The CIE

Demand for housing in Victoria

Stated preference research

Prepared for
Infrastructure Victoria

21 December 2022

Key findings

Survey of

6072

Victorian households

People prefer certain housing features

- Dwelling structure type is the attribute with the biggest influence on housing choice, on average. Most households have a strong preference for detached houses over apartments, particularly when they are looking to buy a home.

- Location, the number of bedrooms, and the number of car spaces also factor into choice.

- Most households need to compromise on some attributes to afford a home. As a result, there is strong demand for detached houses in growth areas.

People make different choices when prices change

- Demand for homes in growth areas would decrease by an estimated 17 per cent under a scenario reducing the prices of townhouses and apartments in established areas by 10 per cent and increasing the prices of homes in growth areas by 10 per cent.

- When townhouses and apartments in established areas get cheaper, households substitute away from growth-area homes to townhouses or three-bedroom apartments in inner and middle suburbs of Melbourne. They do not substitute to apartments with fewer than three bedrooms.

- When homes in growth areas get more expensive, households substitute to houses in regional areas and outer suburbs, to large apartments in inner suburbs, or to a house with fewer bedrooms.

Some people are more likely to make different choices

- The households most likely to substitute demand away from growth area housing:
  - have characteristics associated with:
    - shorter tenure, such as being aged under 30 years, currently renting, having lived in Australia for five years or fewer, or being a group household
    - willingness to live in smaller dwellings, such as currently living in an apartment or being a single-person household, or
    - lower financial means, such as being a single parent, having no full-time employees in the household, or having income of less than $80 000 per year, and
  - have a stronger preference for being able to easily walk to most destinations and for maximising savings from grants and tax incentives.

Contents

1   Introduction

Preamble

Infrastructure Victoria has undertaken a program of research to investigate the drivers of greenfield housing demand in metropolitan Melbourne and some parts of regional Victoria. The primary research question is:

> What would be the necessary pre-conditions for a proportion of households living in new suburbs to have chosen a different residential location?

To answer this question, Infrastructure Victoria's research has examined issues that influence housing location, dwelling preferences and choices for those already living in or looking to move to greenfield areas (box 1.1). Infrastructure Victoria commissioned qualitative and quantitative research to explore the housing preferences and trade-offs people make in their housing decisions, to ascertain whether alternative housing products in established areas could be adequate substitutes for some households.

1.1   Greenfield areas
Greenfield land refers to land rezoned for urban development, primarily from farming land, either in metropolitan Melbourne or in the outer edges of regional towns and cities in Victoria. Greenfield housing across Victoria is typically characterised by low density, detached and often large housing in new suburbs with housing generally less than ten years old.

The research conducted by the Centre for International Economics (CIE) presented in this report is one of the studies commissioned by Infrastructure Victoria as part of the research program. It involved conducting an online survey of a sample of over 6000 Victorian households to quantify the drivers of greenfield housing demand and the degree to which alternative housing products could be adequate substitutes for some households. This report summarises the study method and results. Further detail is available in a separate technical report.[1]

This study is the first major piece of stated preference research into demand for housing in Victoria since the trade-off survey conducted as part of *The Housing We'd Choose*

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[1]   CIE 2022. Demand for housing. Technical Report. Prepared for Infrastructure Victoria. December.

research conducted by the Grattan Institute in 2011.[2] It refreshes the findings of the Grattan Institute survey, but also provides new insights by expanding the sample frame to include Geelong and Ballarat and by using a much larger sample size to examine housing demand across a greater number of spatial areas within Melbourne.[3]

Objective

Infrastructure Victoria's wider research program on housing in greenfield areas has the following objectives:

- Identify the most important dwelling, locational or community attributes to households making their residential location decisions, particularly those households who choose to live in Victoria's greenfield locations, and the trade-off decisions they make.

- Test whether these housing preferences could be met in other, non-greenfield locations.

- Elevate the voice of households who currently feel they have limited housing choice, and can only meet their housing preferences in greenfield locations but would prefer a different location if their housing needs could be met elsewhere.

The role of the quantitative component of the research program in meeting these objectives is to:

- provide further evidence to answer the main research question: *What would be the necessary pre-conditions for a proportion of households living in new suburbs to have chosen a different residential location?*

- measure the relative size of different housing preferences (ranking of attributes) to various household types (e.g. submarket/demographic group) and assign a value to each housing preference

- identify the housing and locational features (attributes/preferences) and price point that most strongly influence household decisions to make trade-offs to move to or remain in established areas, for different consumer groups (e.g. demographic or cultural groups), and

- estimate the size of the population that could potentially shift from a greenfield location to an established area if their housing preferences could be met.

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[2]   Kelly, J.F., Weidmann, B., and Walsh, M., 2011. The Housing We'd Choose, Grattan Institute, Melbourne.

[3]   The Grattan Institute trade-off survey used a sample of 572 households from Sydney and Melbourne.

Research questions

These objectives were met in the present study by addressing three main research questions:

1   To which housing attributes are consumer decisions most sensitive?

2   What are the necessary pre-conditions for a proportion of households living in (or likely to live in) new suburbs to have chosen a different residential location?

3   What are the characteristics of households with a greater propensity to shift their housing decision from greenfield to established locations?

Report structure

This report is structured as follows:

- Chapter 2 summarises the method for the research, including the survey design, survey fieldwork, and models of housing market share

- Chapters 3, 4, and 5 address each of the three research questions above.

2   Method

Survey design

The study used a sophisticated survey technique called a discrete choice experiment. Respondents were asked to imagine they had to leave their current home and choose another home to live in. They were shown 16 choice questions. In each question, they were shown four homes described by several housing features, location, and price or weekly rent. They were asked to indicate which home they would choose if those four homes were the only homes available. Their choices revealed which housing and location features are most important and how housing decisions are affected by changes in features and prices. An example of a choice question is shown in figure 2.1.

A rigorous process went into designing the survey between April and August 2022. Housing choices are influenced by many attributes of dwellings and neighbourhoods. The choice questions included in the survey needed to focus on a limited set of attributes to keep the survey manageable for respondents. An extensive literature review, several workshops with Infrastructure Victoria, a workshop with external stakeholders, and qualitative focus group research conducted for Infrastructure Victoria by Wallis Social Research were used to inform a selection of attributes that:

- cover the most important attributes to decision makers
- cover the attributes that would be influenced by the government policy interventions most likely to be evaluated
- cover combinations of attributes that were difficult to observe in the hedonic price study conducted by Infrastructure Victoria, and
- are expressed in terms that are meaningful to respondents.

Each housing option was described by a combination of the attributes listed in table 2.2.

Each respondent indicated whether they would look to:

- buy a home (in which case they were shown 'For sale' options)
- rent a home (in which case they were shown 'For rent' options), or
- rent a home, but would buy if a home I liked was affordable (in which case they were shown both 'For sale' and 'For rent' options)

2.1 Example of a choice question

Source: CIE

Households have a borrowing (or rent affordability) constraint outside of which they cannot realistically consider housing options. The qualitative research indicated that many households would also never consider housing options with fewer bedrooms than they need. To minimise the number of irrelevant options shown to respondents, the choice questions did not include options that were:

- clearly outside a price/rent constraint nominated by the respondent, informed, for respondents looking to buy, by a borrowing power calculation built into the online survey,[4] or

- had fewer bedrooms than a minimum level nominated by the respondent.

The prices for housing options were varied by up to ±20 per cent around a current market price estimated using regression analysis on property market transaction data purchased by Infrastructure Victoria from PropTrack. The ±20 per cent range was judged to strike an appropriate balance between maximising the range of price shocks that could be analysed using the choice model and maintaining plausibility of options to respondents.

Photographs were included in housing options tested in in-depth interviews and a subsample of the pilot survey. This testing indicated the design style and aesthetics of the homes in the selected photographs were influencing choice. The photographs were removed from housing options for the main survey fieldwork to ensure the impacts of the study housing attributes could be isolated from these other considerations.

2.2   Each home option was a combination of features

Attribute	Levels	Comments
Tenure	For sale For rent	Most respondents selected into seeing only one of these, but some respondents saw both.
Structure type	House Townhouse/Villa/Unit Apartment in 2-3 storey complex Apartment in 4-10 storey complex Apartment in 11+ storey complex	House options also showed land size: ■ 200 m² for inner zones ■ 400 m² for middle zones ■ 600 m² for outer zones ■ 400 m² for growth zones ■ 600 m² for established regional zones ■ 500 m² for growth regional zones
Bedrooms	1 2 3 4 5	Cursor hover text: "The number of bedrooms. Living areas are also larger in homes with more bedrooms." Each respondent saw three different levels across the options offered to them: 1-3, 2-4, or 3-5 depending on response to prerequisite question. The lowest level was not offered with House. The highest level was not offered with Apartment.

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4   The borrowing power calculation was based on averages of the results from online calculators provided by Commonwealth Bank, Aussie Home Loans, ANZ Bank, and Westpac.

Attribute	Levels	Comments
Location	Inner metro Inner South East Middle West Outer West Growth West Middle North Outer North Growth North Middle East Outer East Middle South Outer South Growth South Established Geelong Growth Geelong Established Ballarat Growth Ballarat	Each location was described using a map, a list of key employment destinations within the zone, and distance to CBD. The only Melbourne zones offered to respondents in Geelong and Ballarat were Growth West and Outer West.
Price	Price model estimate – 20% Price model estimate – 12% Price model estimate – 4% Price model estimate + 4% Price model estimate + 12% Price model estimate + 20%	The price model was estimated on PropTrack 2021 sales data purchased by Infrastructure Victoria. Rent levels were calculated using average rents by LGA by dwelling type published in the Rental Report by the Department of Families, Fairness and Housing. Mortgage payments were shown for respondents looking to buy, calculated using an interest rate of 5 per cent and the respondent's estimated net assets.
Car parking spaces	0 1 2	Defined as "The number of spaces of reserved, on-site parking (e.g. garage, carport, reserved space in lot). Additional parking may be available via permits for on street parking or in nearby lots." '0' was not offered for houses '2' was not offered for townhouses or apartments
Office	0 1	Cursor hover text: "The number of study nooks in the home. An area smaller than a bedroom."

Source: CIE

The spatial zones used to define the locations offered in the housing options (illustrated on a single map in figure 2.3) were constructed by merging:

- the corridors used by Plan Melbourne
- Department of Environment, Land, Water and Planning (DELWP) categorisation of Inner, Middle, Outer and Growth areas,[5] and
- Melbourne's urban growth boundary.

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5   Category used for descriptive purposes and is primarily based on the location of the LGA the SA2 is within. Growth category relates to SA2 areas that contain recent greenfield development identified by the Urban Development Program.

Areas of environmental significance were removed, such as the Yarra Valley, Dandenong Ranges, most of the Mornington Peninsula and the Bellarine Peninsula.

The questionnaire recorded the location of each respondent's current home, places of employment, and other important destinations, so that the analysis of choice could consider the distance of each housing option from these locations.

2.3   CIE spatial zones (map)
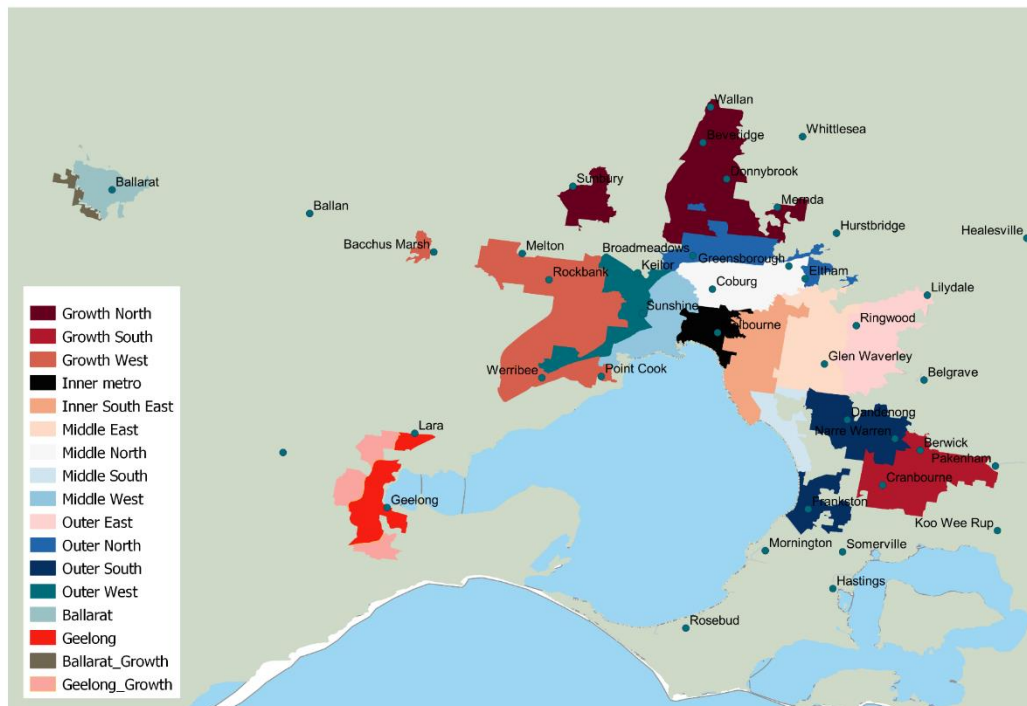
Data source: CIE and Infrastructure Victoria

To help isolate the impacts on housing choice of the attributes shown in the choice questions, respondents were instructed to "Please assume all homes are in the same condition, with similar finish quality, air conditioning/heating, double-glazed windows, built-in wardrobes, and energy rating."

The survey instrument underwent a thorough process of review and testing prior to implementation. It was reviewed by internal and external stakeholders, tested in in-depth interviews conducted by Woolcott Research and Engagement with 14 participants sampled from households in established and growth areas of Melbourne, and tested again in a pilot phase of survey fieldwork with 607 households. Aspects of the survey design were refined throughout this process.

Survey fieldwork

The survey was conducted online during August to October 2022 with a large sample of 6072 households recruited through Pureprofile's online panel and partner panels (table 2.4).

2.4 Survey sample by region and wave of fieldwork

	Wave 1	Wave 2	Wave 3	Grand Total
	Respondents	Respondents	Respondents	Respondents
Ballarat	26	154	122	302
Geelong	39	185	172	396
Greater Melbourne	542	886	3946	5374
Grand Total	**607**	**1225**	**4240**	**6072**

Source: CIE

The sample was close to being representative of households across Melbourne, Geelong, and Ballarat. We surveyed a diverse mix of households, with 22 per cent of respondents born overseas and 18 per cent speaking a language other than English at home. However, the latter group were under-represented relative to the population, which was expected since the survey was conducted in English. Sampling weights were constructed using dwelling structure, tenure type, household income and language spoken at home to ensure the analysis can be generalised to the population of households in Melbourne, Geelong and Ballarat (table 2.5).

2.5 Key household and dwelling characteristics

	Sample	Sample	Weighted sample	Population (households)[a]
	No.	per cent	per cent	per cent
Dwelling structure				
Apartment in complex with 11 storeys or more	115	1.9	3.9	3.9
Apartment in complex with between 4 and 10 storeys	199	3.3	4.0	4.0
Apartment in complex with up to 3 storeys	430	7.1	8.9	8.9
Detached house	3947	65.0	66.4	66.4
Townhouse, terrace, villa, unit or other semi-detached	1381	22.7	16.8	16.8
Tenure type				
None of the above	18	0.3	1.0	1.0
Occupied rent-free	28	0.5	0.8	0.8
Owned outright	1575	25.9	30.0	30.0
Owned with a mortgage	2435	40.1	37.3	37.3
Rented	2016	33.2	30.9	30.9
Household income				
Less than $41,600 per year (less than $800 per week)	690	12.4	20.3	20.3
$41,600 - $77,999 per year ($800 - $1,499 per week)	1076	19.3	20.1	20.1
$78,000 - $103,999 per year ($1,500 - $1,999 per week)	1029	18.4	12.1	12.1
$104,000 - $155,999 per year ($2,000 - $2,999 per week)	1378	24.7	20.7	20.7

	Sample	Sample	Weighted sample	Population (households)[a]
	No.	per cent	per cent	per cent
$156,000 - $207,999 per year ($3,000 - $3,999 per week)	812	14.6	11.8	11.8
$208,000 - $259,999 per year ($4,000 - $4,999 per week)	340	6.1	7.4	7.4
$260,000 per year or more ($5,000 per week or more)	254	4.6	7.5	7.5
Do not wish to answer	396			0.0
(blank)	97			0.0
Language spoken at home				
English only	4970	81.9	64.0	64.0
Language other than English	1102	18.1	36.0	36.0

[a] Australian Bureau of Statistics Census 2021 TableBuilder, sampling area postcodes by STRD, TEND, HIND and LANP

Note: Sample percentages for household income are based on the subset of respondents who were willing to answer the question

Source: CIE

Modelling housing market share

Models of household choice

To measure the importance of attributes and to predict housing choices, statistical models were estimated on the choices observed in the survey. These models were needed to make inferences about the strength of the relationships between housing attributes and choices and to be transparent about the certainty with which those inferences can be generalised to all households in Melbourne, Geelong, and Ballarat.

A range of models and variable specifications were tested. The best-performing type of model, with output most suited to answering the key research questions, was judged to be a conditional latent-class multinomial logit model. Multinomial logit models estimate the contribution, $\boldsymbol{\beta}$, of each attribute, X, to respondent utility, $U = \boldsymbol{\beta X}$. Utility is a measure of perceived benefit, such that the probability, P, that a housing option, j, is chosen from a set of n housing options by respondent i is equal to:

$$P_{ij} = \frac{e^{U_{ij}}}{\sum_{j=1}^{n} e^{U_{ij}}}$$

The latent-class variant of the multinomial logit model estimates how the taste parameters, β, vary across respondents. We estimated the model on seven separate subsets of the data set shown in table 2.6. These subsets aligned with key variations in the survey designs used for different respondents, including intended tenure (buying or renting) and regional locations. Since a major focus of this study is on the preferences of households that have already chosen a greenfield product, a separate model was estimated on responses from those households to maximise our ability to capture differences in preferences between this group and the rest of the sample.

2.6   Separate models estimated on survey data

Current tenure	Tenure type for next home		
	Buy	Rent	Rent, or buy…
Melbourne (established), Owner	Model 1 (40%)		
Melbourne (greenfield), Owner	Model 2 (6%)	Model 4 (20%)	Model 5 (16%)
Melbourne, Renter	Model 3 (7%)		
Geelong		Model 6 (7%)	
Ballarat		Model 7 (5%)	

Note: Figures in parentheses are the unweighted sample falling into each category
Source: CIE

The estimation results for Model 1 (owners in established Melbourne) are provided in table 2.7 as an example. Further estimation results are available in the separate technical report. While it is difficult to draw many conclusions directly from the estimation output, there are a few aspects worth noting.

First, the Z values are relatively high. A value of around 2 indicates statistical difference from zero at the 95 per cent confidence level. The higher the Z value, the tighter the statistical confidence interval around the estimate. The statistical significance of the estimated impact of housing attributes on choice shows that respondents considered the options carefully and provides confidence in the accuracy of predictions.

Second, the estimated coefficients have the expected sign. For example, the coefficients on price and distances to destinations are negative, indicating utility and choice probability decrease with these attributes. The coefficients on 'house' (a dummy variable), additional bedrooms, and car spaces are positive, indicating utility and choice probability increase with these attributes.

Third, the research identified two distinct types or 'classes' of preferences. Class 1 preferences are structure-focused and Class 2 preferences are location-focused. The model estimates where each respondent is located on a spectrum between the two classes based on the degree to which they agreed with a set of 12 attitudinal statements. The class probability model shows that respondents have a higher weight on Class 1 (structure-focused) preferences if they more strongly agree with:

- My home choice must save on stamp duty and maximise government grants and other tax incentives
- I would always choose a house or townhouse with land, over an apartment, because it will be a better investment
- Newer suburbs are great places to bring up children

Respondents have a higher weight on Class 2 (location-focused) preferences if they more strongly agree with:

- I must live close to restaurants, cafes and cultural facilities
- I must live in the location I want, even if my dwelling is not ideal

2.7   Estimation results for Model 1

	Class 1		Class 2	
	Coef.	z	Coef.	z
Random parameters				
Established Ballarat	1.2174	12.8	-0.4335	-3.2
Established Geelong	0.9035	9.7	-0.7593	-7.1
Growth Ballarat	1.2220	13.8	-0.1947	-1.4
Growth Geelong	0.9695	10.4	-1.0650	-9.4
Growth West	0.8132	11.6	-1.8851	-20.2
Middle East	0.4929	6.5	-0.0425	-0.6
Middle South	0.2690	3.3	-0.1249	-1.6
Middle North	0.2753	3.5	-0.4558	-5.9
Growth South	0.7517	9.9	-1.5387	-20.2
Outer South	0.7038	9.1	-1.2496	-15.9
Middle West	0.3307	3.5	-0.4921	-5.5
Outer East	0.7150	9.6	-0.5806	-7.7
Inner South East	0.1714	1.8	0.3461	4.4
Outer West	0.5181	7.0	-2.2369	-27.9
Growth North	0.7019	9.5	-1.7736	-21.2
Outer North	0.4854	6.6	-1.4107	-17.9
Travel time to current home (min)	-0.0084	-18.9	-0.0245	-31.7
House	1.4556	12.9	0.5618	5.5
Townhouse	0.6657	5.8	0.5842	5.8
Apartment 2-3 storey	0.3970	2.9	0.1905	1.6
Apartment 4-10 storey	0.0419	0.3	0.2387	1.9
Fixed parameters				
Price in excess of minimum expected price ($'000s)	-0.0007	-20.9		
One additional bedroom (above minimum bedrooms)	0.4805	27.4		
Two additional bedrooms (above minimum bedrooms)	0.6720	31.8		
One car space	0.4793	23.2		
Two car spaces	0.5708	31.6		
Office nook	0.0426	3.3		
Travel time to place of work for earner #1 (min)	-0.0003	-0.4		
Travel time to place of work for earner #2 (min)	-0.0023	-2.4		
Sum of travel times to respondent-specified destinations (min)	-0.0020	-11.0		
Class probability model				
My neighbourhood must have a large community from a similar ethnic background to my family's background	-0.0408	-0.8		
My neighbourhood must have lots of households at a similar life stage to mine	0.1066	1.7		

	Class 1		Class 2	
	Coef.	z	Coef.	z
My neighbourhood must have infrastructure (like schools, public transport and shops) already built	-0.0570	-1.0		
My home choice must save on stamp duty and maximise government grants and other tax incentives	0.2630	4.8		
Newer suburbs are great places to bring up children	0.1949	3.4		
I must live close to restaurants, cafes and cultural facilities	-0.2897	-4.6		
I must be able to easily walk to most things	-0.1474	-2.2		
I must live in the location I want, even if my dwelling is not ideal	-0.2428	-4.5		
My home must have a spare bedroom to use as an office and/or guest room	-0.1122	-2.0		
I would always choose a newer home over an older home	-0.0196	-0.4		
I would always choose a house or townhouse with land, over an apartment, because it will be a better investment	0.2495	4.8		
My home must have an energy efficiency rating of at least six stars	0.0146	0.2		
(Constant)	0.7111	1.8		

Note: Dependent variable is utility. Omitted dummies are 'Inner Metro', 'Apartment 11+ storey', 'Zero car spaces'
Source: CIE

Model of market share

A housing market share model was developed to answer the thought experiment: *if every household had to move out of its current home and choose another home in Melbourne, Geelong or Ballarat at current market prices, which home would they choose?* This involved calculating a choice probability for each respondent for each home in the existing stock of around 1.7 million homes in Melbourne, Geelong and Ballarat.

Homes were categorised by tenure type, location, structure, and bedrooms (taken from the 2021 Census), as well as car spaces (estimated using PropTrack home sales data purchased by Infrastructure Victoria). Overall, there were 1004 unique combinations of these attributes. In practical modelling terms, the choice set was defined as 1004 home types, but with each home type weighted by its prevalence in the stock. A current market price was estimated for each home using hedonic price equations estimated on the PropTrack sales data.

The choice probabilities across these homes were calculated for each survey respondent, based on their individual utility function and aggregated using sampling weights to enable generalisation to the population. Housing options outside the viable choice set for each respondent (based on budget constraint, number of bedrooms, and, for respondents in Geelong and Ballarat, location) were assigned a choice probability of zero.

The second and third of the three main research questions for this study were addressed by applying shocks to relative prices in this market share model and observing the impact on demand for various types of homes (see figure 2.8), with a focus on the impact on demand for homes in growth zones.

2.8   The CIE housing market share model

Data source: CIE

Table 2.9 lists the top 20 combinations of spatial zone and structure type by estimated market share at current prices. Three of the top four are houses in growth areas of Melbourne. This confirms the issue with which Infrastructure Victoria's research is grappling – that under current market conditions a large share of future housing supply will be demanded in growth areas.

2.9   There is strong demand for houses in growth areas

Location	Structure	Market share
		per cent
Growth West	House	12.0
Outer South	House	8.9
Growth South	House	6.8
Growth North	House	6.6
Established Geelong	House	5.7
Outer East	House	5.0
Established Ballarat	House	4.9
Inner South East	Apartment	4.8
Outer West	House	4.7
Inner Metro	Apartment	4.3
Outer North	House	3.7
Middle West	Apartment	2.4

| Location	Structure	Market share
		per cent
Outer South	Townhouse	2.4
Middle North	House	2.1
Middle East	House	2.0
Middle North	Apartment	1.8
Middle North	Townhouse	1.6
Growth West	Townhouse	1.6
Growth Geelong	House	1.4
Middle East	Apartment	1.3

Source: CIE market share model

3   The housing attributes households care about

To which housing attributes are consumer decisions most sensitive?

- Dwelling structure type is the attribute with the biggest influence on housing choice. Most households have a strong preference for detached houses over apartments, particularly when they are looking to buy a home.

- Location, the number of bedrooms, and the number of car spaces also factor into housing choice

- Most households need to compromise on some attributes to afford a home. As a result, there is strong demand for detached houses in growth areas.

Dwelling structure type is the most important housing attribute, on average. Consumers generally have a strong preference for detached houses. Location, the number of bedrooms, and the number of car spaces also factor into housing decisions, but tend to be less important than structure type. Chart 3.1 shows the amount of utility households gain from each of these housing attributes, where utility is a measure of benefit, which increases with choice probability (for further detail see page 10).

3.1   Structure type is the most important feature on average
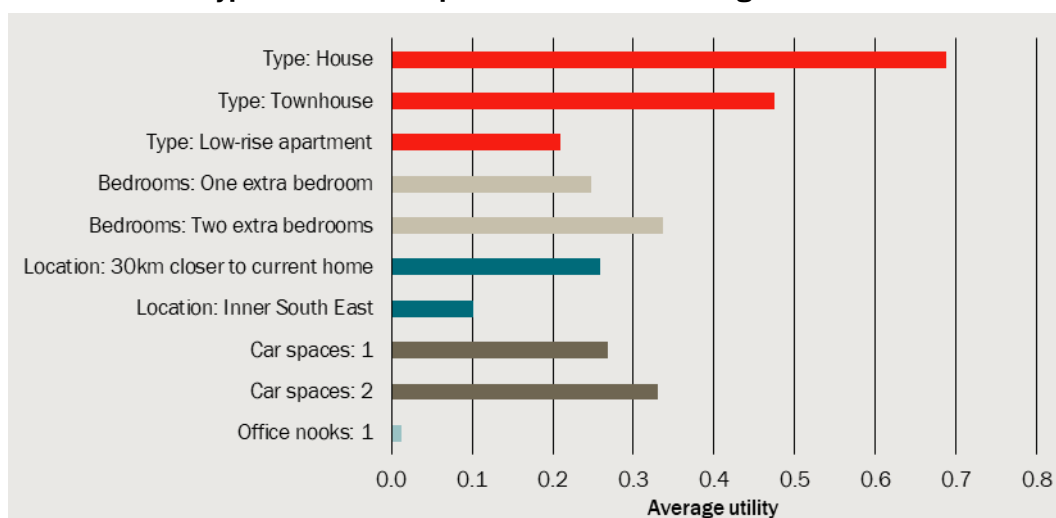
Note: Relative to a hypothetical high-rise apartment in Growth West, minimum number of bedrooms, zero car spaces, zero office nooks.
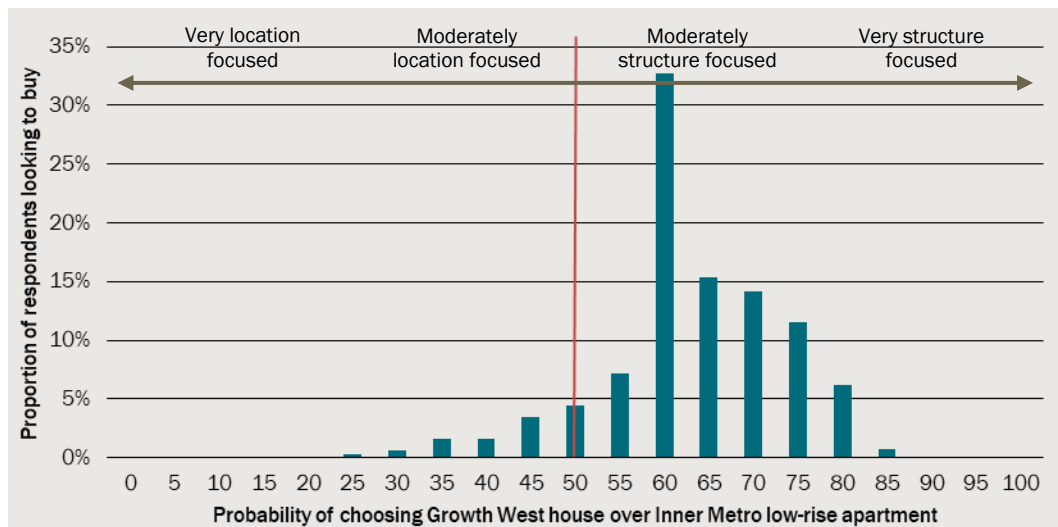Data source: CIE

Many households may wish to combine the best of these features and live in a five-bedroom house in the Inner South East with two car spaces, but their choice is constrained by their financial means. While many households will choose a less-preferred location where they can afford a house, some households have a strong preference for a

location close to destinations in established Melbourne and will choose a less-preferred dwelling structure to afford a home in a better location. Infrastructure Victoria's finding from Census data analysis that households tend to make these trade-offs within the geographic corridor in which they already live is confirmed and captured by the choice survey model as a strong preference to locate closer to their current home. The trade-off between structure and location is an important consideration in this research, since the key research questions are concerned with influencing location.

To give a sense of how households are distributed along the spectrum from location-focused to structure-focused preferences, chart 3.2 shows the estimated probability households would choose a house in a growth suburb over an apartment in an inner suburb — that is, a choice between an option with the most-preferred structure and a compromise on location and an option with one of the most-preferred locations (when money is no object) and a compromise on structure. Other attributes, including price and distance to current home, are assumed to be equal across the two options for the purpose of this illustrative exercise. Most households who are looking to buy favour structure over location when faced with this choice, with a total expected market share of 61 per cent in favour of the house.

3.2   Most, but not all, buyers favour structure over location
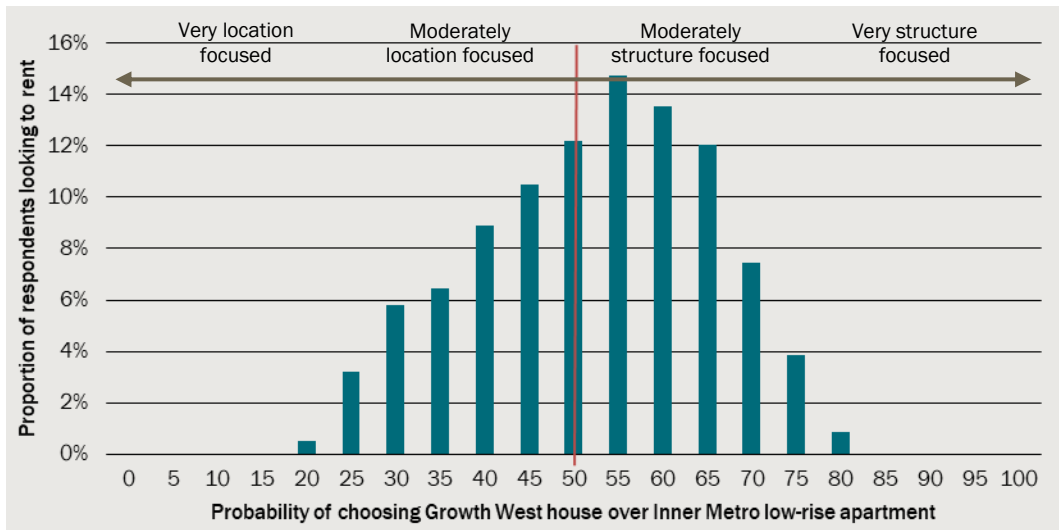

Note: Assumes all attributes other than zone and structure are the same across both options
Data source: CIE

When faced with the same choice, households looking to rent are a mix of both types of preference. Around half of those households favour location over structure type, with a 50-50 expected market share across the two homes (chart 3.3).

3.3   Households looking to rent are a mix of structure and location-focused

Note: Assumes all attributes other than zone and structure are the same across both options
Data source: CIE

4   Shifting demand away from growth areas

What are the necessary pre-conditions for a proportion of households living in (or likely to live in) new suburbs to have chosen a different residential location?

■ Demand for homes in growth areas would decrease by an estimated 17 per cent under any suite of policy initiatives that would have the effect of reducing the prices of townhouses and apartments in established areas by 10 per cent and increasing the prices of homes in growth areas by 10 per cent

■ When townhouses and apartments in established areas get cheaper, households substitute to townhouses or three-bedroom apartments in inner and middle suburbs of Melbourne

■ When homes in growth areas get more expensive, households substitute to houses in regional areas and outer suburbs, to large apartments in inner suburbs, or to a house with fewer bedrooms

Infrastructure Victoria is investigating a suite of policy options that could either decrease relative prices for apartments and townhouses in established areas (e.g. by removing barriers to supply of those homes) or increase relative prices for homes in growth areas. The market share model developed in this study was used to estimate the reduction in demand for homes in growth areas that would occur for various levels of change in these relative prices (chart 4.1).

The impact on demand for homes in growth areas from reducing the prices of apartments in established areas is relatively modest. A 10 per cent decrease in apartment prices would reduce demand for homes in growth areas by just 2.6 per cent. A 20 per cent decrease in apartment prices would reduce demand for homes in growth areas by 4.8 per cent.

Reducing the price of townhouses would be more effective, with a 10 per cent price decrease leading to a 3.9 per cent decrease in demand for homes in growth areas. A 20 per cent decrease in townhouse prices would decrease demand for homes in growth areas by 7.9 per cent.

Increasing the price of homes in growth areas would have a much larger effect. An increase of 10 per cent would reduce demand for homes in growth areas by 11 per cent — a similar impact to a 20 per cent price decrease for apartments and townhouses in established areas. A 20 per cent price increase would be expected to decrease demand by 33 per cent.

A mix of policy initiatives achieving a 10 per cent price decrease for apartments and townhouses in established areas, combined with a 10 per cent price increase for homes in growth areas, would decrease demand for homes in growth areas by around 17 per cent.
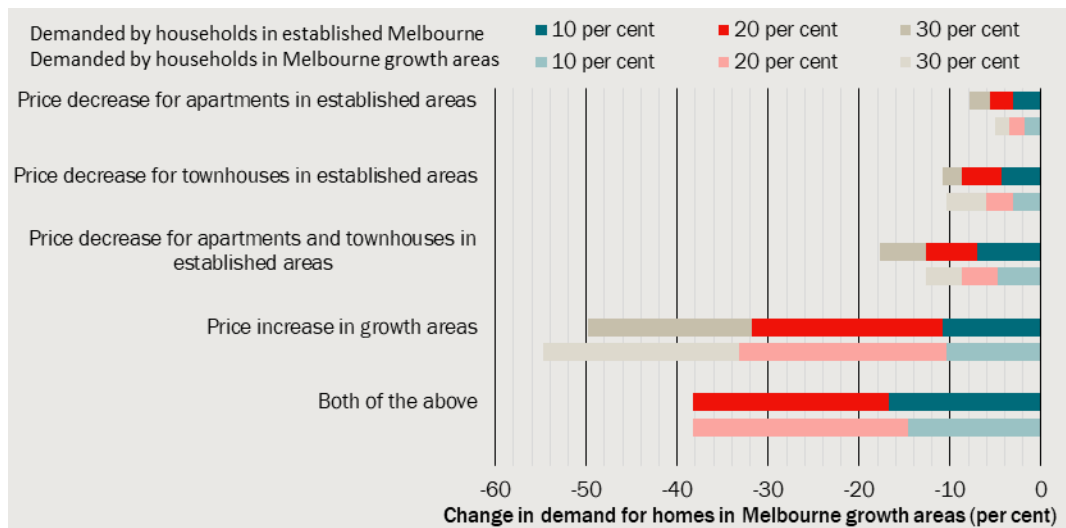
4.1   Shifting demand away from growth areas
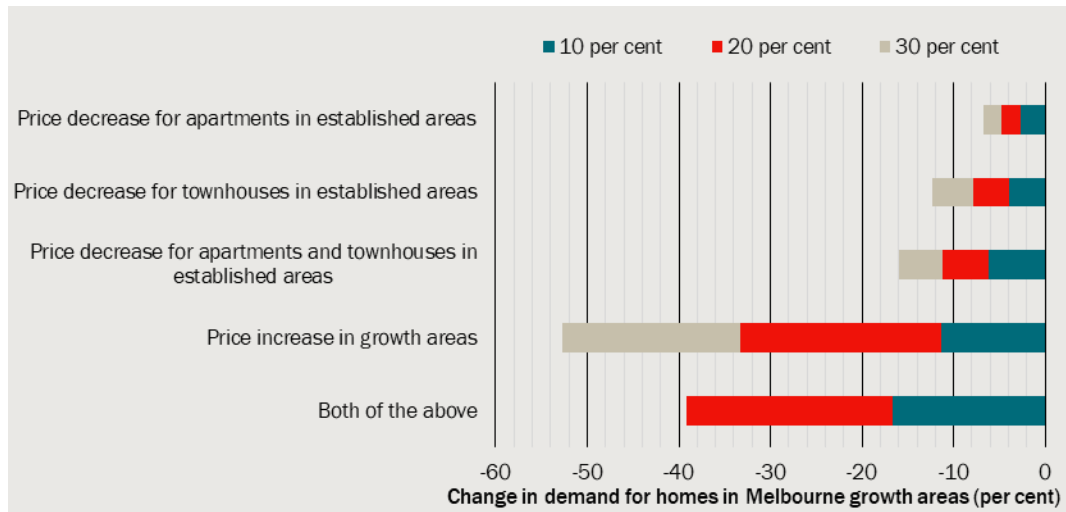
Note: 30 per cent shock for 'Both of the above' was not modelled, as it would be outside the range of levels used in the survey.
Data source: CIE

Decreasing prices for apartments and townhouses in established areas would be more effective at encouraging households currently living in established areas to remain in established areas than it would be at shifting households who already live in growth areas (figure 4.2). Increasing the prices of homes in growth areas, in contrast, is likely to be more effective at shifting households who already live there than at encouraging households to remain in established areas.

4.2   Substitution away from growth areas depends on current location

Note: 30 per cent shock for 'Both of the above' was not modelled, as it would be outside the range of levels used in the survey.
Data source: CIE

Turning to the spatial impacts of the demand substitution, the price decrease for townhouses and apartments in established areas would result in a concentrated densification of population in middle and inner suburbs (figure 4.3), whereas the price increase for homes in growth areas would result in demand increases in outer suburbs and regional areas as well as inner Melbourne (figure 4.4).

4.3 Change in demand due to a 10 per cent price decrease for townhouses and apartments in established areas
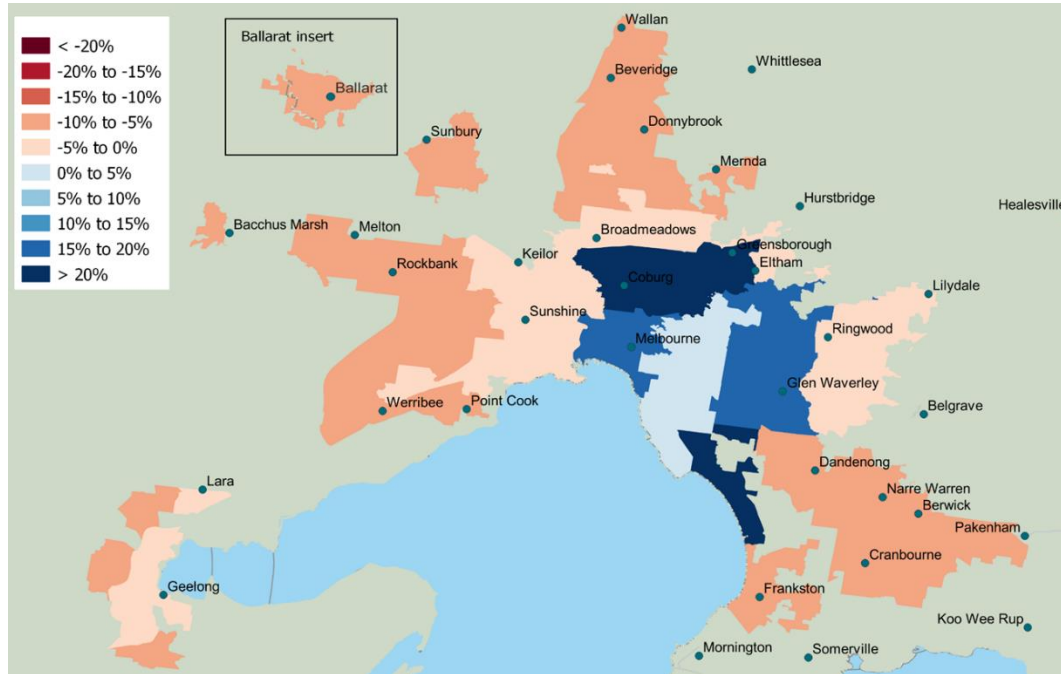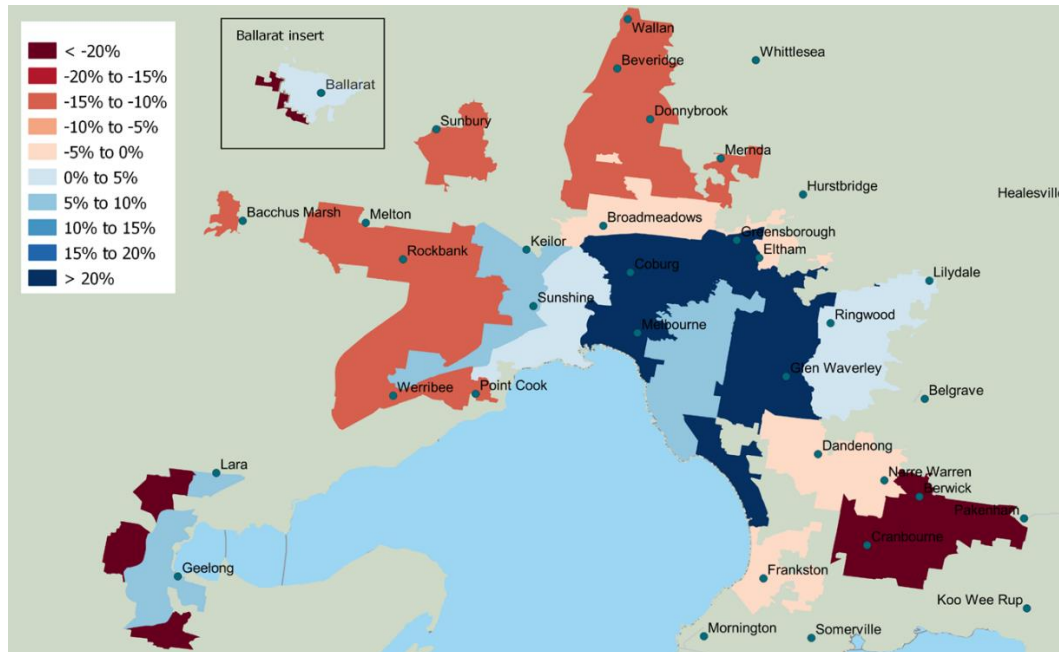

Data source: CIE market share model

4.4 Change in demand due to a 10 per cent price increase for homes in growth areas

Data source: CIE market share model

The spatial impacts of the two price shocks combined would see significant substitution towards homes in the inner metropolitan area and middle suburbs to the north, east, and south (figure 4.5).

4.5   Change in demand due to a 10 per cent price decrease for townhouses and apartments in established areas and a 10 per cent price increase for homes in growth areas
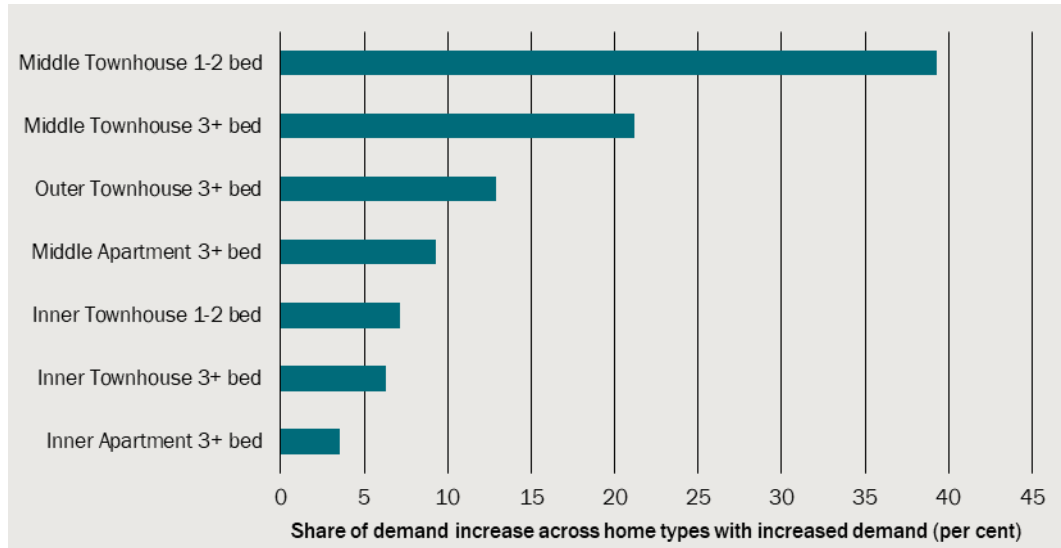

Data source: CIE market share model

Some households who favour houses in growth areas would substitute to townhouses (figure 4.6). They may also substitute to apartments with three bedrooms in good locations. They will not, however, substitute to apartments with fewer than three bedrooms.

When homes in growth areas become more expensive, some households will shift demand to established areas in Geelong and Ballarat (see the red bars in figure 4.7). Those who can afford it may shift to a house in the outer suburbs. Others, who would choose a four- or five-bedroom house in a growth area under current market prices, will still choose a home in a growth area but forgo a bedroom, as evidenced by the *increase* in demand for three-bedroom homes in growth areas when prices are increased.
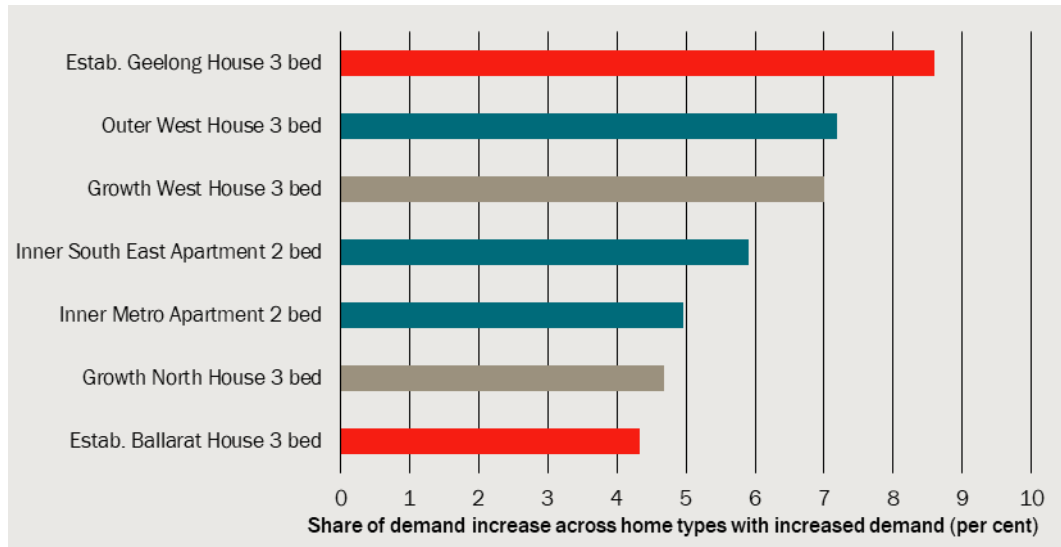
4.6 Some households will substitute to townhouses if they are cheaper

Home types with largest increase in quantity demanded by households favouring houses in growth areas when prices for townhouses and apartments in established areas are reduced by 10 per cent

Data source: CIE market share model

4.7 Some households may move regional if growth areas are more expensive

Home types with largest increase in quantity demanded by households favouring houses in growth areas when prices for homes in growth areas are increased by 10 per cent

Data source: CIE market share model

5   The households that will substitute

What are the characteristics of households with a greater propensity to shift their housing decision from greenfield to established locations?

■ The households most likely to substitute demand away from growth area housing:

  – have characteristics associated with:

    … shorter tenure, such as being aged under 30 years, currently renting, having lived in Australia for five years or fewer, or being a group household

    … willingness to live in smaller dwellings, such as currently living in an apartment or being a single-person household, or

    … lower financial means, such as being a single parent, having no full-time employees in the household, or having income of less than $80 000 per year, and

  – have a stronger preference for being able to easily walk to most destinations and for maximising savings from grants and tax incentives.

Characteristics of households demanding homes in growth areas

Before analysing which households will most readily substitute away from growth area housing products, it is important to establish the characteristics of households demanding those products in the current market. In the housing market share model, the households most likely to choose a growth area product are households already living in a growth area (table 5.1). The households most likely to move to growth areas in the future are couples with children and/or with income between $104 000 and $156 000 per year. Households with decision makers who are aged 30-49 and/or have lived in Australia between 6-10 years are also more likely to choose a growth area product.

5.1   Characteristics associated with demand for homes in growth areas

	Increase in likelihood of choosing a home in a growth area relative to the average respondent
	per cent (proportionate)
Currently living in growth area	52
Couple with children	16
Respondents who have lived in Australia between 6-10 years	15
Household income $104k-$156k per year	15
Aged 30-49 years	8

|	Increase in likelihood of choosing a home in a growth area relative to the average respondent
	per cent (proportionate)
Currently living in a house	8

Source: CIE market share model

Households currently renting, but looking to buy, are an important source of future demand for homes in growth areas. Renters make up around one third of the households in Melbourne, Geelong and Ballarat. Around half of renters in the survey would consider buying a home if they needed to find a new home. Some 22 per cent would definitely look to buy a home and another 26 per cent expect to continue renting but would buy if a home they liked was affordable.

Households intending to continue renting have relatively low demand for homes in growth areas (figure 5.2). Households currently renting and looking to buy a home, in contrast, have very strong demand for homes in growth areas. Budget constraints and a strong preference for detached houses sees around half of the market share for this group allocated to growth and regional areas.

5.2   Locations demanded by households currently renting
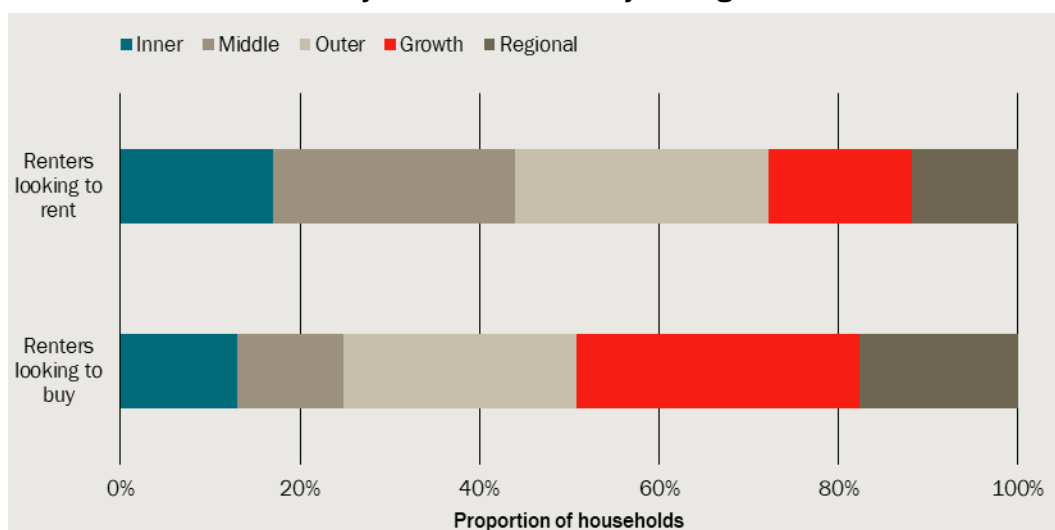
Note: Both categories include the 26 per cent of renters who indicated they would 'rent a home, but would buy if a home I liked was affordable'
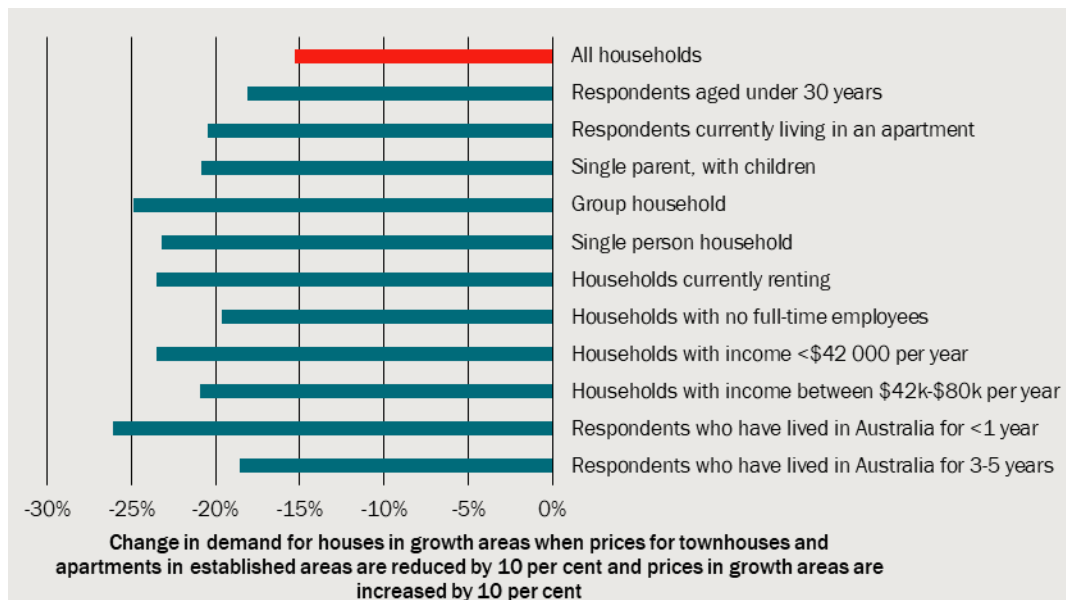*Data source:* CIE

These renters looking to buy tend to:

- be younger than other renters (52 per cent are aged 30-59, compared to 43 per cent among renters looking to continue renting)
- be couples (58 per cent are couples, compared to 41 per cent among renters looking to continue renting), and
- have higher income than other renters (64 per cent earn income over $78 000 per year, compared to 39 per cent among renters looking to continue renting).

Which households are easier to shift?

The household characteristics associated with the largest demand response to the price reduction for townhouses and apartments in established areas are characteristics associated with shorter tenure (aged under 30 years, currently renting, lived in Australia for five years or less, group household) and willingness to live in smaller dwellings (currently living in an apartment, single-person household) (figure 5.3). They also include a range of characteristics associated with lower financial means (single parent, no full-time employees, income less than $80 000 per year). The hardest households to shift away from growth areas are couples with children and households with higher incomes (figure 5.4).

5.3   Whose demand is easier to shift?

Data source: CIE market share model

5.4   Households that are difficult to shift away from growth areas
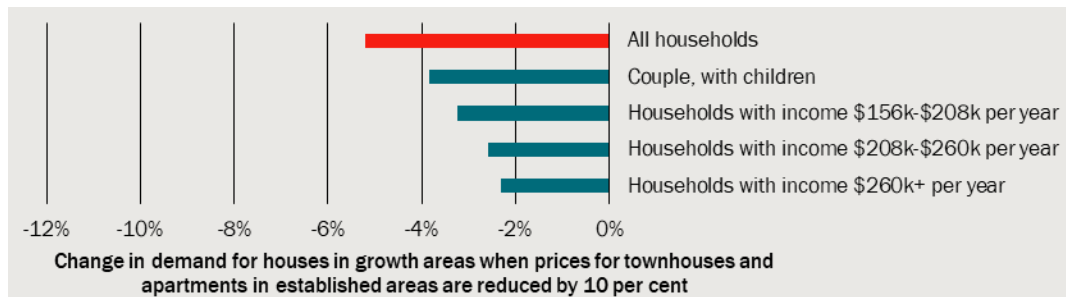
Data source: CIE market share model

Turning to attitudes, the households who most readily shift demand away from growth areas in response to reduced prices for townhouses and apartments in established areas tend to agree more strongly with:

▪ I must live in the location I want, even if my dwelling is not ideal

- I must be able to easily walk to most things

The households who most readily shift demand away from growth areas in response to increased prices for homes in growth areas tend to agree more strongly with:

- My home choice must save on stamp duty and maximise government grants and other tax incentives

Households whose demand is most difficult to shift away from growth areas tend to agree more strongly with:

- I would always choose a house or townhouse with land, over an apartment, because it will be a better investment
- My home must have a spare bedroom to use as an office and/or guest room
- My neighbourhood must have a large community from a similar ethnic background to my family's background
- My neighbourhood must have lots of households at a similar life stage to mine