

Understanding the determining factors of aged care accommodation payment choices

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Background (1)

- Due to population ageing and increased chronic disease prevalence, demand for long term care (LTC) services has been rising in many developed countries.
- Sustainable LTC financing is required to ensure the delivery of appropriate care that meets the preferences of aged care residents and their families.
- Australia has a unique financing approach to LTC capital expenditure:
 - **Refundable accommodation deposit (RAD)**: aged care residents can choose to pay a lump sum to providers and the payment will be returned to the resident on leaving care
 - **Daily accommodation payment (DAP)**: like a rent
 - Any **combination** of RAD and DAP

Background (2)

- Consumer accommodation payment choice determines the trends in RADs.
- In recent years, individual preferences have shifted towards DAP as a payment choice.
- Providers are concerned that their total RAD balances may decline, thereby significantly increase their liquidity risk, as banks are reluctant to lend to providers to cover a large RAD shortfall on a permanent basis.
- To understand why there is such a trend of shifting from RADs to DAPs and to assess if consumers make optimal decisions, a good understanding of what factors drive consumer accommodation payment choices is needed.

Literature (1)

- Few studies: largely descriptive and theoretical hypotheses
- **KPMG survey 2018:** the level of the maximum permissible interest rate (MPIR), expected length of stay, personal financial circumstances, whether the consumer is part of a couple, and the time it takes to sell the family home
- **ACFA 2020 report** (page 91): "If all other things are equal, and consumers can achieve a better return, they may be inclined to invest the lump sum and pay the daily payment out of investment earnings. On the other hand, some residents see daily payments as interest charged on the outstanding lump sum. From this perspective, residents see the MPIR as a punitively high rate of interest... ”

Literature (2)

- Only one empirical study: Bilgrami et al (2021)
- Surveyed 581 informal carers who substantially helped residents make an accommodation payment decision between 2016 and 2020
- The associations between resident, informal carer and provider characteristics with the accommodation payment decision
- Relatively small sample size & unreliable financial data

Research focus

- A systematic examination of a large number of predictors of consumer accommodation payment choice, utilising the linkage between large datasets and novel econometric modelling strategies
- The first to examine the impact of local housing price movement, MPIR, accommodation price, and personal financial circumstances (assets and income) on the choice
- To explore the heterogeneity in the impact
- To consider both non-supported and supported residents
- To derive the relative importance (which factors drive the choice)

Data (1)

- The annual survey of aged care homes (SACH): payment information on all the new and transferred residents between 1 July 2016 to 30 June 2019, information about aged care home characteristics, such as their location and ownership type, but no information on resident's characteristics.
- Resident's characteristics collected by Service Australia: Aged Care Funding Instrument (ACFI) assessment scores, asset, and income recorded on the asset and income test lodged when entering care; no reliable information on accommodation payment choices.
- Merged using the de-identified aged care facility ID and the entry date of the de-identified resident

Data (2)

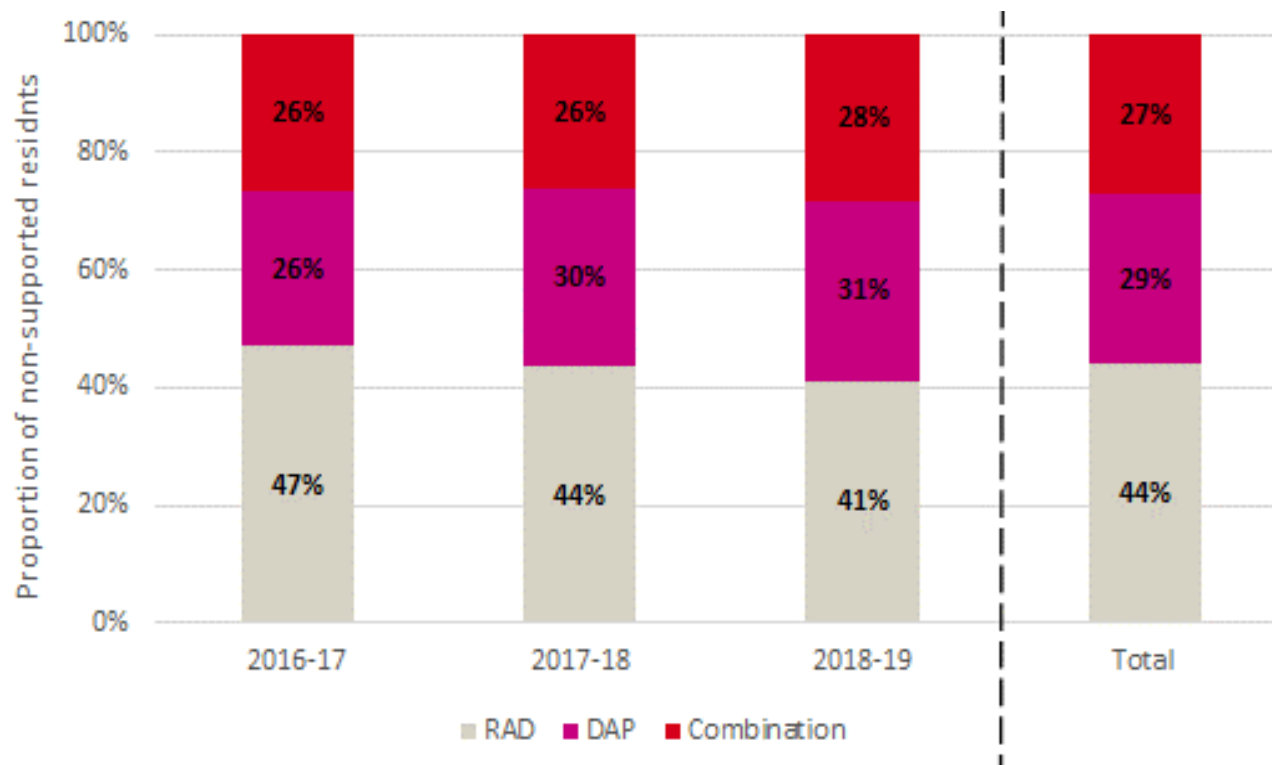
- Data on housing prices from SIRCA merged to the dataset though Local Government Area (postcode)
- **Local housing price movement:** for each resident, the median house price change in their local government area in the 12 months prior to their entry to the aged care home
- 57,508 non-supported residents & 18,129 partially-supported residents (analysed separately given preferences for accommodation payment types may differ)
- Three groups of predictors: (1) local housing price movement, MPIR, & accommodation price; (2) personal financial circumstances (assets and income) & other resident characteristics; and (3) provider characteristics

Econometric modelling

- **Theoretical framework:** The payment choice is two-tiered. Consumers first choose among a RAD, DAP, or a combination of both. If they choose a combination payment, they must then choose the proportion of the RAD in their payment.
- A zero-one-inflated beta (zoib) regression framework was adopted to simultaneously model the probability of choosing RAD, the probability of choosing DAP, and the proportion of RADs within the combination payment.
- **Alternative strategies:** Multinomial logit (IIA assumptions); Fractional logit (not ideal when there are excess zeros and ones)

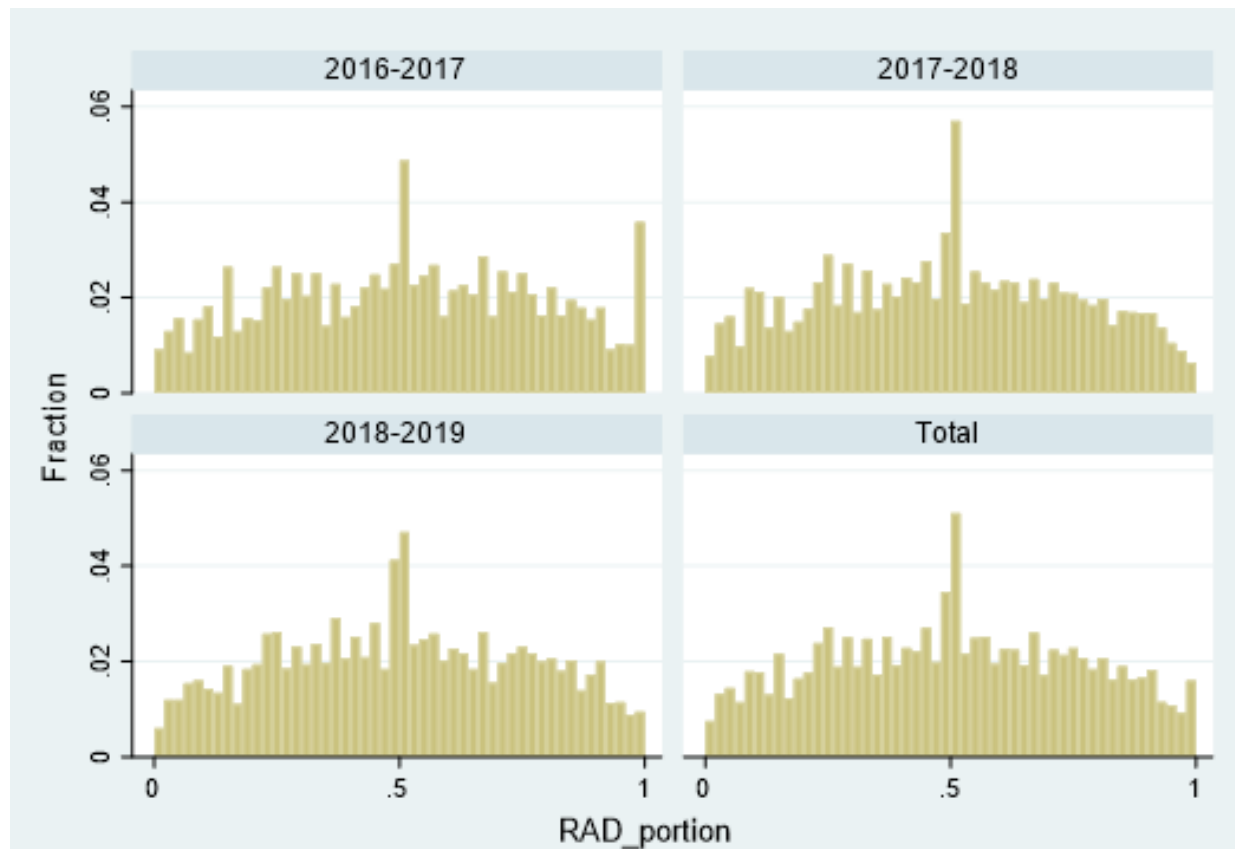
Trends in consumer choice (1)

Non-supported residents' choice of payment



Trends in consumer choice (2)

Non-supported residents: proportion of RAD in the combination



Local housing price movement

- Growth in median housing prices in the 12 months prior to entry is positively associated with the likelihood of choosing a RAD and negatively associated with the likelihood of choosing a DAP
- Assuming most of the residents in the sample were homeowners, on average they were more likely to sell their properties to pay RAD when the local housing price increased in the past year prior to entry
- On average they were more likely to afford the RAD by selling their property in a bullish market (residual effect as the asset amount was controlled)

Accommodation price & the MPIR

- Consumers are more likely to choose a combination payment when faced with a high accommodation price but are also more likely to choose a DAP within that combination payment
- Consumers may find it more difficult to pay a RAD when the accommodation price is high
- Consumers are more likely to choose a RAD as the MPIR increases
- When the MPIR increases, the cost of DAPs would increase, making them less affordable for consumers

Assets and income

- The more assets reported by the consumer, the more likely they will choose a RAD
- Income is also statistically significant but negatively associated with the probability of choosing RAD
- This likely reflects the increased ability for a consumer to pay a DAP as income increases

Length of stay (LOS)

- Should not directly impact the payment choice because that choice is made at the beginning of their stay
- Statistically significant though - a consumer that stayed for a relatively short period was more likely to choose a DAP
- Consumers with a short LOS may have formed **expectations** that their LOS was going to be short

Resident health

- Measured by ACFI scores, including the Activities of Daily Living (ADL); Behavioural (BEH); and Complex Healthcare (CHC)
- The less healthy consumers are when entering residential aged care, the less likely they will choose a RAD
- This reflects the impact of consumer health on choosing a RAD with LOS controlled
- Another proxy of expected LOS (LOS may not perfectly proxy it)

Other resident characteristics

- An older person, or married person, entering residential aged care is more likely to choose a RAD and less likely to choose a DAP
- They are also more likely to choose a greater proportion of RAD within a combination payment
- Male consumers are more likely to choose a DAP

Facility characteristics (1)

- Capturing unobserved factors such as cultural differences in attitudes towards accommodation payment types, differences in financial literacy and access to financial advisors, etc.
- Compared to those who entered facilities in NSW, consumers who entered facilities in all other states except ACT were more likely to use the combination payment with a lower proportion of RAD component
- Consumers who entered facilities in remote areas are more likely to choose a DAP than a RAD. If they do choose a combination payment, the proportion of the RAD component is likely to be lower.

Facility characteristics (2)

- Consumers who entered a not-for-profit or government facility were less likely to choose a RAD and more likely to choose a DAP or combination payment
- Different types of ownership may attract different types of consumers

Heterogeneity in the effects

- Explored many two-way interactions: age, gender, etc.
- A greater accommodation price reduces the likelihood of a consumer choosing a RAD. This effect is stronger for those in government and non-for-profit facilities than those in for-profit ones.
- Growth in house price in the 12 months prior to entry is positively associated with the likelihood of choosing a RAD and has a negative impact on the probability of choosing DAP. This effect is stronger for those in inner region areas than those in major cities.

Partially-supported residents

- The effect of accommodation price on payment choice is smaller for supported residents compared to non-supported ones, likely because the former only pays a portion of the price.
- The housing price movement has no impact on payment choice for supported residents who are unlikely to be homeowners in the first place

Relative impact of choice predictors on choosing a RAD

Choice predictor	Scenario	Impact on probability
LOS	one sd increase	2.2%***
ACFI: ADL score	one sd increase	-0.5%
ACFI: BEH score	one sd increase	0.2%
ACFI: CHC score	one sd increase	-0.8%**
Asset amount on entry	one sd increase	14.0%***
Income	one sd increase	-1.2%***
Agree a accommodation price	one sd increase	-4.5%***
Median housing price change	one sd increase	1.5%***
MPIR	one sd increase	1.1%*
Age at admission	one sd increase	1.0%***
Male	compared to female	-0.5%***
Currently married	compared to not married	2.3%***
State: VIC	compared to NSW	-5.3%***
State: QLD	compared to NSW	-15.2%***
State: SA	compared to NSW	-12.4%***
State: WA	compared to NSW	-20.6%***
State: TAS	compared to NSW	-1.2%
State: ACT	compared to NSW	-1.2%
State: NT	compared to NSW	-13.1%
Remoteness: Inner regional	compared to major cities	-7.0%***
Remoteness: Outer regional	compared to major cities	-11.4%***
Remoteness: Remote	compared to major cities	17.7%
Ownership: Non for profit	compared to "for profit"	-8.1%***
Ownership: Government	compared to "for profit"	-7.0%***

Relative impact of choice predictors on choosing a DAP

Choice predictor	Scenario	Impact on probability
LOS	one sd increase	-7.5%***
ACFI: ADL score	one sd increase	2.5%***
ACFI: BEH score	one sd increase	1.1%***
ACFI: CHC score	one sd increase	-0.4%
Asset amount on entry	one sd increase	-4.5%***
Income	one sd increase	1.6%
Agree a accommodation price	one sd increase	-7.5%***
Median housing price change	one sd increase	-1.0%**
MPIR	one sd increase	-3.0%***
Age at admission	one sd increase	-3.4%***
Male	compared to female	3.0%***
Currently married	compared to not married	-1.5%*
State: VIC	compared to NSW	-5.9%***
State: QLD	compared to NSW	-13.7%***
State: SA	compared to NSW	-17.5%***
State: WA	compared to NSW	-22.1%***
State: TAS	compared to NSW	-7.0%***
State: ACT	compared to NSW	-3.7%
State: NT	compared to NSW	-13.8%
Remoteness: Inner regional	compared to major cities	-5.9%***
Remoteness: Outer regional	compared to major cities	-4.1%**
Remoteness: Remote	compared to major cities	22.9%**
Ownership: Non for profit	compared to "for profit"	5.6%***
Ownership: Government	compared to "for profit"	9.0%***

Relative impact of choice predictors on choosing a RAD within a combination payment

Choice predictor	Scenario	Impact on probability
LOS	one sd increase	2.8%***
ACFI: ADL score	one sd increase	-0.7%**
ACFI: BEH score	one sd increase	0.04%
ACFI: CHC score	one sd increase	-0.1%
Asset amount on entry	one sd increase	6.4%***
Income	one sd increase	-1.2%
Agree accommodation price	one sd increase	-2.8%***
Median housing price change	one sd increase	0.6%*
MPIR	one sd increase	3.1%***
Age at admission	one sd increase	0.2%
Male	compared to female	-0.3%
Currently married	compared to not married	0.3%
State: VIC	compared to NSW	-4.8%***
State: QLD	compared to NSW	-2.2%**
State: SA	compared to NSW	0.0%
State: WA	compared to NSW	-8.1%***
State: TAS	compared to NSW	-0.5%
State: ACT	compared to NSW	2.2%
State: NT	compared to NSW	-6.3%
Remoteness: Inner regional	compared to major cities	0.4%
Remoteness: Outer regional	compared to major cities	-3.9%***
Remoteness: Remote	compared to major cities	-6.7%*
Ownership: Non for profit	compared to "for profit"	4.1%***
Ownership: Government	compared to "for profit"	3.2%*

Discussions

- Asset amount on entry is the main driving factor of the payment choice
- A resident's financial situation constrains ability to choose RAD or part-RAD payments, by influencing access to funds required when entering care
- Residents do respond to housing price movement, MPIR, and accommodation price (currently linear additive functional form)
- Further investigations needed to test the “investment decision” theory (ACFA 2020 report): the spread between “investment return rate” and MPIR

Discussions

- Strong provider impacts: some providers may manipulate accommodation payment choices towards RADs - evident in another study of ours using provider survey and provider focus groups
- Provider interests may inhibit an optimum accommodation payment being chosen in the resident's best interests
- Measures to ensure providers remain neutral in decision-making. Tangential policies may be needed to alleviate financial pressures /uncertainty related to providers' capital financing and care funding environment.

Thank you!

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Results: trends in consumer choice

Partially-supported residents' choice of payment

