

A cross country study of saving and spending in retirement

[Saving preferences in retirement: the impact of mandatory annuitization, flexibility and health status]

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Jennifer Alonso Garcia, Hazel Bateman, Johan Bonekamp,
Ralph Stevens, Arthur van Soest

Network for Studies on Pensions, Aging and Retirement

Outline

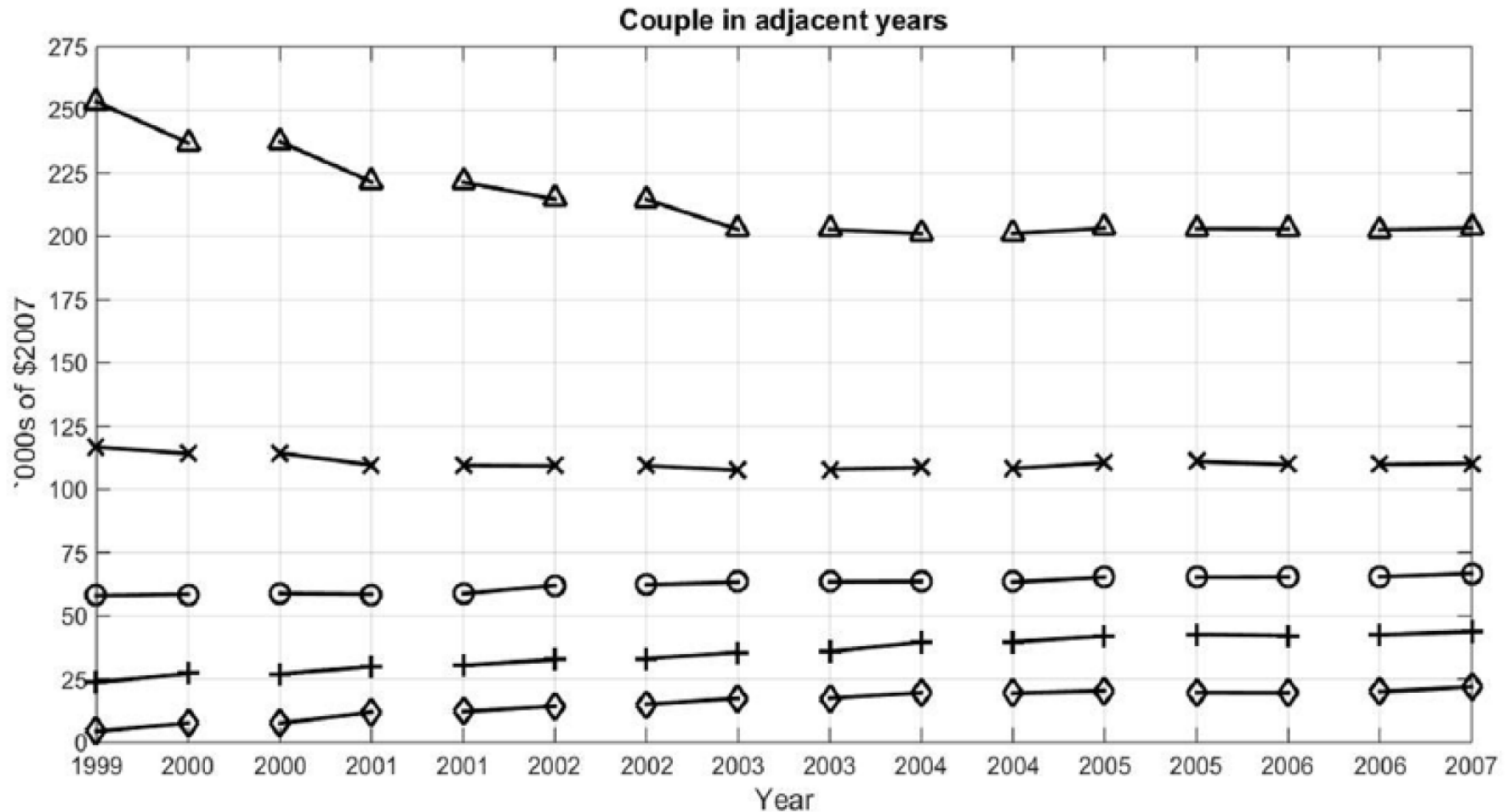
- Background
- Research design
- Descriptive statistics
- Model and estimation
- Implications for policy and product design

Background

Two key facts:

- Retirees hold on to their wealth and/or continue saving well into their later years in both DB and DC systems
 - Australia (Asher et al. 2017)
 - The Netherlands (Van Ooijen et al. 2015)
 - USA (Dynan et al. 2014; Poterba 2015)
- Global move from DB (pensions) to DC (flexible benefit design) + some convergence of benefit design

Australia retiree couples continue to build (non-housing) wealth in retirement



Source: Asher et al, 2017, Figure 3

Many similarities in pension systems in Australia and The Netherlands

Australia

- General revenue financed Age Pension (means-tested)
- Mandatory superannuation guarantee
 - DC
 - choice of benefit: lump sum, phased withdrawal, annuity
- Voluntary saving

The Netherlands

- Non contributory public pension
- Mandatory pension coverage
 - DB
 - Benefits paid as life time pensions
- Voluntary saving

and a key difference in benefit design – with policy proposals to converge

Australia

- General revenue financed Age Pension (means-tested)
- Mandatory superannuation guarantee
 - DC
 - choice of benefit: lump sum, phased withdrawal, annuity [*Flexibility*]
- Voluntary saving

The Netherlands

- Non contributory public pension
- Mandatory pension coverage
 - DB
 - Benefits paid as life time pensions [*Annuitization*]
- Voluntary saving

Implications

- Raises questions about:
 - Saving motives of the elderly
 - Decumulation policy design
 - Menu of retirement benefit products
 - Rationale for public support for retirement incomes (expenditures, tax support)

Research Questions

- What are the **savings motives** of the elderly?
 - Rational explanations (precautionary saving, bequests) and/or behavioural/psychological reasons
- What is the impact on saving (and spending) in retirement of:
 - **benefit design policy** (*Australian flexible drawdown vs. Dutch annuitization*)
 - **future health expectations** (*help with ADLs, death of partner*)
 - **personal characteristics** – demographics, financial competence, psychological traits
 - **Country**

Research design

Online experimental survey of saving and spending in retirement

- Australia and The Netherlands, pre-retirees aged 50-64
- The Netherlands: LISS and the DNB Household Survey (via CentERpanel), 1,437 participants, December 2016
- Australia: Commercial web panel provider 'TEG Rewards', 983 participants, March 2017

Experimental design

- Preliminary: screening
 - Individuals aged 50-64 and not retired (or at least one of a couple not retired); 4 groups by gross household income
- Section 1: Spending and saving task (8 choice sets)
 - 4 retirement benefit treatments**
 - Flexible drawdown [Australia]
 - Hybrid
 - Full Annuitization [The Netherlands]
 - *Implied Endorsement*
 - 4 future health expectations treatment**
 - Both good health, one good health + 1 ADL limitation, one good health + 1 not alive, 1 ADL limitation + 1 not alive
- Section 2: Planning and personality traits
- Section 3: Pension arrangements and financial competence
- Section 4: Demographics and personal characteristics

Base vignette

The household consists of two individuals currently 65 years old who have just retired. **[FUTURE HEALTH EXPECTATIONS]**

The household has a net of tax lifetime income of **[INCOME]** and their wealth at retirement is **[WEALTH]**. The household owns the house they live in without a mortgage. They don't want to move or sell their house. If one member of the household dies, the survivor will receive less income but also spend less. The reduction in income is roughly equivalent to the reduction in spending.

At retirement the household has to plan how much they expect to save and spend, based on their current income and wealth. The following table shows five different spending plans, together with income and wealth at different ages (if they survive). If the wealth is exhausted then the household has to adapt their spending to their income. **[IMPLIED ENDORSEMENT]**.

PART A Which spending plan do you advise ... based on your preferences
<choice of five>

PART B Which of <five saving motives> are most/least important - 2 rounds

Base vignette

The household consists of two individuals currently 65 years old who have just retired. **[They are in good health and expect to stay so until at least age 70]**

The household has a net of tax lifetime income of **[INCOME]** and their wealth at retirement is **[WEALTH]**. The household owns the house they live in without a mortgage. They don't want to move or sell their house. If one member

3 liquidity alternatives

high wealth: low income [Australia] (Choice set 1)

middle wealth: middle income (Choice set 2)

low wealth: high income [Netherlands] (Choice set 3)

household has to adapt their spending to their income. **[NO IMPLIED ENDORSEMENT]**.

PART A Which spending plan do you advise ... based on your preferences
<choice of five>

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member **Implied endorsement** t

also spend Government regulations require that they withdraw a part of their wealth each year to supplement their

reduction income. **(Choice set 4)**

At retirement and spend, based on their current income and wealth. The following table

shows five different spending plans, together with income and wealth at different ages (if they survive). If the wealth is exhausted then the

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PART A Which spending plan do you advise ... based on your preferences

<choice of five>

PART B Which of <five saving motives> are most/least important - 2 rounds

5 future health expectations

Both healthy to age 70 (Choice sets 1-4)

Both healthy to age 75 (Choice set 5)

One has ADL limitations (Choice set 6)

Widowed and healthy (Choice set 7)

Widowed and ADL limitations (Choice set 8)

Part A: Which spending plan do you advise?

Part A

Below we describe the financial situation of a hypothetical household. This household consists of two individuals currently 65 years old who have just retired. Both are in good health and expect to stay so at least until they reach the age of 70.

Each household has a net of tax lifetime income of **\$36,050 per annum (\$1,387 fortnightly)** and their wealth at retirement is **\$152,775**. The household owns the house they live in, without a mortgage. They don't want to move or sell their house. If one member of the household dies, the survivor will receive less income but also spend less. The reduction in income is roughly equivalent to the reduction in spending.

At retirement the household has to plan how much they expect to save and spend, based on their income and current wealth. The following table shows five different spending plans together with the income and wealth at different ages (if they survive). If their wealth is exhausted then the household has to adapt their spending to their income.

Finally, you can assume that the prices don't change over time.

What plan do you advise the household to choose, based on your own preferences?

| Lifetime income | |
|-----------------|-------------|
| Annual | Fortnightly |
| \$36,050 | \$1,387 |

| | Spending | |
|---------------------------------------|----------|-------------|
| | Annual | Fortnightly |
| <input type="radio"/> Spending Plan 1 | \$42,700 | \$1,642 |
| <input type="radio"/> Spending Plan 2 | \$40,650 | \$1,563 |
| <input type="radio"/> Spending Plan 3 | \$36,050 | \$1,387 |
| <input type="radio"/> Spending Plan 4 | \$31,450 | \$1,210 |
| <input type="radio"/> Spending Plan 5 | \$29,900 | \$1,150 |

| | Wealth | | | |
|---------------------------------------|-----------|-----------|-----------|-----------|
| | At age 65 | At age 75 | At age 85 | At age 95 |
| <input type="radio"/> Spending Plan 1 | \$152,775 | \$86,275 | \$19,775 | \$0 |
| <input type="radio"/> Spending Plan 2 | \$152,775 | \$106,775 | \$60,775 | \$14,775 |
| <input type="radio"/> Spending Plan 3 | \$152,775 | \$152,775 | \$152,775 | \$152,775 |
| <input type="radio"/> Spending Plan 4 | \$152,775 | \$198,775 | \$244,775 | \$290,775 |
| <input type="radio"/> Spending Plan 5 | \$152,775 | \$214,275 | \$275,775 | \$337,275 |

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Part B: Most and least important saving motives, 2 rounds

Part B

You would advise the household to choose the following spending plan.

| | | | | | | |
|-----------------|-----------------|-------------|-----------|-----------|-----------|-----------|
| | Lifetime income | | | | | |
| | Annual | Fortnightly | | | | |
| | \$36,050 | \$1,387 | | | | |
| | Spending | | Wealth | | | |
| | Annual | Fortnightly | At age 65 | At age 75 | At age 85 | At age 95 |
| Spending Plan 3 | \$36,050 | \$1,387 | \$152,775 | \$152,775 | \$152,775 | \$152,775 |

Below you see five possible reasons to choose a specific spending plan.

Please indicate which reason is the **most important** for this household, based on your own preferences, and which saving motive is the **least important**. Then indicate which saving motive is the **2nd most important** and **2nd least important**.

The household...

| MOST important reason to save | 2nd MOST important reason to save | Reasons to save | 2nd LEAST important reason to save | LEAST important reason to save |
|-------------------------------|-----------------------------------|--|------------------------------------|--------------------------------|
| <input type="radio"/> | <input type="radio"/> | wants to ensure that they have enough cash on hand at any time | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> | <input type="radio"/> | wants to ensure that they are able to enjoy life now as well as later. | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> | <input type="radio"/> | wants to ensure that they have enough money to have peace of mind. | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> | <input type="radio"/> | wants to ensure that they will not outlive their wealth. | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> | <input type="radio"/> | wants to ensure that they will be able to finance unforeseen health and aged care expenditures. | <input type="radio"/> | <input type="radio"/> |

Pre-test to select 10 Saving Motives

| Rational | Behavioral | Psychological |
|-------------------------|---------------------------|----------------------|
| Precautionary | Habit formation: wealth | Autonomy |
| Precautionary health | Habit formation: savings | Speculation |
| Life-span risk | Habit formation: spending | Security |
| Intended bequest | Procrastination | Self-esteem |
| Liquidity | Silo 1 (mental account) | Self-gratification |
| Intra-household bequest | Silo 2 (mental account) | Political risk |
| Inter-vivos | | |

19 Savings Motives ‘You want to ensure that

| | |
|----------------------------------|--|
| Precautionary | you will be able to finance any unforeseen expenditures other than health and aged care expenditures |
| Precautionary (health) | You will be able to finance unforeseen health and aged care expenditures |
| Life-span risk | you will not outlive your wealth |
| Intended bequest | you will be able to leave a bequest to your dependents or estate |
| Liquidity | you will have enough cash on hand at any time |
| Intra-household bequest | if you die, your partner is able to maintain his/her standard of living |
| Inter vivos | you will have enough money on hand to help your children finance their house or fund other (unforeseen) events |
| Habit formation: wealth | your total wealth remains constant |
| Habit formation: savings | your ‘monthly savings’ remains constant over time |
| Habit formation: spending | Your spending level remains constant over time |

19 Savings Motives ‘You want to ensure that

| | |
|---------------------------------|---|
| Procrastination | you stick to what you are used to because you tend to delay making decisions |
| Silo (mental accounts) 1 | you will have sufficient savings to cover unforeseen expenses and intend to leave any unused savings as a bequest to dependents |
| Silo (mental accounts) 2 | you will have savings in one account to leave a bequest to dependents and another account to cover unforeseen expenses |
| Autonomy | you remain financially independent |
| Speculation | your wealth continues to increase |
| Security | you have enough money to have peace of mind |
| Self-esteem | you have enough money to feel that you have been successful in life |
| Self-gratification | you are able to enjoy life now as well as later |
| Political risk | you are protected against a change in the superannuation /pension rules |

Reduced from 19 to 10 using 2 rounds of best/worst
– samples of 100 Australians/100 Dutch

| Rational | Behavioral | Psychological |
|-------------------------|--------------------------------------|----------------------|
| Precautionary | Habit formation: wealth | Autonomy |
| Precautionary health | Habit formation: savings | Speculation |
| Life-span risk | Habit formation: spending | Security |
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| Inter-vivos | | |

Descriptive statistics

Advised spending patterns

- Impact of **benefit design** on spending in retirement:
 - Spending pattern more conservative for 'Flexible drawdown' than 'Annuitization'
- Impact of **expected health shock**:
 - Spending patterns more conservative if expect deterioration in health (eg, limitation in **Activities of Daily Living**) later in life
- Impact of **country**:
 - Spending patterns of Australians more conservative than Dutch for all 3 benefit designs and expected health shocks

Benefit design and ranking of saving motives

| | Flexible drawdown | | | | Annuitization | |
|-------------------------------|---------------------------|-----|--------------------------------|-----|---------------------------|-----|
| | High Wealth Low income | | Middle wealth Middle income | | Low wealth High income | |
| | NETH | AUS | NETH | AUS | NETH | AUS |
| Precautionary | 6 | 5 | 6 | 5 | 6 | 5 |
| Precautionary (health) | 4 | 4 | 4 | 4 | 4 | 4 |
| Life-span risk | 9 | 7 | 10 | 8 | 10 | 8 |
| (Intended) bequest | 10 | 10 | 9 | 10 | 9 | 10 |
| Liquidity | 2 | 8 | 2 | 7 | 2 | 7 |
| Intra-h/hold bequest | 5 | 6 | 5 | 6 | 5 | 6 |
| Autonomy | 3 | 2 | 3 | 2 | 3 | 2 |
| Security | 7 | 3 | 7 | 3 | 7 | 3 |
| Self-gratification | 1 | 1 | 1 | 1 | 1 | 1 |
| Political risk | 8 | 9 | 8 | 9 | 8 | 9 |

Benefit design and ranking of saving motives

| | Flexible drawdown | | | | Annuitization | |
|-------------------------------|---------------------------|-----|--------------------------------|-----|---------------------------|-----|
| | High Wealth Low income | | Middle wealth Middle income | | Low wealth High income | |
| | NETH | AUS | NETH | AUS | NETH | AUS |
| Precautionary | 6 | 5 | 6 | 5 | 6 | 5 |
| Precautionary (health) | 4 | 4 | 4 | 4 | 4 | 4 |
| Life-span risk | 9 | 7 | 10 | 8 | 10 | 8 |
| (Intended) bequest | 10 | 10 | 9 | 10 | 9 | 10 |
| Liquidity | 2 | 8 | 2 | 7 | 2 | 7 |
| Intra-h/hold bequest | 5 | 6 | 5 | 6 | 5 | 6 |
| Autonomy | 3 | 2 | 3 | 2 | 3 | 2 |
| Security | 7 | 3 | 7 | 3 | 7 | 3 |
| Self-gratification | 1 | 1 | 1 | 1 | 1 | 1 |
| Political risk | 8 | 9 | 8 | 9 | 8 | 9 |

Expected health status and ranking of saving motives

| [Flexible/high wealth treatment] | Both healthy | | One healthy 1 x ADL | | One healthy 1 x deceased | | One ADL 1 x deceased | |
|----------------------------------|--------------|-----|------------------------|-----|-----------------------------|-----|----------------------------|-----|
| | NETH | AUS | NETH | AUS | NETH | AUS | NETH | AUS |
| Precautionary | 6 | 6 | 5 | 5 | 6 | 6 | 6 | 6 |
| Precautionary (health) | 5 | 4 | 1 | 1 | 5 | 5 | 1 | 1 |
| Life-span risk | 9 | 7 | 9 | 8 | 9 | 8 | 9 | 7 |
| (Intended) bequest | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Liquidity | 3 | 8 | 3 | 7 | 2 | 7 | 4 | 8 |
| Intra-h/hold bequest | 4 | 5 | 6 | 6 | 3 | 1 | 2 | 4 |
| Autonomy | 2 | 3 | 4 | 4 | 4 | 4 | 5 | 5 |
| Security | 7 | 2 | 7 | 3 | 7 | 3 | 7 | 3 |
| Self-gratification | 1 | 1 | 2 | 2 | 1 | 2 | 3 | 2 |
| Political risk | 8 | 9 | 8 | 9 | 8 | 9 | 8 | 9 |

Expected health status and ranking of saving motives

| [Flexible/high wealth treatment] | Both healthy | | One healthy 1 x ADL | | One healthy 1 x deceased | | One ADL 1 x deceased | |
|----------------------------------|--------------|-----|------------------------|-----|-----------------------------|-----|----------------------------|-----|
| | NETH | AUS | NETH | AUS | NETH | AUS | NETH | AUS |
| Precautionary | 6 | 6 | 5 | 5 | 6 | 6 | 6 | 6 |
| Precautionary (health) | 5 | 4 | 1 | 1 | 5 | 5 | 1 | 1 |
| Life-span risk | 9 | 7 | 9 | 8 | 9 | 8 | 9 | 7 |
| (Intended) bequest | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Liquidity | 3 | 8 | 3 | 7 | 2 | 7 | 4 | 8 |
| Intra-h/hold bequest | 4 | 5 | 6 | 6 | 3 | 1 | 2 | 4 |
| Autonomy | 2 | 3 | 4 | 4 | 4 | 4 | 5 | 5 |
| Security | 7 | 2 | 7 | 3 | 7 | 3 | 7 | 3 |
| Self-gratification | 1 | 1 | 2 | 2 | 1 | 2 | 3 | 2 |
| Political risk | 8 | 9 | 8 | 9 | 8 | 9 | 8 | 9 |

Model and estimation

Model

Estimate a Random Effects Ordered Probit Model

$$U^{m,*}_{i,t} = U^{m,*}_{i,t}(X_i, S_i, A_{i,t}, u_i^m)$$

The importance (ranking) of a saving motive is determined by:

- (X_i) - a set of control variables representing observable characteristics of the respondent
- (S_i) - a dummy variable: advised spending pattern preferred by the respondent in treatment category t
- $(A_{i,t})$ - a set of nuisance parameters
- (u_t) - an individual specific term to capture unobserved individual characteristics

Impact of benefit design, health expectations, personal characteristics and country on ranking of saving motives

| Precautionary | Precautionary (Health) | Life Span Risk | Intended Bequest | Liquidity |
|--|------------------------|----------------|-------------------|------------------|
| Benefit design: | All design(+) | | Annuitization(+) | |
| Expectation of future deterioration in health (1 ADL/1 dead) - annuity: | | | | |
| Positive | Positive | Negative | Positive | |
| Personal characteristics: | | | | |
| Ret planning(-) | Male(-) | Consc(-) | Male(+) | Religious(+) |
| Fin capability(+) | Partner(-) | | Children(+) | Ret planning(-) |
| Risk tolerant(-) | Religious(+) | | Ret planning(-) | Future orient(-) |
| Future orient(+) | Fin Capability(+) | | Fin capability(-) | |
| Conscientious(+) | Risk tolerant(-) | | Conscienious(-) | |
| | Fin self-control(-) | | | |
| | Future orient(+) | | | |
| Country: | | | | |
| Netherlands | Netherlands | Australia | Australia | Netherlands |

Impact of benefit design, health expectations and personal characteristics and country on ranking of saving motives

| Intra H/hold Bequest | Autonomy | Security | Self-Gratification | Political Risk |
|--|------------------|-----------------|--------------------|---------------------|
| Benefit design: | | | All design(-) | |
| Expectation of future deterioration in health (1 ADL/1 dead) - annuity: | | | | |
| Positive | Negative | Negative | Negative | Negative |
| Personal characteristics: | | | | |
| Male(+) | Risk tolerant(-) | Born country(-) | High income(+) | High income(-) |
| Partner(+) | | | Homeowner(+) | Homeowner(-) |
| Pension Know(-) | | | Religious(-) | Fin capability(-) |
| Fin self control(+) | | | Born country(+) | Fin self control(-) |
| | | | Future orient(-) | |
| | | | Conscientious(+) | |
| Country: | | | | |
| Netherlands | | Australia | | Netherlands |

What does the model predict for the importance of saving motives for a 'typical person'?

Predicted probabilities to rank a saving motive as important - for reference persons who save (hold on to their wealth) in retirement

[ref person: male, with partner, 1 child (living at home), average and above income, homeowner, non-religious, born in country, high SLE, retirement plan, financial/pension capability]

| | High wealth (flexible drawdown) Middle spending | | Low wealth (annuitization) Middle spending | |
|-------------------------------|---|------------|--|------------|
| | NETH | AUS | NETH | AUS |
| Precautionary | 50.4 | 43.3 | 52.7 | 45.5 |
| Precautionary (health) | 69.8 | 59.5 | 72.7 | 62.8 |
| Life-span risk | 1.4 | 16.0 | 1.5 | 16.5 |
| (Intended) bequest | 0.4 | 0.7 | 0.4 | 0.7 |
| Liquidity | 63.4 | 28.9 | 64.9 | 30.2 |
| Intra-h/hold bequest | 64.7 | 48.1 | 65.4 | 48.8 |
| Autonomy | 57.8 | 59.3 | 63.1 | 64.6 |
| Security | 12.1 | 50.2 | 11.6 | 49.3 |
| Self-gratification | 82.9 | 82.1 | 76.2 | 75.2 |
| Political risk | 7.4 | 2.0 | 7.8 | 2.1 |

Predicted probabilities to rank a saving motive as important - for reference persons who save (hold on to their wealth) in retirement

[ref person: male, with partner, 1 child (living at home), average and above income, homeowner, non-religious, born in country, high SLE, retirement plan, financial/pension capability]

| | High wealth (flexible drawdown) Middle spending | | Low wealth (annuitization) Middle spending | |
|-------------------------------|---|------------|--|------------|
| | NETH | AUS | NETH | AUS |
| Precautionary | 50.4 | 43.3 | 52.7 | 45.5 |
| Precautionary (health) | 69.8 | 59.5 | 72.7 | 62.8 |
| Life-span risk | 1.4 | 16.0 | 1.5 | 16.5 |
| (Intended) bequest | 0.4 | 0.7 | 0.4 | 0.7 |
| Liquidity | 63.4 | 28.9 | 64.9 | 30.2 |
| Intra-h/hold bequest | 64.7 | 48.1 | 65.4 | 48.8 |
| Autonomy | 57.8 | 59.3 | 63.1 | 64.6 |
| Security | 12.1 | 50.2 | 11.6 | 49.3 |
| Self-gratification | 82.9 | 82.1 | 76.2 | 75.2 |
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Key findings

- Most important reasons to save in retirement (for those who save/hold on to wealth):
 - self-gratification (Australians and Dutch)
 - precautionary health (Australians and Dutch)
 - autonomy, security (Australians)
 - Intra household bequest, liquidity (Dutch)
- Impact of:
 - Benefit design: full annuitization associated with importance of precautionary (health) and (intended bequest) motives
 - Expected decline in future health: associated with importance of precautionary health, intended bequest, intra household bequest
 - Country: persistence

Implications for policy and product design

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- Dutch ‘experimental’ concern about ‘liquidity’ and Australian ‘experimental’ concern about ‘security’ – validate direction of policy reforms
- Spending caution in ‘flexible drawdown’ (vs. ‘full annuitization’) indicates (at least partial) annuitization is valuable to provide spending guidance
- Ranking of saving motives suggests gaps in public/private insurance markets:
 - ‘precautionary health’ motive → role for products/policy to insure/cover long term care financing risks
 - intra household bequests motive → survivor feature in benefit design
- Design policy reform to provide more flexibility (the Netherlands) and some longevity insurance (Australia) will need clear member communication/ assistance to avoid ‘persistence’

Thank you