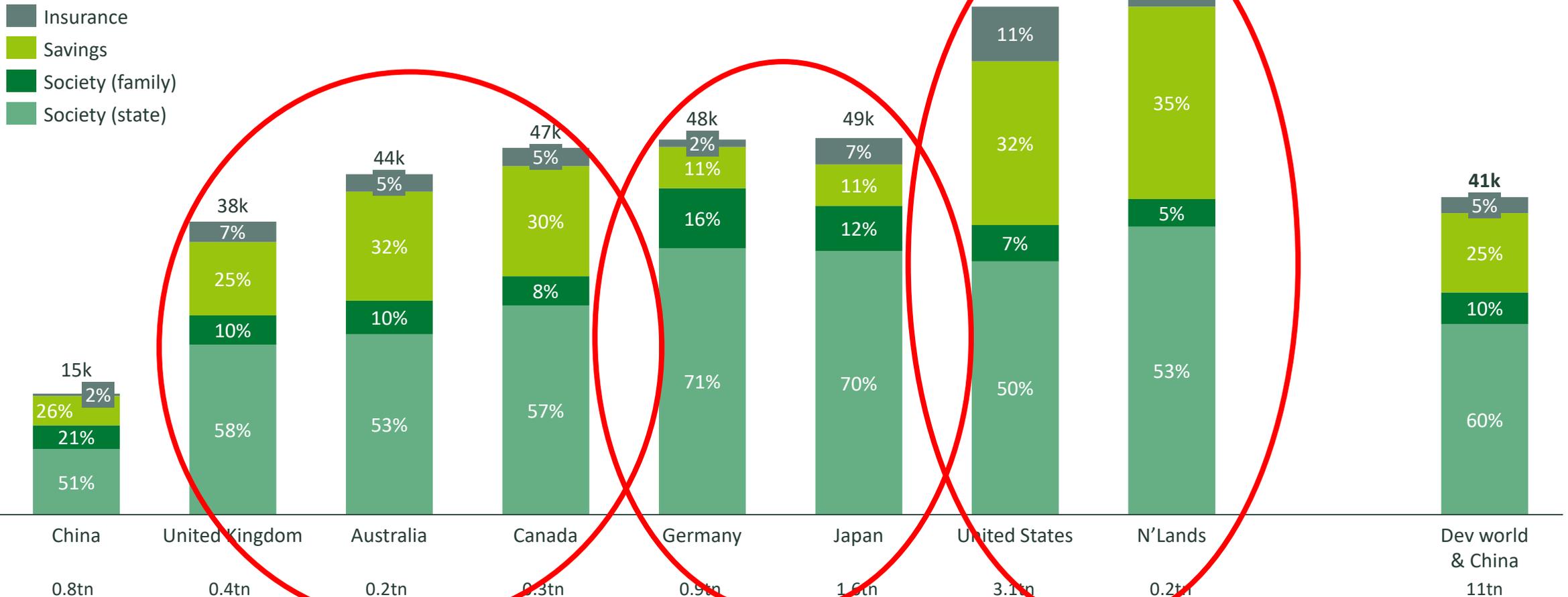


Source: Swiss Re "Who pays for ageing?", 2018 (2015 figures in USD PPP)

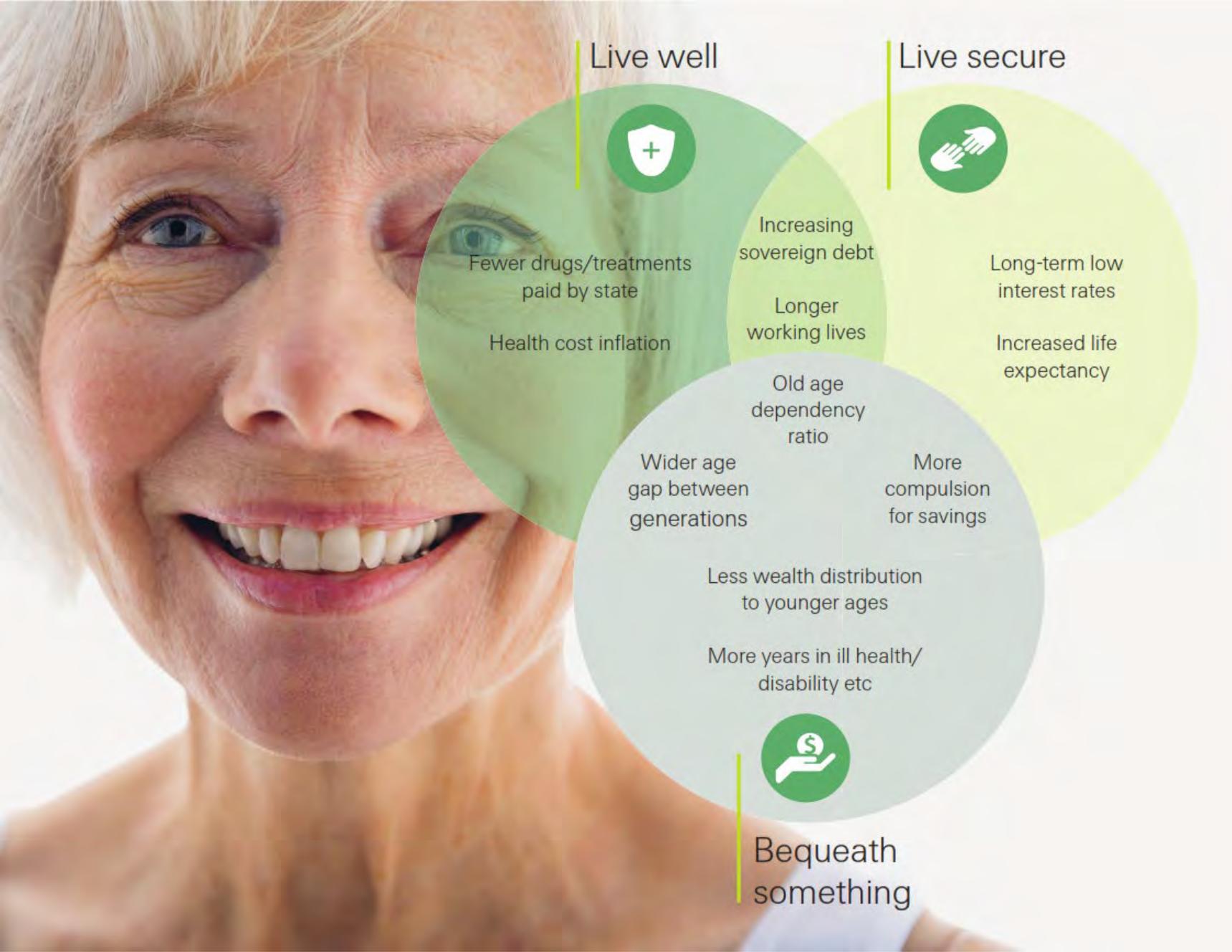
# North American markets vs others

Who pays for ageing?

Selected markets, per capita USD PPP, 2015



ESTIMATES



# Multiple trends impact consumer needs and funding sources

# Who are the ageing?





# In-depth consumer insights establish new avenues towards growth in ageing

Focus groups and individual interviews

(1,410 hours with consumers)

Family sessions

(640 hours with consumers)

Online survey for segmentation

(4,500 hours with consumers)

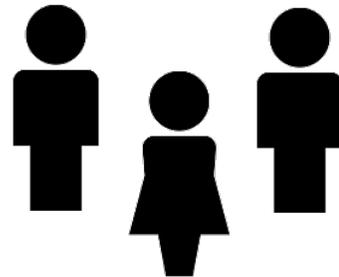
Online and in person concept testing

(5,000 hours with consumers)

Working life  
(age 35+)

Pre-retirement  
(age 50+)

Post-retirement  
(age 65+  
55+ in China)



9,000 consumers in 9 markets

10,000 consumers in 5 markets

Who are they? How we should think about them



### My vision for ageing is...

retreat in the nest

a time to spread wings

My approach to provision is...

prepare the nest egg



The Planner



The Entrepreneur

head in the sand, no plan



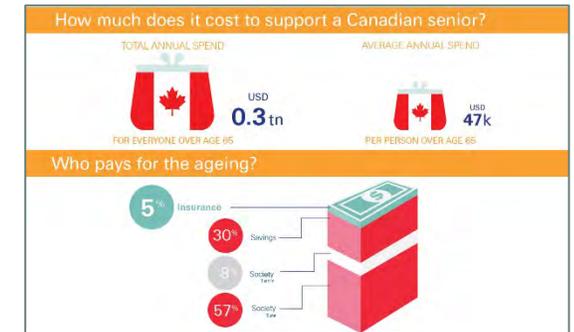
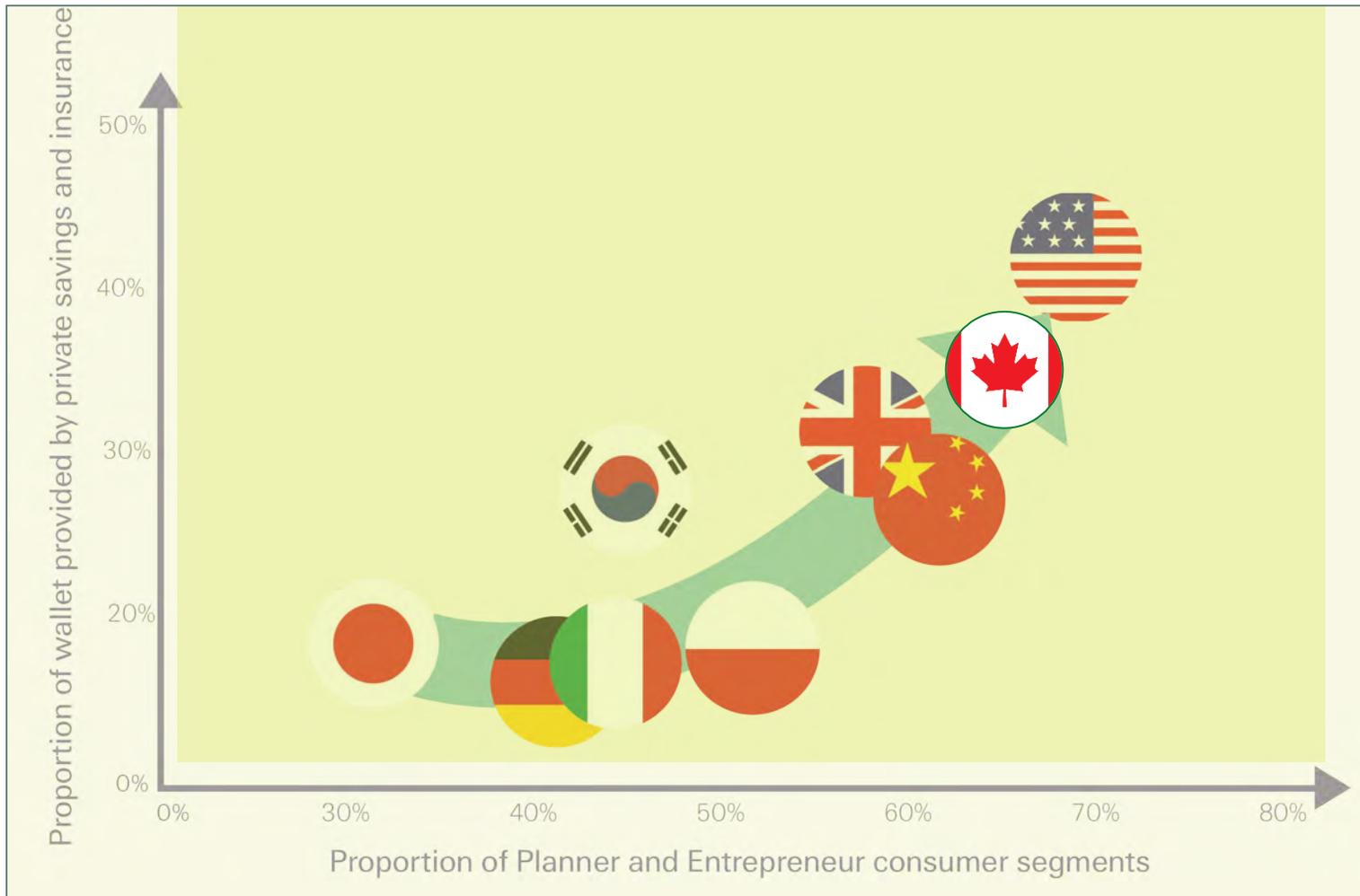
The Recipient



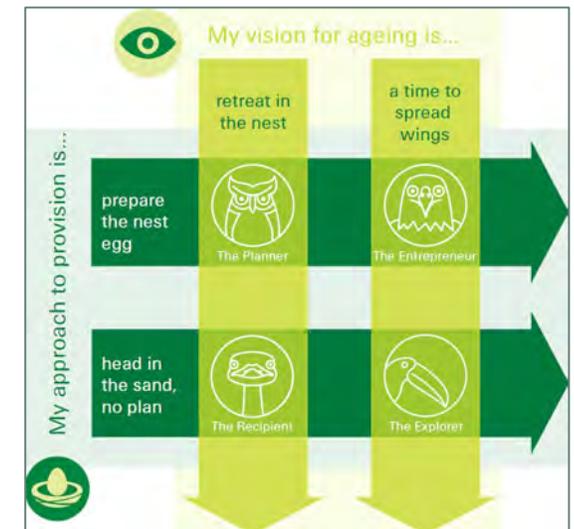
The Explorer



# We can use the “share of wallet” analysis to map Canada’s segments



Higher privatisation = more planners / entrepreneurs



# The segments' stories in the US and UK

## Vision

Stability & Defence

Dynamism & Open-mindedness

Preparedness

Control & Optimise

	Planner	Entrepreneur
Control & Optimise	<p><i>"I planned for everything I could think of but what about the unpredictable? That scares me."</i></p> <ul style="list-style-type: none"> <li>• Highest planning level – driven by duty</li> <li>• Tend to have dependants</li> </ul> <p><i>"You have to have as much in place as you practically can."</i></p> <p> 34%</p> <p> 24%</p>	<p><i>"I carefully invested in my future, I am very confident and relaxed, it should be a great time."</i></p> <ul style="list-style-type: none"> <li>• Financially-savvy</li> <li>• Love to advise and demonstrate expertise</li> </ul> <p><i>"Figures is what I live and breathe. It's making sure you maximise your opportunities."</i></p> <p> 35%</p> <p> 34%</p>
React & Ignore	<p><i>"I haven't planned much, now my retirement is around the corner and I panic."</i></p> <ul style="list-style-type: none"> <li>• Overwhelmed by choices – didn't plan, feel it's too late</li> <li>• Procrastinators – highly trigger-driven</li> </ul> <p><i>"My parents' generation, everything unfolded as expected. For me, that's not going to happen."</i></p> <p> 17%</p> <p> 22%</p>	<p><i>"I don't want to think too much about the future, life will treat me well. I'll manage."</i></p> <ul style="list-style-type: none"> <li>• Wish upon a star attitude to avoid discussion</li> <li>• Value driven – from bohemian to new conservative</li> </ul> <p><i>"I'm happy, but prepared no. Why put money away? I can enjoy it now, so I spend it."</i></p> <p> 14%</p> <p> 20%</p>

Consistent segments worldwide – market differences

# What do consumers want?



Daughter: *"We're a family, we're here for each other and if someday my parents need my help, I'll take care of them"*



Mother: *That's great to hear, but we're planning to make sure it doesn't happen, I want my daughter to be around but I don't want to be a burden"*

Daughter: *"We want to get to a point where if either set of parents needed support we would want to be able to pay for support"*



Son: *"I would definitely be there to help pay for them"*

Mother: *"We talk about it because I want him to prepare, I don't want him to make the same mistakes I did"*



Son: *"And I'm fine with that. I don't love being lectured but I trust that she has my best interest at heart"*

Can we do more to help the family unit to address the later-life challenge?



*"Money is the key, if you have money you can have good doctors, you can go to the best nursing homes..."*



*"Health and care are related, I don't really see the difference, your loss of independence is usually caused by health issues, no?"*

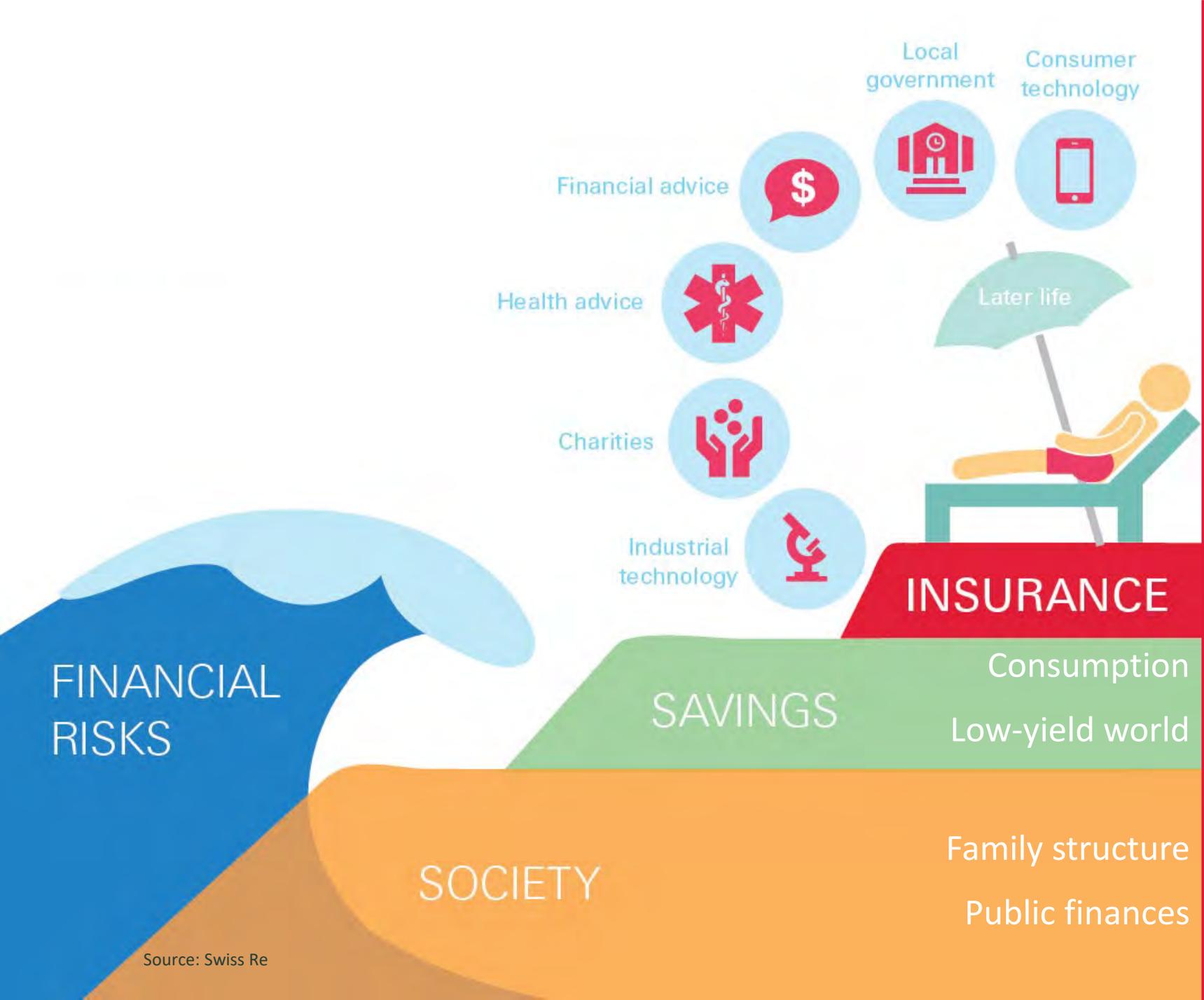


*"Health starts with **keeping fit and eating well**. Money's important, but if you haven't got your health...\*"*



*"I try to save some [money] to pass on to the children and **grandchildren**"*

Can we address needs by starting with the risk?



Can insurance be a gateway to better services in later life?

Source: Swiss Re

# Forward-looking insurers are changing their views and increasingly focus on consumers' needs

“We protect you from the risk of...”



“Protect yourself from the risk of being unable to pay for institutional care”

“Protect yourself from the risk of outliving your savings”

“Protect your children’s inheritance”

Traditional protection solutions

“We listen to consumer needs...”



“Don’t let me go into a care home – keep me independent and as healthy as possible”

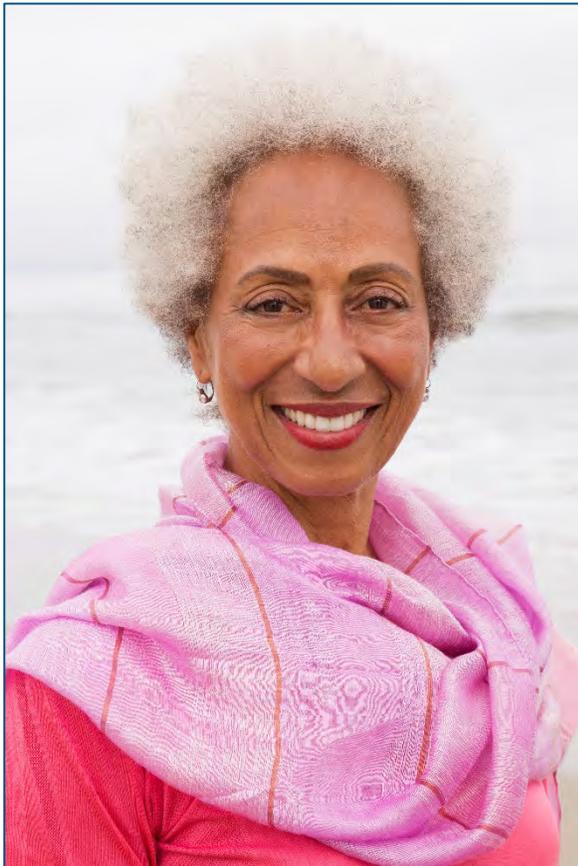
“I rely on my savings and the state – but I need backup in case it fails me”

“Help me make plans if I reach a stage of cognitive decline”

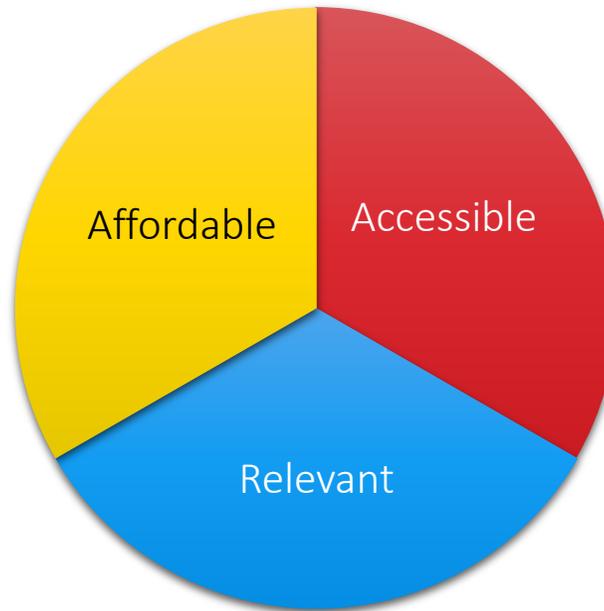
“I’ve done quite well in life, but I’m worried about my grandkids’ future”

Solutions to solve more real-life needs

# We need to create innovative solutions to address diverse needs of senior consumers



Senior Solutions must be:



Examples from around the world

Senior cancer coverage

Critical Illness cover for seniors

Whole of life care accelerators

Medical insurance for seniors

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