Deloitte.

Economic impacts of proposed rental reforms in Queensland

Department of Housing and Public Works

May 2020

Deloitte Access Economics

Contents

Executive Summary **1**

1. Overview **5**

1.1 Housing markets and rental reform impacts in Queensland 6

1.2 About this report 6

1.3 Analytical approach 7

1.4 Report structure 8

2. Profile of Queensland's housing market **9**

2.1 Investor activity in the Queensland market 10

2.2 Profiles of owner-occupiers and renters 11

3. The economics of housing markets **13**

3.1 Understanding change in the housing market 14

3.2 Summary of proposed reforms 17

3.3 Impacts of the reforms 18

4. Estimating the costs to homeowners of the proposed reforms **21**

4.1 Estimating the baseline user cost for Queensland investors 22

4.2 Estimating the change in user costs for investors 23

5. Impacts on Queensland's broader housing market **25**

5.1 Effects on property prices for all homeowners 26

5.2 Effects on rents for investors and tenants 26

5.3 Effects on the share of owner-occupiers across Queensland 27

6. Economic impact of proposed reforms to wider Queensland economy **29**

6.1 Overview 30

6.2 Methodology 30

6.3 Summary of broader economy-wide results 30

Appendices **33**

Limitation of our work **58**

Tables

Table i: Summary of low and high impact scenario changes to total investor user cost

Table 2.1: Housing market composition – renters versus owner-occupiers, Queensland and Australia, 2017-18

Table 2.2: Summary of notable studies considering the housing quality

Table 4.1: Summary of baseline estimates of user cost in Queensland (prior to reforms), 2018

Table 4.2: Summary of low/high scenario changes to investor user cost

Table A.1: Housing market composition – renters versus owner-occupiers, Queensland and Australia, 2017-18

Table A.2: Summary of notable studies considering the housing quality

Table D.1: Summary of key assumptions used to estimate the low/high scenario changes in user cost due to the proposed housing quality and minimum housing standards

Table D.2: Detailed summary of estimated change in administrative costs due to other reforms

Figures

Figure 1.1: Overview of the analytical approach

Figure 3.1: Costs that come with owning a house determine an owner's 'user cost'

Figure 3.2: Relationships that drive market dynamics

Figure 3.3: Proposed reforms of the Residential Tenancies and Rooming Accommodation (RTRA) Act 2008

Figure 3.4: Illustrative example of how a person's user cost could change

Figure A.1: Private rental market – Queensland and Australia, 1994-2018

Figure A.2: Heatmap of private rental properties across Queensland (SA4 level), 2016

Figure A.3: Age distributions for private renters and owner-occupiers – Australia, 2017-18

Figure A.4: Distributions of dwelling structures for rental properties and owner-occupier households – Australia, 2017-18

Figure A.5: Average housing costs for private tenants and owner-occupiers – Queensland, 1994-95 to 2017-18

Figure A.6: Shares of low-income and high-income households by housing ownership status – Queensland and Australia, 2017-18

Figure B.1: The long run relationship between user costs and rental yields in Australia, 1986-2018

Figure B.2: Relationships that drive market dynamics

Figure B.3: Housing market supply and demand responses to an increase in user costs for investors

Figure B.4 Summary of the relationships estimated from the econometric modelling

Source: Deloitte Access Economics (2019), pp.46

Figure B.5: Short and long-run effects on house prices (in relative terms, %) for a 1% increase in user cost for investors

Figure B.6: Short and long-run effects on rents (in relative terms, %) for a 1% increase in user cost for investors

Figure B.7: Short and long-run effects on share of owner-occupiers for a 1% increase in user cost for investors

Figure E.1: A stylised representation of DAE-RGEM

Table E.2: Summary of price shocks to the owner-occupied and rental housing market segments, Queensland

Executive Summary

Ensuring safety and fairness in Queensland's growing rental market

The share of **private rentals in Queensland have risen steadily over the last decade** – now representing just over one-third of the Queensland housing market. As such, it is important to consider the regulations that govern the balance of rights and responsibilities between tenants and landlords.

The **Queensland Government is currently considering regulatory changes to the state's private rental market, which seeks to balance the rights of tenants and landlords.** The changes intend to provide tenants with greater certainty and improved amenity, while preserving the rights of investors and landlords. The objectives of the proposed reforms are to modernise laws around the rental market to improve protections, accountability and housing conditions, and in doing so, improve the stability of the rental housing market – providing for a broad set of economic and social benefits to Queensland.

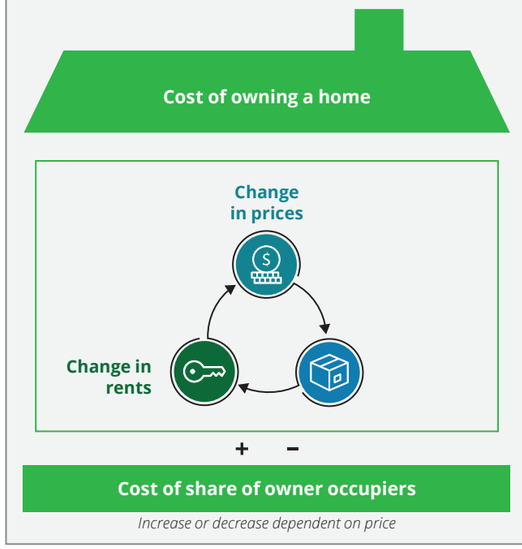
Residential housing markets are complicated because of the nature of housing itself – housing is used by both renters and owner-occupiers, and is also an asset class that attracts investors as landlords. The different roles people can have in relation to housing sees multiple relationships and market dynamics incorporating the supply and demand preferences of the various housing stakeholders. These interactions determine housing purchase prices (for investors and owner-occupiers) and rental prices (for investors and renters) – who gets what in the housing market and why, and at what price.

Market responses to proposed reforms

Deloitte Access Economics was engaged to determine **whether the proposed rental reforms would materially impact supply and/or demand in the private rental market,** and therefore rental prices and/or property market dynamics. The Deloitte Access Economics' approach analyses the proposed rental reforms in this context and isolates the likely role of the proposed policy reforms in impacting the housing market in Queensland.

To isolate the impacts of the proposed set of reforms, the costs of owning a home or **'user cost' is the applied framework to understand the complex dynamics within the housing market.** The concept of user cost captures how 'costs' impact the preferences and decisions a 'user' of housing (investors or owner-occupiers) can make. Costs include, for example, housing maintenance, administration and transaction costs; mortgage interest payments and property taxes.

General economic understanding of the housing market indicates that **any increase in user cost will lead to a reduction in property prices** (as the return on investment declines, making it less attractive for investors), which results in a **reduction of excess supply of housing, putting upward pressure on rents.** This also leads to a higher share of owner-occupiers, as it becomes a relatively more attractive option for people instead of renting. This assumption holds for the user cost analysis and economic modelling to determine the broader economic impacts to Queensland.



Summary of relationships for an increase in user cost:

- An increase in user cost, flows through to a decrease in property prices
- This results in less housing supply, reducing the availability of *excess stock*
- Reduced supply means there is less availability of rental properties, resulting in higher rents (all else being equal)
- Higher rents, combined with lower house prices, increases rental returns
- The share of owner-occupiers increases, as investors withdraw and renters purchase houses instead

Noting, the estimated change in total user cost is an aggregate result and not every property would reasonably be impacted by the proposed reforms.

Broader benefits of proposed reforms

The analysis presented in this report does not explicitly consider any quantified benefits (rather seeking to understand any imposed costs and economic impacts). As with any policy reform, economic and social benefits will be felt. The growing number of renters in the Queensland market will benefit, and it will also provide certainty to all parties in the rental sector by better assigning and clarifying risks. Where the quality of private rental housing improves, owners also receive a greater benefit. Certainty, security and a balance of rights and responsibilities between tenants and owners can provide for a well-functioning, and efficient private rental market in Queensland – where everyone benefits.

Proposed reforms have a marginal impact on the costs of owning a home

Overall, the impacts of proposed reforms (in aggregate) are negligible on the costs to investors of owning a property – even under the highest impact scenario modelled (at a less than 1% change). Before any reform in the market, the annual total cost for investors of owning a property in Queensland is around $8.6 billion (or 11.7% of the market total). Under the proposed reforms, the relative change to this total investor user cost under the low and high scenarios are:

1. **Low scenario –** reforms could slightly increase the total investor user cost by 0.25% (or $0.022 billion), representing an average increase of $39 per investment property per year.
2. **High scenario –** reforms could marginally increase the total investor user cost by 0.82% (or $0.070 billion), representing an average increase of $125 per investment property per year.

Noting, the estimated change in total user cost is an aggregate result for all Queensland investors and not every investor in Queensland would reasonably be impacted by the proposed reforms.

Table i: **Summary of low and high impact scenario changes to total investor user cost**

	Low case	High case
Estimated total investor user cost of owning a property prior to reforms:	$8.6 billion	$8.6 billion
Estimated change in total user cost due to proposed reforms:	$0.022 billion	$0.070 billion
Proportion of change due to minimum housing standards	$0.004 billion	$0.052 billion
Proportion of change due to costs of all other reform options	$0.017 billion	$0.017 billion
Relative change to aggregate investor user cost in Queensland	0.25%	0.82%
Estimated change in user cost per investment property, per year	$39	$125

The key findings resulting from an increase in investor user costs (Table i) on the broader housing market in Queensland are:

1. **Low scenario –** house prices decline by a maximum of 0.04% after one year, before stabilising at around 0.03% in the longer term
2. **High scenario –** house prices decline by a maximum of 0.12% after one year, before stabilising at around 0.11% in the longer term

On average house price, **a price decline of 0.03%-0.11% translates to a $171-$554 decrease in value** (at 2018-dollar terms). This negligible decline would only be relevant for homeowners looking to sell or buy a property. Noting, in practice, a **decrease in value of this magnitude is unlikely to materially change or influence the buying and purchasing decisions of an individual.** It is also worth noting that this figure is the change in price as a result of the policy, and there are also other external factors which could influence house prices.

Proposed reforms have a negligible effect on the Queensland economy

At the economy wide level, the proposed reforms are expected to have a negligible effect on the Queensland economy in terms of impact on real GSP. Specifically, the change in real GSP is estimated to be around $4.3-$13.6 million above baseline 'no policy change' levels at 2029 (i.e. the long term).

In relative terms, the estimated impacts of the proposed reforms are small in comparison to the size of the economy, and do not have significant flow-on effects through the economy. The relative deviation from the 'no policy change' economy shows that the **Queensland economy is expected to be 0.08%-0.26% larger as a result of the reforms.** Additionally:

- The aggregate impact on employment due to the reforms is negligible.
- Aggregate investment in Queensland is estimated to grow slightly above the baseline economy as a result of the aggregate change in user cost.

1 Overview

1.1 Housing markets and rental reform impacts in Queensland

Housing holds a special place in Australian culture. In particular, the aspiration of owning the 'Aussie home' on quarter acre block with a Hills hoist runs deep through the nation's subconscious. In reality, however, home ownership and achieving the Australian dream is increasingly becoming out of reach for most – particularly the young and low-income households. Instead, Australians increasingly rent and rent for longer - this is especially true in Queensland. It is therefore necessary that Australian governments revisit the regulations that govern the balance of rights and responsibilities between tenants and landlords.

Housing markets, however, are complex beasts. Housing by its very nature is complex – an essential commodity consumed as shelter by renters and owner-occupiers, coveted as an asset by investors, and (for the most part) completely immobile once constructed. The 'housing market' is also a catch-all for many smaller markets, differentiated by factors such as geographical location, property class or dwelling type, and dwelling quality. As a result, housing markets, unlike most other commodity markets, reflect the demand and supply preferences of multiple stakeholders, and are communicated to stakeholders through house prices, rents and rent yields.

The inter-relationships that exist in housing markets between the key stakeholders mean that a change to one facet of the market will reverberate throughout the entire market, having ramifications for all participants. The size and importance of these ramifications depend on the direction and strength of the linkages that tie the market together.

To examine the impact of a change that affects the costs or returns to any one stakeholder, it is important, therefore, to look beyond these individual outcomes and instead consider the housing market as a whole and the broader economic consequences in net terms.

1.2 About this report

The Queensland Government is currently considering regulatory changes to the state's private rental market, which seeks to balance the rights of tenants and landlords. The changes intend to provide tenants with greater certainty, safety and security with a stronger framework to negotiate and enforce rights, while preserving the rights of investors and landlords. The proposed changes include:

- Setting housing quality and **minimum housing standards** for residential rental properties
- **Strengthening domestic and family violence protections for tenants**
- Improving the transparency around **managing tenancies**
- Supporting parties to **communicate and negotiate about renting issues,** such as renting with pets and making minor changes to the rental property

While aimed at benefiting the quality of life and wellbeing of tenants, as well as better preparing for a future where renting is the norm for many, these proposed changes are expected to increase the cost of ownership for landlords and property investors through two sources - the costs associated with administering a rental property, and the costs associated with maintaining rental properties to a minimum standard of quality.

To measure the impact of these proposed policy changes, the Queensland Department of Housing and Public Works (DHPW) has engaged Deloitte Access Economics to estimate the quantum of the expected costs, and then model the broader implications of these costs to the housing market and to the broader Queensland economy.

1.3 Analytical approach

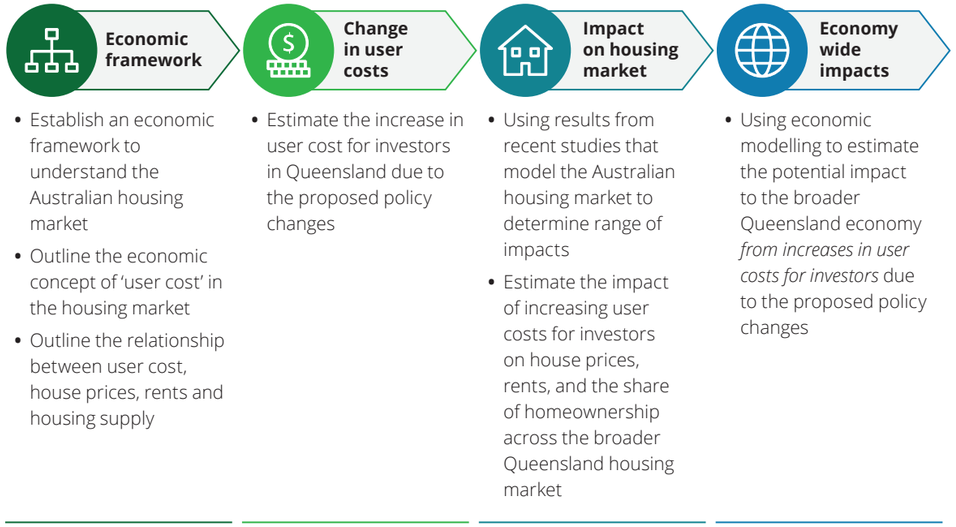
To quantify the economic impact of the proposed reforms, this report adopts the 'user cost' housing market model as the conceptual economic framework for understanding the direction of the relationships in the housing market between prices, rents and supply. In doing so, this report draws on the findings of two recent econometric studies of the Australian housing market by Deloitte Access Economics and the Reserve Bank of Australia.[1] Using partial-equilibrium econometric analysis, these studies capture the impact on house prices, rents and supply from an increase in the cost of ownership for a property investor due to changes in tax policy and economic conditions, respectively.

The results from the recent econometric modelling of the Australian housing market undertaken by Deloitte Access Economics (2019) are then used to calculate the subsequent impact on prices, rents and housing supply that correspond to the increase in user costs for investors in Queensland. The expected increase in aggregate user costs for investors, which are expected as a result of the proposed policy changes, are approximated under a low and high case. The use of a low and high case estimate for the increase in user cost reflects the degree of uncertainty around the exact costs associated with the proposed policy changes.

Having quantified the expected aggregate increase in user costs for investors and the subsequent impact on house prices, rents, and the share of home ownership, this report then examines the broader economy-wide impacts on Queensland due to the proposed policy changes. This component of the analysis is undertaken using Deloitte Access Economics' in-house Regional Computable General Equilibrium Model (DAE-RGEM). Taking a scenario-based approach, the impact of the proposed policy changes on the future Queensland economy are modelled as an alternate or counterfactual scenario to the expected future 'business as usual' economy (in terms of economic welfare (in terms of gross state product (GSP)) and employment (in terms of full-time equivalent (FTE) jobs)). The counterfactual scenarios consider the economic impact of the change to house prices and rents that are estimated to result from the increase in user costs due to the proposed policy changes.

Figure 1.1 provides an overview of the analytical approach and how each stage of the analysis informs the next.

Figure 1.1: **Overview of the analytical approach**



1.4 Report structure

The remainder of the report is structured as follows:

- **Chapter 2** outlines the profile of Queensland's housing market – to describe the foundation on which any proposed policy reform can occur
- **Chapter 3** describes the economic interactions of the housing market – and how this ultimately impacts a person's user cost in relation to housing, and the broader impacts in the market.
- **Chapter 4** estimates how the full set of proposed reforms could initially impact on user costs.
- **Chapter 5** presents the potential impacts of the proposed reforms on the housing market in Queensland. The impacts are estimated by applying the housing market relationships (presented in Chapter 3) to the relative change in user costs (presented in Chapter 4). The analysis considers the impact to property prices, rents and the share of owner-occupiers.
- **Chapter 6** estimates how the full set of proposed reforms could impact the Queensland economy on an aggregate basis, using the outcomes of Chapters 4 and 5.

2 Profile of Queensland's housing market

Chapter 2 outlines the profile of Queensland's housing market – to describe the foundation on which any proposed policy reform can occur. A more detailed profile of the housing market can be viewed in Appendix A.

The broad set of proposed policy changes to Queensland's private rental market will indirectly affect both renters and owner-occupiers. In this context, it is important to understand the size of these different household groups across the state, and the characteristics of the households and people that will be most affected.

2.1 Investor activity in the Queensland market

According to ABS statistics, in 2017-18, Queensland had a residential housing stock of approximately 1.87 million households, accounting for around 20% of the national housing stock. As shown in Table 2.1, **this housing stock is split almost 50:50 between the Greater Brisbane area and Regional Queensland,** with both regions having a similar market composition in terms of renters and owner-occupiers.

Investor activity in Queensland's housing market has been increasing over time and is slightly higher than the national average. The share of private rentals in Queensland has risen steadily from just over 20% in 1994-95 to around 30% in 2017-18 – consistently tracking above the national average by around 2 to 7 percentage points.

Table 2.1 shows that across Queensland, the regional distribution of residential investment properties corresponds to the key population centres. **The highest proportions of residential investment properties are located in the areas nearest to Brisbane,** as well as those located in South-East Queensland, such as the Gold Coast.

Table 2.1: **Housing market composition – renters versus owner-occupiers, Queensland and Australia, 2017-18**

	Greater Brisbane	Rest of Queensland	Total Queensland	Australia
Owner-occupiers	63.6%	64.7%	63.6%	67.4%
Total renters	36.4%	35.3%	36.4%	32.6%
Private tenants	32.5%	29.9%	30.4%	27.6%
Public housing	3.9%	3.0%	3.4%	3.2%
Total households	100.0%	100.0%	100.0%	100.0%
Number of households (thousands)	880.1	991.4	1,873.3	9,270.4
% share of Australia	9.5%	10.7%	20.2%	100.0%

Source: ABS[2]; Deloitte Access Economics

Note: Private tenants and public housing may not add to 'total renters', as total renters also includes other landlord types.

2.2 Profiles of owner-occupiers and renters

There are key features that distinguish renters and **private rental households from owner-occupiers. At the national level, private renters are distinguished by their youth.** In 2017-18, 35% of private tenants in Australia were aged 25-34 years. By comparison, the majority of owner-occupiers (42%) were aged between 45-64 years.

Another distinguishing feature of renting is the dwelling structure; where owner-occupiers purchase parcels of land standalone houses, renters occupy higher-density dwellings such as semi-detached, row or terrace houses, as well as flats or apartments. In 2017-18, 88% of Australian owner-occupier households were standalone properties; whereas **45% of private rentals were higher density dwelling types.**

Although these characteristics are limited to the national level due to data constraints, it is expected that the Queensland market would broadly share the same trends.

The relative costs of owning and renting

In **Queensland, renters typically experience higher housing costs in comparison to owner-occupiers** – A trend that has remained consistent over time when considering the average weekly housing costs (in nominal $ terms) for both private renters and owner-occupiers, as well as the respective share of these costs proportionate to disposable income.

Not only is it the case that **private tenants spend more per week** in dollar value terms (approximately $359 per week on average), they also commit a greater proportion of their disposable income to rent. R**enters of private dwellings in Queensland, in 2017-18, typically spent 20% of their disposable income on rent.** This is almost double the share of income allocated to the costs of housing by owner-occupiers – approximately 11% in 2017-18.

The lower cost of housing faced by owner-occupiers is partially explained by the share of owner-occupiers without mortgage repayments – approximately 44% of owner-occupier households in 2017-18. Mortgage-free owner-occupiers have much lower housing costs ($54 per week on average), in comparison to mortgaged owner-occupiers ($474 per week on average). However, even **owner-occupiers facing mortgage repayments spent relatively less of their disposable income on housing costs than the average renter.** In 2017-18, for example, mortgaged owner-occupiers in Queensland typically allocated 16% of their disposable income to repayments and other housing costs.

The prevalence of renting among low-income households

Another characteristic associated with rental properties in Queensland is the higher proportion of low-income households (i.e. households in the bottom 40th percentile of incomes for Australian households). **Over half of households renting in Queensland in 2017-18 were low-income households.** By comparison, only 35% of owner-occupier households were low-income.

This also partially explains why the relative housing costs for renters in Queensland is so much greater than for owner-occupiers. While the average weekly rent is comparable to the average weekly housing costs for owner-occupiers (and less when compared against the average weekly costs for mortgaged owner-occupiers), the higher proportion of low-income households that rent means that a larger share of disposable income is allocated to rent - the cost of renting is relatively higher and any additional pressures on rents will be most acute for this low-income cohort.

2.3 Quality of the private rental stock

There are a number of studies that have considered the quality of the housing stock in Australia. A summary of the key findings from notable studies is compiled in Table 2.2. This highlights indicatively that **between 3.5% and 12% of properties require some form of repair or maintenance.**

Table 2.2: **Summary of notable studies considering the housing quality**

Study	Key findings
Baker et al., 2019	Across New South Wales, Victoria and South Australia, the percentage of rental properties requiring essential and urgent repairs is 3.5%. The corresponding figures for properties owned with a mortgage and outright are 1.9% and 0.7% respectively.
Rowley and James, 2018	The proportion of private rental properties in poor or terrible condition in Australia is 6%.
CHOICE et al., 2017	The percentage of rental properties in need of urgent repair in Australia is 8%.
ARTD Consultants, 2019	The proportion of rental properties in Queensland in need of repairs or maintenance is 12%.
Liu et al., 2019	Structural problems tend to be higher among low-income households.

Source: Baker et al., 2019; Rowley and James, 2018; CHOICE et al., 2017; ARTD Consultants, 2019; Liu et al., 2019

3 The economics of housing markets

Chapter 3 describes the economic interactions of the housing market – and how this ultimately impacts a person's user cost in relation to housing, and the broader impacts in the market. The accompanying technical Chapter 3 can be viewed in Appendix A.

3.1 Understanding change in the housing market

The proposed changes to the regulations governing Queensland's private rental market have the potential to change the cost of home ownership to investors in Queensland. The proposed changes could increase costs through two sources – the costs associated with administering a rental property, and the costs associated with maintaining rental properties to a minimum standard of quality.

Unlike most other market structures, however, the economics of housing markets are more complex, with relationships that extend beyond renters and investors. While a change in the cost of ownership for a property investor may affect their decision to buy and sell property, it also has an impact on market dynamics that affect all other housing market participants – renters, owner-occupiers, real-estate professionals, and residential property developers and construction workers.

Who gets what and why – and how much does it cost?

Residential housing markets are complicated because of the nature of housing itself – housing is used by both renters and owner-occupiers and is also an asset class that attracts investors, as landlords.

The different roles people can have in relation to housing, and how these interactions play out, sees multiple inter-relationships and market dynamics incorporating the supply and demand preferences of the various housing stakeholders.

These interactions play out daily, in thousands of different ways. But ultimately, these interactions determine housing purchase prices (for investors and owner-occupiers) and rental prices (for investors and renters) – who gets what in the housing market and why.

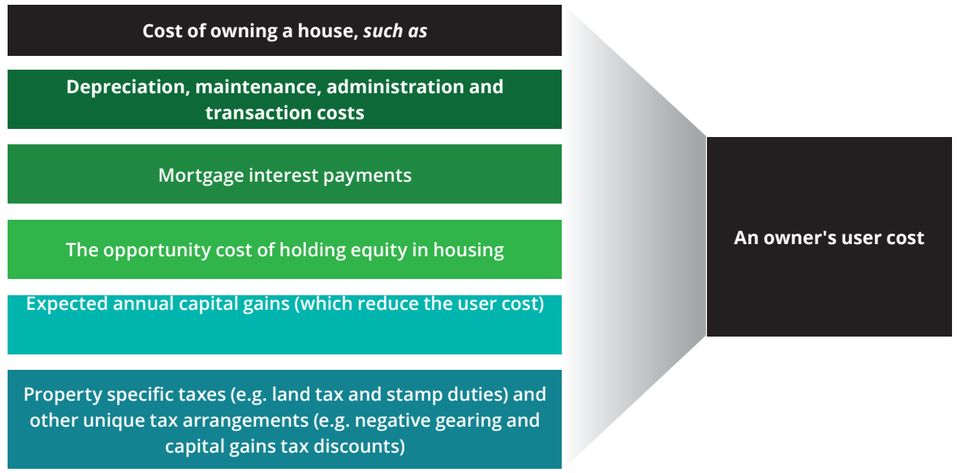
Cost of owning a house in Queensland

'User cost' – or simply, the cost of owning a house – is the framework for understanding the complex dynamics within the housing market.[3] The concept of user cost for each property (or household) captures how 'costs' impact the preferences and decisions a 'user' of housing can make.

Considering these costs (Figure 3.1), people decide whether to rent or buy a property based on weighing up the relative costs and benefits of each option.

In a perfect world, the price of a property equals the potential rental income, so the cost of ownership is equal to the cost of renting – essentially defining their 'user cost'.

Figure 3.1: **Costs that come with owning a house determine an owner's 'user cost'**



In theory, when a homeowner's user cost increases, the price becomes greater than the user cost in the short-run, and households have an incentive to rent instead of owning a property. By contrast, when user costs decrease, households have an incentive to buy property rather than rent, increasing the share of owner-occupiers. Over time, this relationship plays out in the housing market – influencing the supply and demand of housing, and the price.

In practice, **a range of broader factors come into play when people make decisions about whether to rent or buy a property –** but for the purposes of this analysis, it is assumed the relationship between user cost, property and rental prices and the owner-occupier mix holds.

For Australia, Deloitte Access Economics (2019) has provided descriptive evidence showing the close long-term relationship between historical user costs and rental yields – see Appendix B, Figure B.1.[4] This shows that relationships play out between user cost and rental yield in the long run.

Further, these relationships continue to hold when there is a change in user cost that only affects property investors (rather than all households). However, the price and rent adjustments are not limited to investment properties – all residential properties in the market are affected.

As detailed in recent studies of the Australian housing market by Deloitte Access Economics (2019) and Stapledon (2016), a policy change increasing the user costs to investors (but not owner-occupiers) delivers an increased net advantage to owner-occupiers but results in an increased user cost to all homeowners.[5] See Appendix B for further discussion.

Relationships that drive housing market dynamics

How a change in user costs to investors, due to a change in policy, impacts on the entire housing market is dependent on the direction of the relationships between prices, rents, and housing supply. These relationships are defined through two separate markets: housing services, and housing investment.

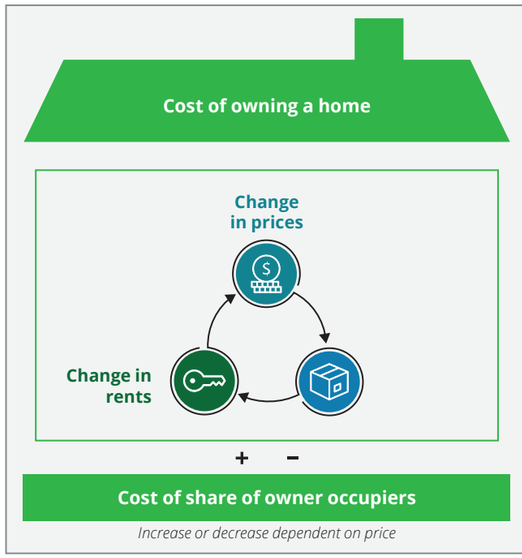
House prices balance the supply and demand for housing as an investment, while rental prices balance the supply and demand for housing services.[6] The relationship between market clearing rents and market clearing prices differs.

As Deloitte Access Economics (2019) outlines, the direction of these relationships are as follows:

- **User cost directly impacts house prices.** User cost is a determining factor in the purchase of houses for both owner-occupiers and investors. Owner-occupiers trade off the costs and benefits of renting as compared to home ownership; while investors purchase based on their rate of return from an investment property, which is a function of rental yield and user cost. User cost only impacts rents and housing supply through its relationship with prices.
- **Prices directly impact on housing supply.** In a given period, fluctuations in house prices directly impact on the quantity demanded for property, which, over time, triggers an equilibrating supply response. In the short-term, house price fluctuations do not directly impact rents. Over time, however, house prices indirectly affect rents to the extent that prices impact on supply. For example, in the absence of a change in housing demand, a sudden decrease in price will increase the quantity of housing demanded in the short-term. Over time this triggers an increased supply response, placing downward pressure on rents.
- **Housing supply impacts on rents**. The extent to which changes in total housing supply then impact on rents is determined by the amount of excess housing stock.[7] A decrease in new housing construction over time, for example, reduces the level of excess stock available, placing upward pressure on rents.
- **Rent directly impacts house prices.** Because rent is a benefit to the owner of a house (as income or an 'imputed' savings), increases in the value of rents increase the value of owning a property compared to other investments for investors. Likewise, it increases the value of not renting for owner-occupiers.

Figure 3.2 illustrates the direction of the relationships between prices, rents, and supply. As shown, the inter-related nature between the housing services and housing investment markets means that a price adjustment in the investment market, due to a change in user cost, ultimately leads to an adjustment in rents and a rebalancing of the housing services market. As part of this process, adjustments in the market clearing prices and rents also adjust the share of owner-occupiers (as opposed to renters) in the market.

Figure 3.2: **Relationships that drive market dynamics**



Summary of relationships for an increase in user cost:

- An increase in user cost, flows through to a decrease in property prices
- This results in less housing supply, reducing the availability of *excess stock*
- Reduced supply means there is less availability of rental properties, resulting in higher rents (all else being equal)
- Higher rents, combined with lower house prices, increases rental returns
- The share of owner-occupiers increases, as investors withdraw and renters purchase houses instead

Noting, the estimated change in total user cost is an aggregate result and not every property would reasonably be impacted by the proposed reforms.

Source: Deloitte Access Economics

Implications of increased user costs for the broader housing market

Deloitte Access Economics (2019) and Stapledon (2016) summarise the theoretical implications that flow through the broader housing market due to increases in the user costs for investors – in terms of house prices, rents, quantity supplied, and the share of owner-occupiers. Policy changes that increase investors' user costs can be expected to:

- Place downward pressure on prices
- Place upward pressure on rents
- Slow the growth in housing supply
- Increase the proportion of owner-occupiers relative to investors

3.2 Summary of proposed reforms

In recognition of the growing number of Queenslanders who rent, the proposed reforms of the Residential Tenancies and Rooming Accommodation (RTRA) Act 2008 have been introduced to improve the living experiences of this group based on the community feedback process. This first stage of reforms is built to introduce immediate changes, with a second stage intended to build upon foundations laid in the first stage – incremental step changes.

The reforms propose changes to the rental property market in order to: improve the safety and security standards to which rental accommodation must reach; better enforce current tenancy rights; and improve access to pet-friendly rental accommodation. To meet these objectives, five reforms have been proposed – See Figure 3.3.

These reforms are intended to provide tenants with greater certainty and improved amenity, while preserving the rights of investors and landlords. The obligations for landlords under these proposed changes are expected to impact on user cost through increased costs relating to maintenance or administration. A high-level summary of the reforms and cost impacts is provided in Figure 3.3, with further detail provided in **Appendix C.**

Figure 3.3: **Proposed reforms of the *Residential Tenancies and Rooming Accommodation (RTRA) Act 2008***

Housing quality and minimum housing standards

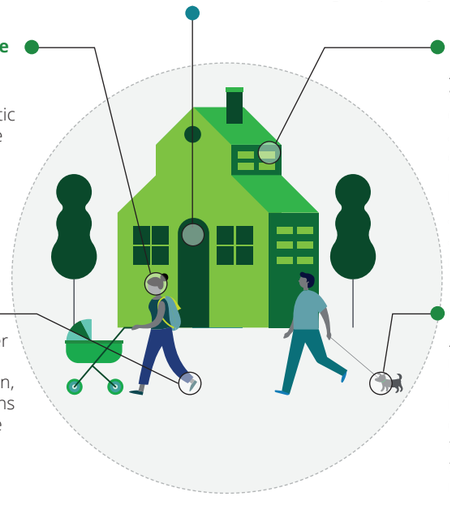
Rental accommodation will be required to meet set safety and security standards, including weatherproof and structurally sound; the standard of repair of fixtures and fittings; control of pests and vermin; security of windows and doors; and window coverings for privacy.

Domestic and family violence protections

Additional protections awarded to tenants experiencing domestic and family violence, such as, the right to end their tenancy with seven days' notice.

Minor modifications

Additional mechanisms through which minor modifications can be made to rental accommodation, including emergency modifications required to prevent DFV; minor health, safety, security and accessibility mods; and minor amenity and personalisation modifications.



Managing tenancies

Amending the RTRA to no longer allow property owners to end tenancies without a given reason, instead providing a list of reasons with which property owners are justified in doing so.

Renting with pets

Amending the RTRA Act to require property owners to have legitimate reasons for refusing a tenant's pet, and owner approval may be subject to reasonable conditions about the keeping of the pet at the rental property.

Change in maintenance costs **Change in administrative costs**

3.3 Impacts of the reforms

The most material costs to property owners are expected to come from changes to the housing quality and minimum housing quality (maintenance costs). As property owners can, in practice, choose to 'pass on' the costs of standards, as such, the analysis in subsequent chapters focuses on understanding the **impacts that are most material in terms of affecting cost** (i.e. supply and demand) in the Queensland private rental market[8] and form insights into **what the net effect is** to Queensland's economy and housing market, on balance.

An example of how such costs are distributed through the market, is shown in Figure 3.4, with a more detailed discussion provided in **Appendix B.**

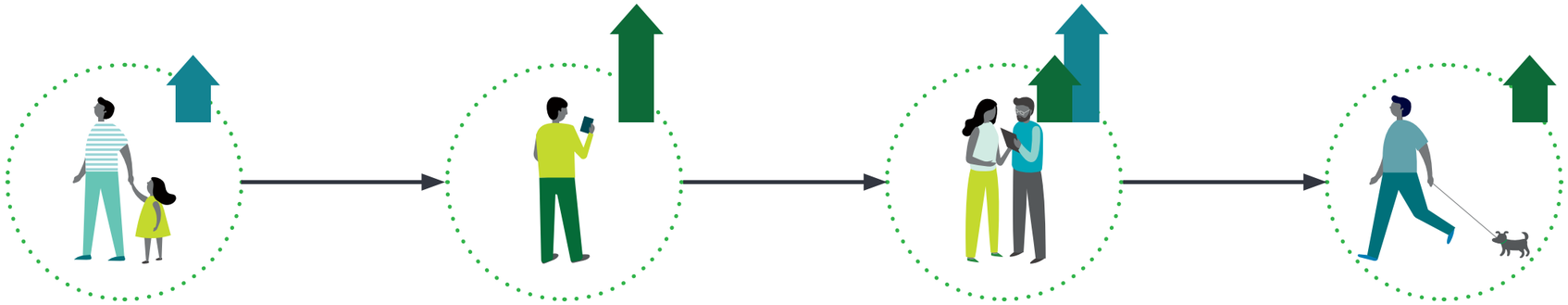
Broader benefits of proposed reforms

These reforms are proposed to ensure safety and fairness in the Queensland rental market and as such, provide a range of positive social outcomes for tenants and the broader community. While the analysis presented in this report does not explicitly consider any quantified benefits (rather seeking to understand any imposed costs and economic impacts), the broader benefits will be felt among the growing number of renters in the Queensland market, but will also provide certainty to all parties in the rental sector, by better assigning and clarifying risks. Certainty, security and a balance of rights and responsibilities between tenants and owners can provide for a well-functioning, and efficient private rental market in Queensland – where everyone benefits.

Figure 3.4: **Illustrative example of how a person's user cost could change**

Administration costs are spread evenly across the market and incorporated into the demand of houses (slight decrease in prices)

Maintenance costs are paid by investors and the increase in quality of the housing stock increases its market price (higher demand for quality housing)



Renter

Renter requests repairs to meet minimum housing standards, which increases the quality of the housing stock

Property manager

Increased administration tasks from reforms impose a constraint on the property manager's time.

Investor

The property owner (investor), directly pays for improvements to the property and has a greater administrative burden.

Owner-occupier

Owner-occupiers are not affected by the reforms, until they choose to sell their property, at which stage they are subject the reduced market price of their property (driven by a broader falling investor demand from any aggregate change).

Net effect of proposed reforms

Source: Deloitte Access Economics

This relationship in user cost does not depict any direct benefits from the proposed reforms that the various stakeholders may receive. For example, the renter has a higher standard of living and greater amenity and security; while the investor is simultaneously improving the quality of their investment, which they can reasonably expect to recover through potential tax arrangements, upon sale of the property or through higher rents due to greater demand for the property.

4 Estimating the costs to homeowners of the proposed reforms

Chapter 4 quantifies how the full set of proposed reforms could initially impact on the costs of home ownership or 'user cost' for both investors and across Queensland's entire housing market.

4.1 Estimating the baseline user cost for Queensland investors

The concept of user cost, introduced in Chapter 3, captures the range of ongoing costs involved with owning a property.

User cost is typically expressed relative (%) to the price of the housing asset. In Australia, aggregate user cost has gradually declined over time (see Appendix B, Figure B.1), fluctuating between 3% and 8% over the period from 1986 to 2018. Most recently, over the past five years, aggregate user cost has remained stable, averaging approximately 3% for homeowners. For the purposes of this analysis, it is assumed that the baseline aggregate user cost for both investors and owner-occupiers are the same prior to the proposed reforms and equivalent to the recent five-year average for Australia – approximately 3%.[9]

Applying the 3% national user cost estimate to the average price of residential properties in Queensland in 2018 (approximately $508,600[10]), implies an **annual aggregate user cost of around $73.3 billion for Queensland.**

Put simply, for all Queensland homeowners and investors, it costs them $73.3 billion per year to own their home. This represents the total baseline costs of home ownership for both investors and owner-occupiers in Queensland in 2018. On average, this equates to a baseline cost of around **$15,258 per household per year.**

It is possible that the average user cost for investors may, in reality, differ from the average user cost experienced by owner-occupiers. For the purposes of this analysis, however, it is assumed that prior to the proposed reforms, the average baseline user cost for investors and owner-occupiers are equal. The aggregate baseline user cost for investors in Queensland's private rental market depends, therefore, on the number of rental properties in the market – approximately 562,000 households in 2018.[11]

This implies an annual aggregate user cost for investors in Queensland of around $8.6 billion (or 11.7% of the market total). This annual figure for the Queensland market provides the current baseline from which the relative change in user cost due to the proposed reforms is measured, as it is investment properties which make up the private rental market.

Table 4.1: **Summary of baseline estimates of user cost in Queensland (prior to reforms), 2018**

Average user cost per household per year (all residential properties)	$15,258
Aggregate user cost (all residential properties)	$73.3 billion
Aggregate user cost for investors	$8.6 billion
Share of market total	11.7%

Source: Deloitte Access Economics

Given the degree of uncertainty around how each potential reform could reasonably take effect across all locations, stakeholders and housing stock, **a low/high scenario-based approach is taken to monetize the change to investor's user cost due to the proposed reforms.** The purpose of this approach is to provide a reasonable range of potential impacts, rather than a single point estimate. This gives guidance to the orders of magnitude of the potential impacts to inform if, on balance, the Queensland economy is better or worse off in aggregate.

4.2 Estimating the change in user costs for investors

It is anticipated that the proposed reforms could directly impact the user cost for investors in Queensland through two key channels:

1. **Housing quality and minimum housing standards –** increased maintenance costs associated with housing stock that does meet the necessary housing quality and minimum housing standards reform.
2. **Other reforms –** increased administrative costs across all stakeholders associated with the other reforms, such as domestic and family violence protections, minor modifications and renting with pets.

The assumptions and method adopted to monetize the cost of each of the proposed reforms is detailed in Appendix D.

Table 4.2 summarises the relative change to investor user cost due to the proposed reforms for the assumed low/high scenarios. The key findings are:

3. **Low scenario – reforms could increase the aggregate investor user cost by 0.25%** (or $0.022 billion), representing an average increase of $39 per investment property per year.
4. **High scenario – reforms could increase the aggregate investor user cost by 0.82%** (or $0.070 billion), representing an average increase of $125 per investment property per year.

These estimates of the relative change in the user cost for investors under the low/high scenarios are used for the remainder of the report to examine the subsequent impacts of the proposed reforms on the broader housing market and Queensland economy.

Noting, the estimated change in user cost is an aggregate result, and not every investor in Queensland would reasonably be impacted by the proposed reforms. The aggregate result reflects the connection and dynamics of the broader housing market discussed in Chapter 3.

Table 4.2: **Summary of low/high scenario changes to investor user cost**

	Low case	High case
Estimated aggregate investor user cost prior to reforms	$8.6 billion	$8.6 billion
Estimated change in user cost due to proposed reforms	$0.022 billion	$0.070 billion
Minimum housing quality standards	$0.004 billion	$0.052 billion
Administrative costs	$0.017 billion	$0.017 billion
Relative change to aggregate investor user cost	**0.25%**	**0.82%**
Estimated change in user cost per investment property per year	**$39**	**$125**

Source: Deloitte Access Economics

Note: Totals may not sum due to rounding.

5 Impacts on Queensland's broader housing market

Chapter 5 presents the potential impacts of the proposed reforms on the housing market in Queensland. The impacts are estimated by applying the housing market relationships (presented in Chapter 3) to the relative change in user costs (presented in Chapter 4). The analysis considers the low/high scenario impacts to property prices, rents and the share of owner-occupiers.

To help illustrate the impacts of the proposed reforms to different stakeholders and market participants, three stylised cameos are also presented.

Overall, the impacts to the housing market are negligible, consistent with the small relative change in user cost for investors due to the proposed reforms.

5.1 Effects on property prices for all homeowners

Although the estimated costs of the reforms increase the user cost for investors, due to the complex and interconnected nature of housing markets, the impact of these reforms manifest themselves throughout the broader housing market, affecting all homeowners through property prices.

As explained earlier in Chapter 3, property prices are a determining factor in the purchase of dwellings for both investors and owner-occupiers. A change in the user cost for investors, therefore, can impact on the purchase price of properties across the market.

Consistent with economic theory, analysis of the low/high scenario change to investor user cost indicates that increasing user cost for investors results in a reduction in property prices for all homeowners.

The key findings resulting from an increase in investor user costs on the broader housing market in Queensland are:

1. **Low scenario –** house prices decline by a maximum of 0.04% after one year, before stabilising at around 0.03% in the longer term
2. **High scenario -** house prices decline by a maximum of 0.12% after one year, before stabilising at around 0.11% in the longer term

On average, a price decline of 0.03%-0.11% translates to a $171-$554 decrease in value (at 2018-dollar terms). This negligible decline would only be relevant for homeowners looking to sell or buy a property – and to a modest degree disadvantaging sellers and benefiting buyers. It is also worth noting that this figure is the change in price as a result of the policy, and there are also other external factors which could influence house prices.

Noting, in practice, a decrease in value of this magnitude is unlikely to materially change or influence the buying and purchasing decisions of an individual.

5.2 Effects on rents for investors and tenants

The increase in user cost for investors due to the proposed reforms is also estimated to put slight upward pressure on rents.

Again, the estimated impacts are modest:

1. **Low scenario –** rents increase by a maximum of 0.02% after two years before stabilising at around 0.01% higher in the longer term
2. **High scenario –** rents increase by a maximum of 0.07% after two years before stabilising at around 0.02% higher in the longer term

On average, **a rent increase of 0.02%-0.03% translates to $0.02-$0.07 per week (or $1.15-$3.73 per year) for a rental property** (at 2018-dollar values). To put this number in context, the general increase in rents over the decade has averaged just over 2% (as measured by the consumer price index - rents[12]).

The relative change in rents is even more negligible than the relative change in dwelling prices. This highlights the slow-moving nature of the housing market and the inelastic nature of housing supply.

For renters, particularly low-income households, the negligible change in rents is relatively good news. Coupled with downward pressure on house prices, this makes purchasing a home a more attractive option for renters.

For investors, downward pressure on dwelling prices and a potential inability to pass on the user cost increase in full results in lower net rental yields (i.e. rental income net of user cost as a proportion (%) of the house price).

An illustrative example of how an aggregate change in user cost could impact a decision…

To invest or not to invest?

Con owns an investment property in the inner-Brisbane suburb of Herston, having inherited it some years ago as part of his parents' estate. Con currently rents this investment property to a family. And while the property is habitable, it is in a state of extreme disrepair due to its age, requiring maintenance to meet minimum housing standards.

While the median house price in Herston is approximately $789,000 and with median rents of $455 per week, Con's property only fetches 80% of these values due to its poor condition. Recent appraisals value the property at about $631,000 ($158,000 below the median house value), and Con currently rents the property for $365 per week ($90 below the market rate).

The lease on his property is up, and his tenants have made a move elsewhere.

Con knows that to let his property again, he will need to conduct repairs on the property due to its old age and state to meet the new minimum housing standards. Quotes from several builders put the repair bill close to $10,000. Con knows however, these repairs would greatly elevate the quality of the property but is unsure whether he should make the necessary repairs to let it out again or potentially sell it as is, to make a new investment elsewhere.

Based on the same low and high-impact scenario assumptions used throughout this report, it is estimated that the reforms will likely result in a permanent increase in the average user cost for investors in the Herston area by $39-$125 – equating to a 0.16%-0.53% lift in user cost. The relative increase in the low and high estimates for Herston are slightly lower than for the estimates at the state average because of the higher house prices in the area.

The shift in the housing market due to the reforms over the longer term are expected to lower the median house price in Herston by $193-$625 but leave rents relatively unchanged. For Con, however, the negligible decline in the median value of prices and rents in Herston make little difference to his investment decision.

Con decides to take the opportunity while the property is vacant to make improvements and invest in the property to undertake the necessary repairs. On completing the improvements, Con can re-let the property at a slightly higher rental rate and is satisfied knowing the investment will return a capital gains benefit when he eventually decides to sell, while the new tenants enter a secure, well-maintained rental property at an affordable rental rate for them – benefitting all.

5.3 Effects on the share of owner-occupiers across Queensland

In response to house price and rent adjustments across the market, the share of owner-occupiers also adjusts as the market absorbs the costs of the new reforms and general market dynamics play out.

As property becomes a relatively less attractive investment (despite the impacts being negligible) to investors and purchasing a home becomes a relatively more attractive proposition for renters (marginally), the share of owner-occupiers increases.

The proposed reforms under the low/high scenario changes have a negligible increase in the share of owner-occupiers in the market:

1. **Low scenario –** the share of owner-occupiers is predicted to increase by around 0.018 percentage points over the longer term, up from 62.7% prior to the reforms
2. **High scenario –** the share of owner-occupiers is predicted to increase by around 0.06 percentage points over the longer term, up from 62.7% prior to the reforms.

An illustrative example of how an aggregate change in user cost could impact a decision…

Increasing first-time home buyers

Sharon and Kyle currently rent a 3-bedroom dwelling in Caboolture on the outskirts of greater Brisbane. Sharon works as a casual employee at local retailer, while Kyle works as a forklift driver for a distribution company.

Like other households that rent in Queensland, Kyle and Sharon allocate almost 30% of their gross weekly income to their rental costs.

Their current rental has no major structural problems, but Sharon and Kyle would love to say 'good-bye' to renting and purchase something similar in their neighbourhood before starting a family. Based on the sale price of similar properties in their area, Kyle and Sharon estimate that the value of their current rental is equivalent to median house price for Caboolture – approximately $345,000.

While Kyle and Sharon are not affected directly by the proposed rental reforms, the estimated increase in the average ownership cost (the user cost) for residential property investors in Queensland may indirectly impact on their situation.

Based on the same low and high-impact scenario assumptions used throughout this report, it is estimated that the reforms will likely result in a permanent increase in the average user cost for investors in the Caboolture area by $39-$125 – equating to a 0.37%-1.21% lift in user cost. The relative increase in the low and high estimates for Caboolture is slightly greater than for the estimates at the state average because of the lower house prices in the area.

For Sharon and Kyle, the reforms have a negligible impact on house prices in their area, decreasing by between $185 and $600 (in current prices) over the longer-term as investor demand for properties in the area declines. By contrast, the average rent in the area remains almost unchanged.

While the decline in house prices is modest, Sharon and Kyle seize this opportunity and decide to trade their weekly rent payments for mortgage repayments. After speaking with a mortgage broker and securing a loan, Kyle and Sharon purchase their first home just a few streets over.

Limitations of the analysis

To the extent that every economic modelling exercise is a simplification of reality, it is important to understand the limitations of the analysis:

- The analysis of the impacts on the housing market is informed by existing empirical evidence of relationships across the Australian housing market. Consequently, the analysis implicitly assumes that the Queensland market is representative of the Australian market.
- In addition, the econometric relationships captured in the Australian housing market model are considered at the mean or average. Therefore, analysis of impacts away from the mean at different points in the distribution are likely to under- or over-estimate what might occur.
- The predicated impacts of changes in user cost are better at capturing trends over the longer term, rather than short-run adjustments. Therefore, the short-run predictions may not adequately capture the potential behaviour and 'sentiment' effects that are likely to occur due to information imperfections and irrational decision making.

6 Economic impact of proposed reforms to wider Queensland economy

Chapter 6 summarises the broader economic impact of the proposed policy reforms, due to changes in user cost across Queensland, as measured by changes in GSP, employment and investment.

6.1 Overview

Looking beyond the impacts on Queensland's housing market, this section considers the wider economic impacts across the Queensland economy as a result of the proposed reforms. Specifically, this captures the change in gross regional and state product (GRP and GSP), employment (in terms of full-time equivalent (FTE) jobs), and investment impacts.

The broader economic impacts are also examined using a low/high scenario approach. These low/high scenarios are compared against a 'business as usual' no policy change scenario, in which the reforms do not occur and the user costs for investors remain unchanged. These scenarios draw on the outputs of the previous analysis of the impacts on the rental market, including prices, supply and rents.

6.2 Methodology

The economic impact of the proposed reforms is estimated using the Deloitte Access Economics regional general equilibrium model (DAE-RGEM). Computable general equilibrium (CGE) modelling is the framework that is best suited to modelling the impact of policy changes on the economy.

In this framework, it is possible to account for resourcing constraints and opportunity costs, and to model changes in prices and the behaviour of economic agents in response to changes in the economy, such as a change in user costs and prices in the Queensland rental market.

For the purposes of this report, the DAE-RGEM is modified to explicitly represent the South East Queensland and rest of Queensland regional economies to assess the geographical impacts of such policy scenarios. The model is also modified to separately identify the rental and owner-occupier segments of the property market, along with other key supply chain and related industries such as construction and manufacturing.

Further detail on CGE modelling and the underlying assumptions used to construct the scenarios are included in Appendix E.

6.3 Summary of broader economy-wide results

Deloitte Access Economics estimates that the proposed rental reforms have a negligible impact on the Queensland economy.

Impact on economic activity

At the economy wide level, the proposed reforms are expected to have a negligible impact on the Queensland economy in terms of impact on real GSP. Specifically, the change in real GSP is estimated to be around $4.3-$13.6 million above baseline 'no policy change' levels at 2029 (i.e. the long term).

Over a 20-year period, the cumulative impact of the proposed reforms, in terms of the net present value of GSP (discounted at 7%), is estimated to be $10-$32 million above the baseline – averaging $0.5-$1.6 million per year.

In relative terms, the estimated impacts of the proposed reforms are small in comparison to the size of the economy, and do not have significant flow-on effects through the economy. The relative deviation from the 'no policy change' shows that the Queensland economy is expected to be 0.08%-0.26% larger as a result of the reforms.

While the regional economic impacts are also estimated to be relatively small, South East Queensland is estimated to be more proportionally impacted when compared to the rest of Queensland. This is mainly due to the concentration of housing (both rental and owner-occupied) in South East Queensland, which is expected to account for some 70% of Queensland's population by 2020.[13]

Employment impacts

The aggregate impact on employment due to the reforms is negligible – marginally negative in net terms.

By 2029, aggregate employment in Queensland is expected to settle at 5-17 FTE jobs below the 'no policy change'. When compared against the size of total employment in the Queensland economy - currently over 2.5 million employed persons - the impacts are negligible.

At a regional level, the reduction in aggregate employment is higher in South-East Queensland than for the rest of Queensland as economic activity is greater. Again, however, the employment impacts are negligible when compared against the level of total employment in these regional economies.

Investment impacts

Aggregate investment in Queensland is estimated to grow slightly above the baseline economy as a result of the proposed reforms.

As the relative price of dwellings fall on average (coupled with a modest increase in relative rents) and the share of owner-occupiers in market grows, this generates additional investment across the economy as sectors such as construction expand.

The impact on investment is greatest in the period immediately following the introduction of the reforms settling at $5-$20 million higher than the baseline in 2029. The early spike in investment following the proposed reforms reflects the activity generated as the market adjusts and re-equilibrates.

Appendices

Appendix A: Detailed profile of Queensland's housing market

The broad set of proposed policy changes to Queensland's private rental market will indirectly affect both renters and owner-occupiers. In this context, it is important to understand the size of these different household groups across the state, and the characteristics of the households and people that will be most affected.

According to ABS statistics, in 2017-18, Queensland had a residential housing stock of approximately 1.87 million households, accounting for around 20% of the national housing stock. Of these, 47% were located in the Greater Brisbane area, with the remainder spread across regional Queensland. Table A.1 provides a detailed breakdown of the composition of Queensland's housing market in comparison to Australia for 2017-18.

A.1. Investor activity in the Queensland market

Rentals account for just over one-third of the Queensland housing market, which equates to some 683,500 households. The incidence of renting in Queensland is also slightly greater than the national average.

Table A.1 shows that investor activity in Queensland's housing market is also slightly greater than the national average, with around 30.4% of households owned as private rentals, relative to 27.6% for Australia. This is driven by the higher demand for private rentals in the Greater Brisbane region (32.5%) and lower rates of owner-occupancy (63.6%), in comparison to the rest of Queensland, most likely due to higher house prices and lower affordability.

Although not directly affected by the proposed policy changes, the share of public housing rentals in Queensland (3.4%) is greater than the national average (3.2%), with just over half of public rental households located in the Greater Brisbane region.

Table A.1: **Housing market composition – renters versus owner-occupiers, Queensland and Australia, 2017-18**

	Greater Brisbane	Rest of Queensland	Total Queensland	Australia
Owner-occupiers	63.6%	64.7%	63.6%	67.4%
Total renters	36.4%	35.3%	36.4%	32.6%
Private tenants	32.5%	29.9%	30.4%	27.6%
Public housing	3.9%	3.0%	3.4%	3.2%
Total households	100.0%	100.0%	100.0%	100.0%
Number of households (thousands)	880.1	991.4	1,873.3	9,270.4
% share of Australia	9.5%	10.7%	20.2%	100.0%

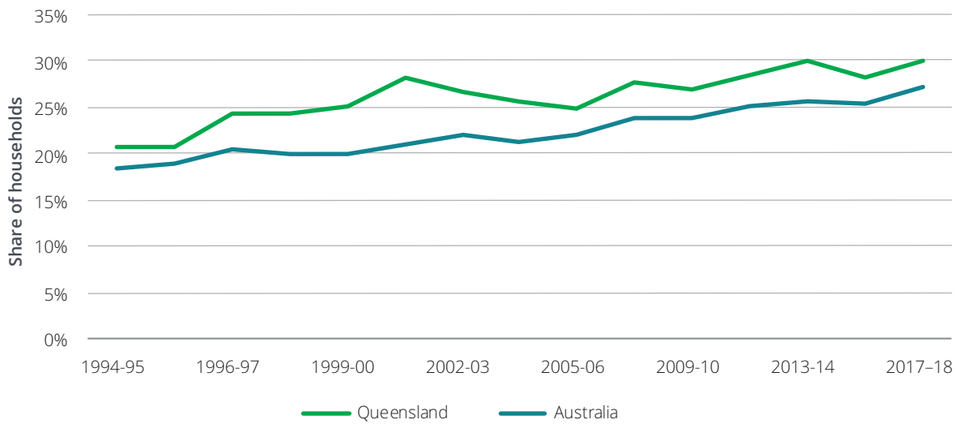
Source: ABS[14]; Deloitte Access Economics

Investor activity in Queensland's housing market has also been increasing over time. Figure A.1 shows that the share of private rentals in Queensland have risen steadily from just over 20% in 1994-95 to around 30% in 2017-18. The trend away from owner-occupancy toward renting is in line with a broader national trend. However, higher rates of investor activity have been persistent characteristics of Queensland's residential housing market over time, with the share of private rentals in Queensland's housing market consistently exceeding the national average by around 2 to 7 percentage points.

Regional distribution of rental properties

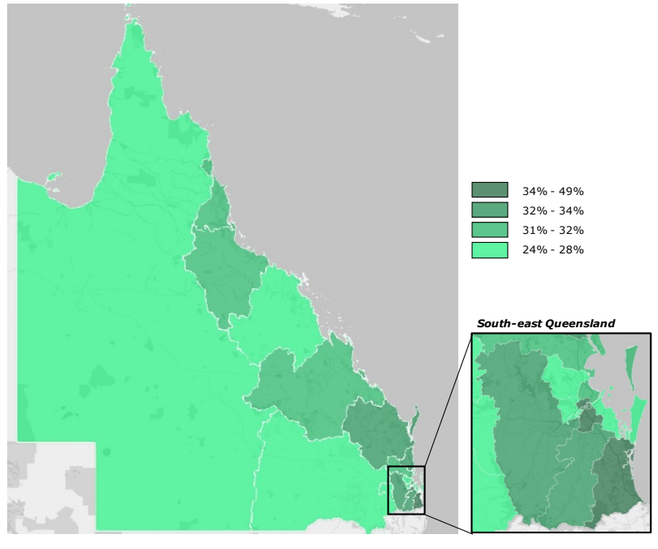
Across Queensland, the regional distribution of residential investment properties corresponds to the key population centres. Figure A.2 illustrates the geographic distribution of private rental properties across Queensland (at the SA4 level) in 2016. As Figure A.3 shows, the highest proportions of residential investment properties are located in the areas nearest to Brisbane, as well as those located in South-East Queensland, such as the Gold Coast.

Figure A.1: **Private rental market – Queensland and Australia, 1994-2018**



Source: ABS[15]; Deloitte Access Economics

Figure A.2: **Heatmap of private rental properties across Queensland (SA4 level), 2016**



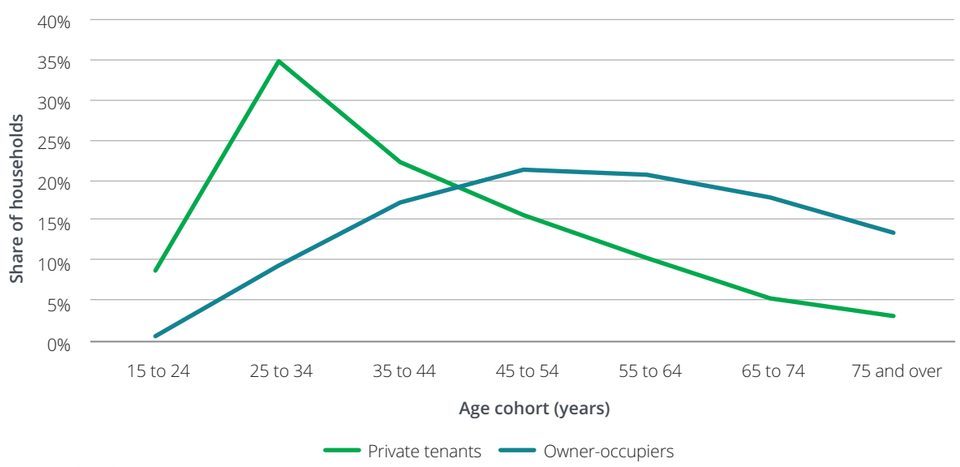
A.2. Profiles of owner-occupiers and renters

There are key features that distinguish renters and private rental households from owner-occupiers. At the national level, private renters are distinguished by their youth. Figure A.3 shows that in Australia in 2017-18, 35% of private tenants were aged 25-34 years. By comparison, the majority of owner-occupiers (42%) were aged between 45-64 years.

Another distinguishing feature of renting is the dwelling structure. Where owner-occupiers purchase parcels of land or standalone houses, renters occupy higher-density dwellings such as semi-detached, row or terrace houses, as well as flats or apartments Figure A.4 shows that for Australia in 2017-18, 88% of owner-occupier households were standalone properties; whereas, 45% of private rentals were higher density dwelling types.

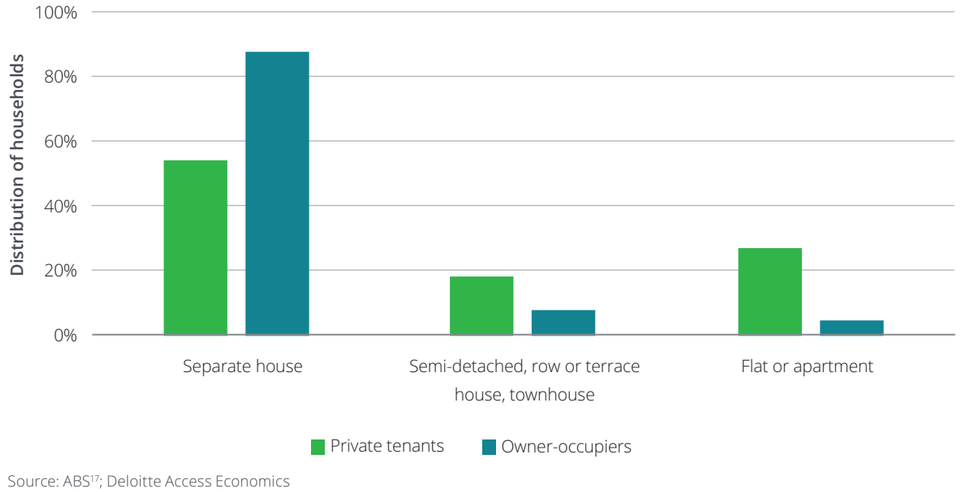
Although these characteristics are limited to the national level due to data constraints, it is expected that the Queensland market would broadly share the same trends.

Figure A.3: **Age distributions for private renters and owner-occupiers – Australia, 2017-18**



Source: ABS[16], Deloitte Access Economics

Figure A.4: **Distributions of dwelling structures for rental properties and owner-occupier households – Australia, 2017-18**



Source: ABS[17]; Deloitte Access Economics

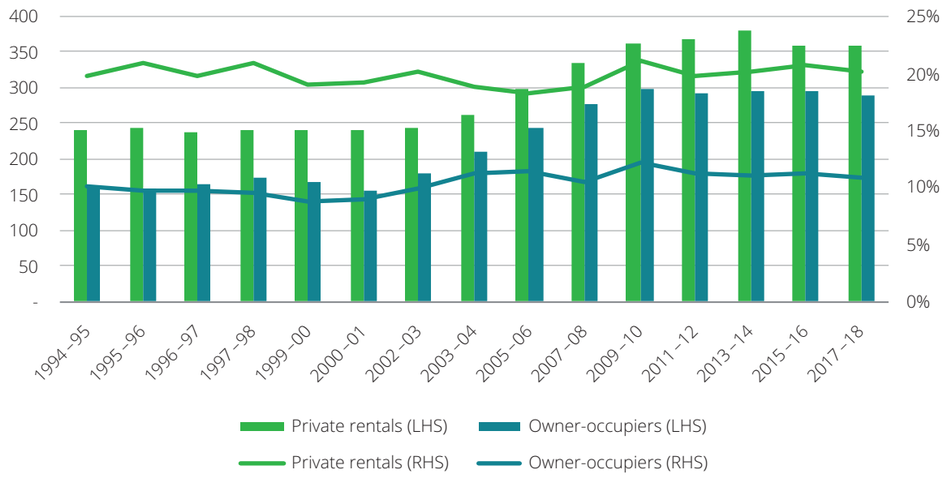
The relative costs of owning and renting

In Queensland, renters typically experience higher housing costs in comparison to owner-occupiers; a trend that has remained consistent over time. Figure A.5 shows the average weekly housing costs (in nominal $ terms) for both private renters and owner-occupiers over time, as well as the respective share of these costs proportionate to disposable income.

Not only is it the case that private tenants spend more per week in dollar value terms (approximately $359 per week on average), they also commit a greater proportion of their disposable income to rent. Figure A.5 shows that renters of private dwellings, in Queensland in 2017-18, typically spent 20% of their disposable income on rent. This is almost double the share of income allocated to the costs of housing by owner-occupiers – approximately 11% in 2017-18.

The lower cost of housing faced by owner-occupiers is partially explained by the share of owner-occupiers without mortgage repayments – approximately 44% of owner-occupier households in 2017-18. Mortgage-free owner-occupiers have significantly lower housing costs ($54 per week on average), in comparison to mortgaged owner-occupiers ($474 per week on average). However, even owner-occupiers facing mortgage repayments spent relatively less of their disposable income on housing costs than the average renter. In 2017-18, for example, mortgaged owner-occupiers in Queensland typically allocated 16% of their disposable income to repayments and other housing costs.

Figure A.5: **Average housing costs for private tenants and owner-occupiers – Queensland, 1994-95 to 2017-18**



Source: ABS[18]; Deloitte Access Economics

The prevalence of renting among low-income households

Another characteristic associated with rental properties in Queensland is the higher proportion of low-income households (i.e. households in the bottom 40th percentile of incomes for Australian households). Figure A.6 shows that over half of the households renting in Queensland, in 2017-18, were low-income households. By comparison, only 35% of owner-occupier households were low-income.

This also partially explains why the relative housing costs for renters in Queensland is so much greater than for owner-occupiers. While the average weekly rent is comparable to the average weekly housing costs for owner-occupiers (and less when compared against the average weekly costs for mortgaged owner-occupiers), the higher proportion of low-income households that rent means that a larger share of disposable income is allocated to rent - the cost of renting is relatively higher and any additional pressures on rents will be most acute for this low-income cohort.

Figure A.6: **Shares of low-income and high-income households by housing ownership status – Queensland and Australia, 2017-18**

Notes: Low-income households are those that fall in bottom 40th percentile of Australian household incomes.

Source: ABS[19], Deloitte Access Economics

A.3. Quality of the private rental stock

There are a number of studies that have considered the quality of the housing stock in Australia. A summary of the key findings from notable studies is compiled in Table 4.2. This highlights indicatively that between 3.5% and 12% of properties require some form of repair or maintenance.

Table A.2: **Summary of notable studies considering the housing quality**

Study	Key findings
Baker et al., 2019	Across New South Wales, Victoria and South Australia, the percentage of rental properties requiring essential and urgent repairs is 3.5%. The corresponding figures for properties owned with a mortgage and outright are 1.9% and 0.7% respectively.
Rowley and James, 2018	The proportion of private rental properties in poor or terrible condition in Australia is 6%.
CHOICE et al., 2017	The percentage of rental properties in need of urgent repair in Australia is 8%.
ARTD Consultants, 2019	The proportion of rental properties in Queensland in need of repairs or maintenance is 12%.
Liu et al., 2019	Structural problems tend to be higher among low-income households.

Source: Baker et al., 2019; Rowley and James, 2018; CHOICE et al., 2017; ARTD Consultants, 2019; Liu et al., 2019

Appendix B: The economics of housing markets

B.1. Understanding changes in user cost in the housing market

The proposed changes to the regulations governing Queensland's private rental market have the potential to change the cost of home ownership to investors in Queensland. The proposed changes could increase costs through two sources – the costs associated with administering a rental property, and the costs associated with maintaining rental properties to a minimum standard of quality.

Unlike most other market structures, however, the economics of housing markets are more complex, with relationships that extend beyond renters and investors. While a change in the cost of ownership for a property investor may affect their decision to buy and sell property, it also has an impact on market dynamics that effect all other housing market participants – renters, owner-occupiers, real-estate professionals, and residential property developers and construction workers.

B.2. User cost

Residential housing markets are complicated because of the nature of housing itself. Housing is a commodity that is both consumed by renters and owner-occupiers, and an asset class that attracts investors (as landlords).

Housing markets have numerous inter-relationships and market dynamics that incorporate the supply and demand preferences of various stakeholders, which are communicated through both housing purchase prices (for investors and owner-occupiers) and rental prices (for investors and renters).

An economic framework for understanding these complex inter-related dynamics within housing markets is the concept of 'user cost'.[20] The concept of user cost for each property captures:

- Depreciation, maintenance, administration and transaction costs
- Mortgage interest payments
- The opportunity cost of holding equity in housing
- Expected annual capital gains (which reduce the user cost)
- Property specific taxes (e.g. land tax and stamp duties) and other unique tax arrangements (e.g. negative gearing and capital gains tax discounts).

People decide whether to rent or buy a property on the basis of weighing up the relative costs and benefits of each. In a perfect world, the price of a property equals the potential rental income, such that the cost of ownership is equal to the cost of renting – essentially defining their 'user cost'.

User cost is typically expressed relative (%) to the price of the housing asset. Where:

Price × User Cost=Rent (1)

When homeowner's user cost increases, the price (left-hand side of equation (1)) becomes greater than user cost (the right-hand side) in the short-run, and households have an incentive to rent instead of owning a property. By contrast, when user costs decrease, households have an incentive to buy property rather than rent.

Over time, this relationship plays out in the housing market – influencing the supply and demand of housing, and the price.

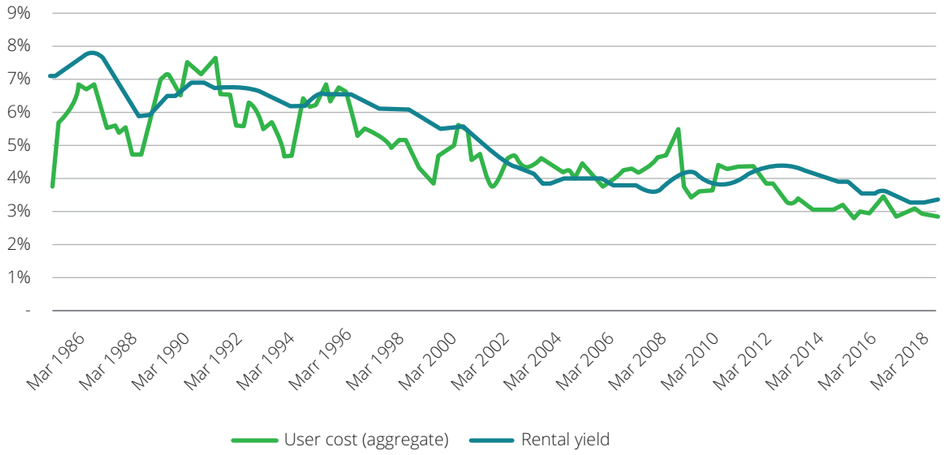
For Australia, Deloitte Access Economics (2019) has provided descriptive evidence showing the close long-term relationship between historical user costs and rental yields – Figure B.1.[21] This shows the relationship play out between user cost and rental yield in the long run.

Further, these relationships continue to hold when there is a change in user cost that only affects property investors (rather than all households). However, the price and rent adjustments are not limited to investment properties – all residential properties in the market are affected.

As detailed in recent studies of the Australian housing market by Deloitte Access Economics (2019) and Stapledon (2016), a policy change increasing the user costs to investors (but not owner-occupiers) delivers an increased net advantage to owner-occupiers but results in an increased user cost to all homeowners.

As detailed in recent studies of the Australian housing market by Deloitte Access Economics (2019) and Stapledon (2016), a policy change increasing the user costs to investors (but not owner-occupiers) delivers an increased net advantage to owner-occupiers but results in an increased user cost to all homeowners.[22]

Figure B.1: **The long run relationship between user costs and rental yields in Australia, 1986-2018**



Source: Deloitte Access Economics (2019), pp.41

B.3. Relationships that drive housing market dynamics

How a change in user costs to investors, due to a change in policy, impacts on the entire housing market is dependent on the direction of the relationships between prices, rents, and housing supply. These relationships are defined through two separate markets: housing services, and housing investment.

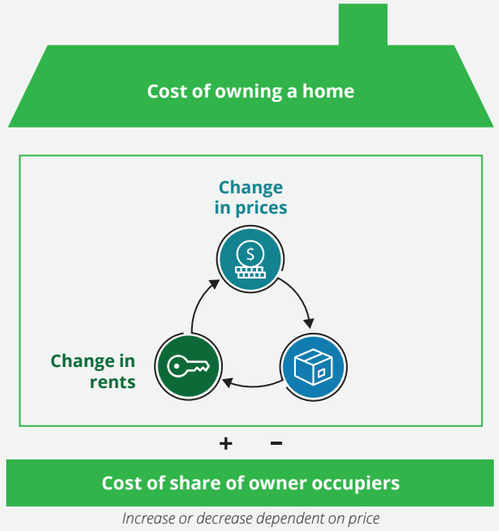
House prices balance the supply and demand for housing as an investment, while rental prices balance the supply and demand for housing services.[23] The relationship between market clearing rents and market clearing prices differs.

As Deloitte Access Economics (2019) outlines, the direction of these relationships are as follows:

- **User cost directly impacts house prices.** User cost is a determining factor in the purchase of houses for both owner-occupiers and investors. Owner-occupiers trade off the costs and benefits of renting as compared to home ownership; while investors purchase based on their rate of return from an investment property, which is a function of rental yield and user cost. User cost only impacts rents and housing supply through its relationship with prices.
- **Prices directly impact on housing supply.** In a given period, fluctuations in house prices directly impact on the quantity demanded for property, which, over time, triggers an equilibrating supply response. In the short-term, house price fluctuations do not directly impact rents. Over time, however, house prices indirectly affect rents to the extent that prices impact supply. For example, in the absence of a change in housing demand, a sudden decrease in price will increase the quantity of housing demanded in the short-term. Over time this triggers an increased supply response, placing downward pressure on rents.
- **Housing supply has an impacts on rents.** The extent to which changes in total housing supply then impact rents is determined by the amount of excess housing stock.[24] A decrease in new housing construction over time, for example, reduces the level of excess stock available, placing upward pressure on rents.
- **Rent directly impacts house prices.** Because rent is a benefit to the owner of a house (as income or an 'imputed' saving), increases in the value of rents increase the value of owning a property compared to other investments for investors. Likewise, it increases the value of not renting for owner-occupiers.

Figure B.2 illustrates the direction of the relationships between prices, rents, and supply. As shown, the inter-related nature between the housing services and housing investment markets means that a price adjustment in the investment market, due to a change in user cost, ultimately leads to an adjustment in rents and a rebalancing of the housing services market. As part of this process, adjustments in the market clearing prices and rents also adjust the share of owner-occupiers (as opposed to renters) in the market.

Figure B.2: **Relationships that drive market dynamics**



Summary of relationships for an increase in user cost:

- An increase in user cost, flows through to a decrease in property prices
- This results in less housing supply, reducing the availability of *excess stock*
- Reduced supply means there is less availability of rental properties, resulting in higher rents (all else being equal)
- Higher rents, combined with lower house prices, increases rental returns
- The share of owner-occupiers increases, as investors withdraw and renters purchase houses instead

Noting, the estimated change in total user cost is an aggregate result and not every property would reasonably be impacted by the proposed reforms.

Source: Deloitte Access Economics (2019), pp.41

B.4. Implications of increased user costs for the broader housing market

Deloitte Access Economics (2019) and Stapledon (2016) summarise the theoretical implications that flow through the broader housing market due to increases in the user costs for investors – in terms of house prices, rents, quantity supplied, and the share of owner-occupiers. Policy changes that increase investors' user costs can be expected to:

- Place downward pressure on prices
- Place upward pressure on rents
- Slow the growth in housing supply
- Increase the proportion of owner-occupiers relative to investors.

A simple economic explainer of these implications using demand and supply charts is further detailed in the pullout box below.

Understanding the implications of increased user costs in terms of supply and demand

As Deloitte Access Economics' (2019) study of the Australian housing market describes, increasing user costs for investors will lead to supply and demand responses across the housing market that result in house price and rent adjustments.

Figure B.3 illustrates supply and demand diagrams for the different aspects of the housing market.

The first diagram illustrates the housing demand profile for investors and shows the impact of an increase in user costs (and the equivalent reduction in returns) on investor demand – a contraction in demand.

The second diagram illustrates the housing demand profile for owner-occupiers, which remains unchanged as a result of the policy change.

The third diagram illustrates the change in demand for the whole housing market (grey line), aggregating the change in demand preferences of both investors (green line) and owner-occupiers (blue line). The final diagram illustrates the subsequent impact on the rental market that results due to changes in investor demand and to the supply of rental housing.

As shown, an increase in user costs for investors decreases the demand for housing as the expected returns on investment property declines relative to other asset classes. This lowers the price investors are willing to pay, resulting in an inward shift in demand and a decrease in the quantity of housing demanded.

As house prices decrease, the quantity demanded by owner-occupiers increase. Although the user costs for owner-occupiers are not directly affected by the policy changes, falling house prices (driven by falling investor demand) indirectly increases the quantity demand by owner-occupiers – resulting from a shift along the owner-occupier demand curve.

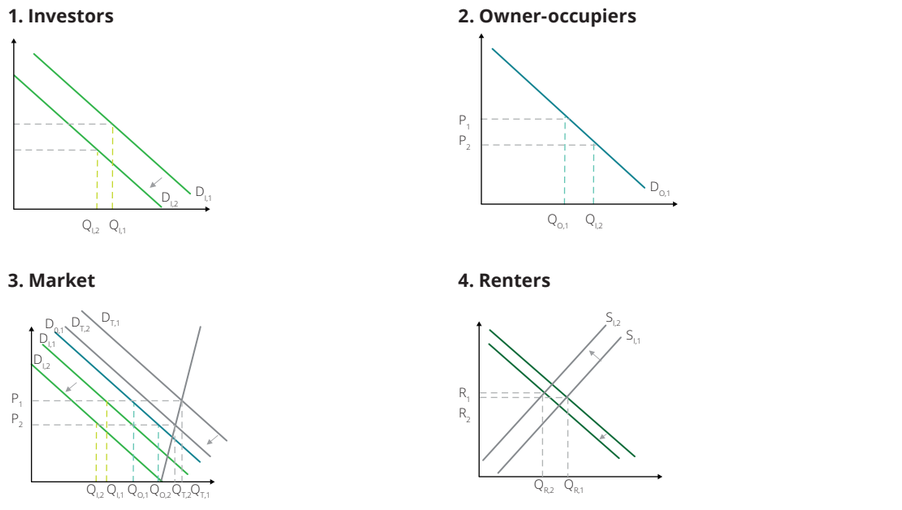
For the housing market as a whole, the combined demand response of both investors and owner-occupiers is an inward shift in total demand, corresponding to the fall in investor demand and the fall in prices (P_1 to P_2). At this new lower price, the quantity of dwellings supplied is lower (Q_T2 rather than Q_T1).

The quantity of housing consumed by owner-occupiers rises and the quantity consumed by investors falls. In this example, the reduction in housing purchased by investors is greater than the increase in housing purchased by owner-occupiers.

Finally, the reduction in demand by investors leads to an equivalent reduction in supply of rental housing.

As the supply of rental properties shift inwards (due to falling investor demand), the demand for rental properties also shifts inwards as some renters become homeowners in response to falling house prices. In this example, the fall in demand is smaller than the reduction in supply, placing upward pressure on rents.

Figure B.3: **Housing market supply and demand responses to an increase in user costs for investors**



Source: Deloitte Access Economics (2019), pp.34

B.5. The importance of demand and supply elasticities

An important caveat to the expected price, rent, and supply outcomes that result from a change in user costs, depend on the elasticities of supply and demanded. The understanding of supply elasticity, in particular, is important to determining the likely effect of the policy changes on prices and rents.

In circumstances where housing supply is perfectly inelastic (i.e. a vertical supply curve), there is no change to the total quantity of dwellings supplied in response to a fall in house price. That is, the fall in the quantity demanded by investors is equal to the increase in quantity demand by owner-occupiers. In the rental market, there is no change in rents as supply and demand fall by the same amount. As a result, the total impact from an increase in user cost for investors occurs through lower prices with no effect on rents.

Conversely, in circumstances where housing supply is perfectly elastic (i.e. horizontal supply curve), there will be no change in prices and the market adjustment occurs entirely through higher rents.

In Australia, the evidence suggests that housing supply is relatively inelastic – i.e. supply increases by less 1% in response to a 1% increase in prices. This evidence also suggests that the supply of houses is more inelastic than for apartments. Ong et al (2017), for example, using data on building approvals at the LGA level, estimate a long run elasticity of 0.05 to 0.09.[25] Similarly, Saunders and Tulip (2019) estimate a long run supply elasticity of 0.07, although find that apartment commencements respond more to changes in price than detached housing.[26]

As a result, a change to user costs for investors is likely to have a greater impact on prices than on rents.

B.6. Empirical models of the Australian housing market

There are numerous empirical studies that adopt a user cost approach to model housing markets. Examples of recent Australian studies include Otto (2007), Saunders and Tulip (2019) and Deloitte Access Economics (2019); examples of overseas studies include Duca, Muellbauer and Murphy (2011), Glaeser and Nathanson (2014), Oxford Economics (2016).[27] These primarily focus on the impact of tax policy changes or the impact of changes in economic and financing conditions. There is almost no empirical research examining the impact of regulatory changes governing the housing rental market on user costs and the broader housing market.

These studies do, however, undertake partial-equilibrium econometric analysis to estimate the impact of changes in user costs on house prices and rents. Results from these studies provide an understanding of the inter-relationships between prices, rents and housing supply, and of the supply and demand elasticities in the housing market.

The findings of these studies are instructive in seeking to estimate the impact on the Queensland property market from changes to user cost arising from the proposed policy changes.

B.7. Summary of relationships

For Australia, the recent studies Saunders and Tulip (2019) and Deloitte Access Economics (2019) undertake comprehensive econometric modelling of the Australian housing market. Both studies estimate detailed measures of user cost over time, and then model the underlying housing market relationships. The key relationships include:

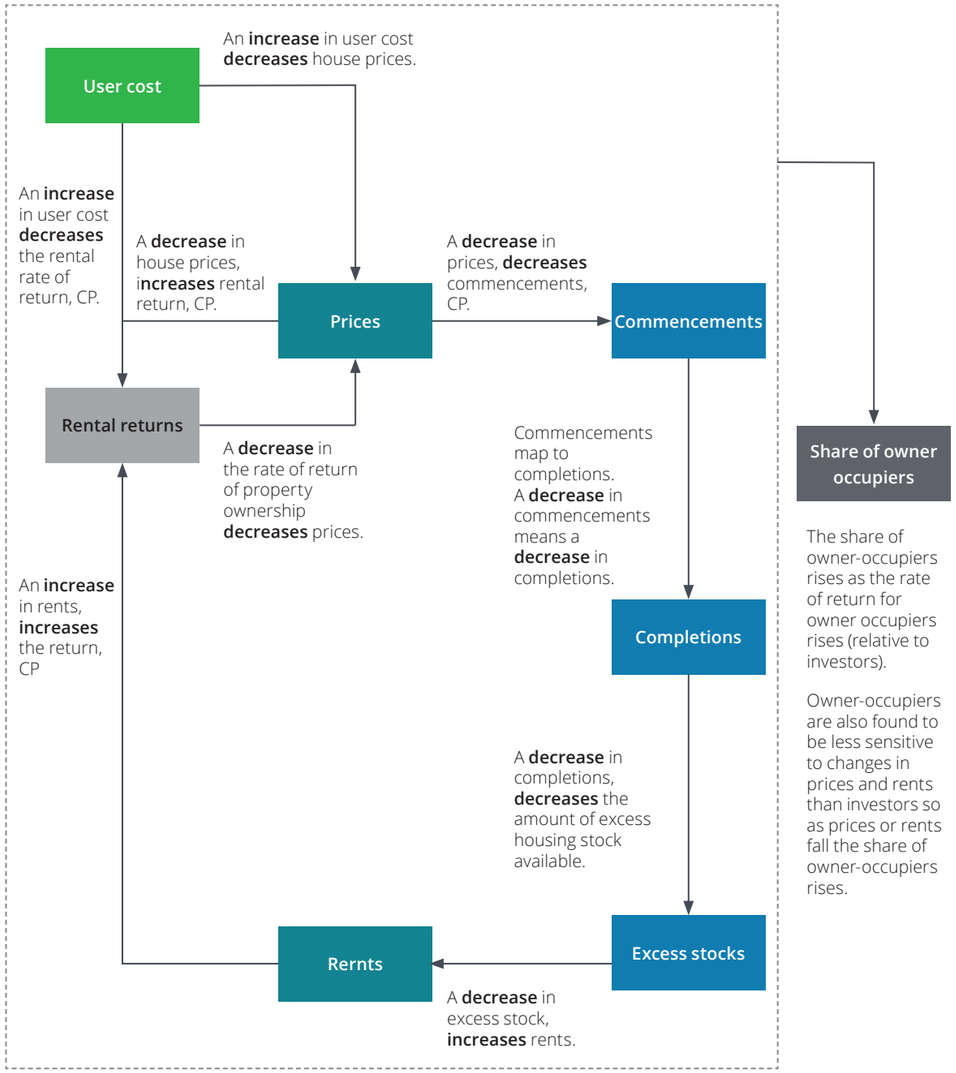
- The effect on house prices or house price growth
- The effect on 'slack' in the housing market, either through changes in vacancy rates or through changes to excess stock (the difference between commencements and completions)
- The effect on rent prices
- The effect on the change in the share of owner-occupiers (or, conversely, the shift of renters to homeowners).

The Deloitte Access Economics (2019) study draws heavily on the method set out in Saunders and Tulip (2019). As a result, the estimations and key findings of the two studies are very similar. Broadly, both studies find that:

- An increase in user cost, flows through to a decrease in prices.
- This results in a contraction in the housing supply, reducing the availability of excess stock.
- A tightening in supply constrains the availability of rental properties, resulting in higher rents.
- Higher rents, combined with lower house prices, increases rental returns.
- The share of owner-occupiers increases, as investors withdraw and renters purchase houses.

Figure B.4 provides an overview of the flow and direction of relationships identified in the Saunders and Tulip (2019) and Deloitte Access Economics (2019).

Figure B.4 **Summary of the relationships estimated from the econometric modelling**



Source: Deloitte Access Economics (2019), pp.46

Over time, these relationships dynamically respond to each other, based on the persistence of prices, rents and supply in the market. Using the estimated results from the econometric modelling undertaken in Deloitte Access Economics (2019), it is possible to calculate the short and long-run effects on prices and rents arising from a 1 per cent increase in user costs for investors. Figure B.5 illustrates how house prices, rents, and the share of owner-occupiers dynamically adjust over a 10-year period to a permanent 1% increase in user costs for investors, respectively.

Figure B.6 shows that a permanent increase in user costs for investors places downward pressure on house prices, eventually culminating in an approximate -0.13% decline over the longer-term. In the short-term, prices adjust sharply within the first year, but then quickly stabilise with the short-run effects diminishing toward zero by year four. It is also important to note that the price adjustment is relatively small.

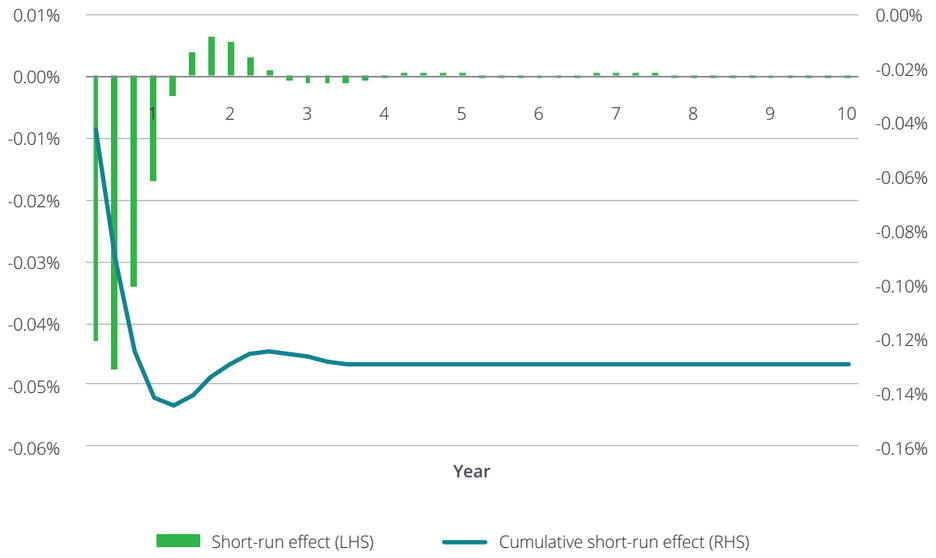
Conversely, Figure B.2 shows how rents adjust in response to falling prices reducing the excess housing stock in the market. In the year following the user cost increase, rents experience an almost 0.08% increase before the short-run effects stabilise in year three, and then diminish toward zero by year six as the market completes its adjustment.

In the long-run, rents permanently increase by around 0.024% - a very small adjustment in comparison to the impact on house prices. This reflects the inelasticity of housing supply in Australia (discussed earlier).

Figure B.7 shows the adjustment in the share of owner-occupiers that occurs in response to decreasing house prices and increasing rents. A permanent increase in user costs to investors makes owning a home relatively more attractive. In the short-run, the effect on the share of owner-occupiers increases sharply in response to falling prices. The increasing short-run effect diminishes quickly in year two, and stabilises to zero by year four. In the long-run, the share of owner-occupiers increases by 0.11%. This is a marginal change, reflecting the shift in renters to homeowners that was most likely to occur in any event – i.e. their decision to purchase a home was brought forward.

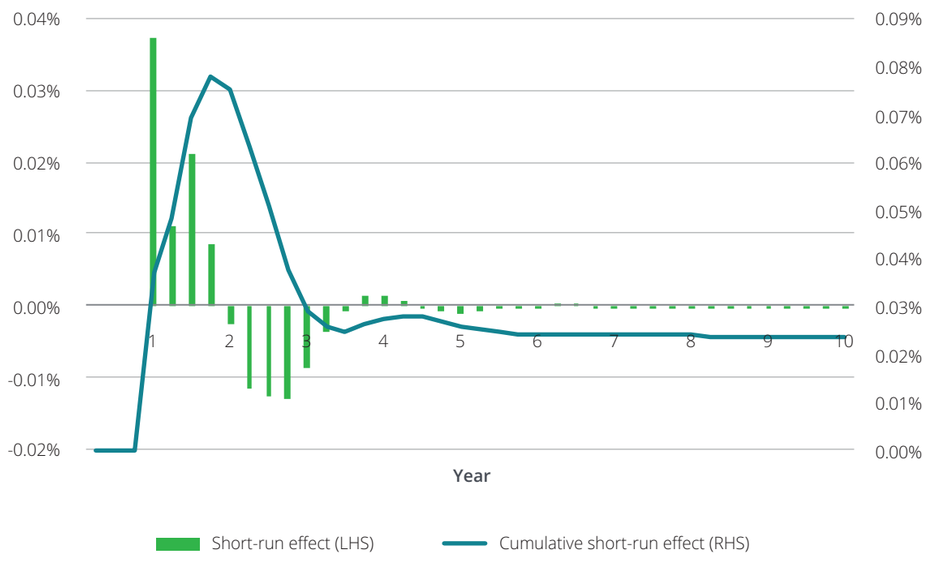
We use these estimated effects to inform our analysis of the impacts on the Queensland housing market from an increase in user costs to investors arising from the proposed policy change – explored in section 5.

Figure B.5: **Short and long-run effects on house prices (in relative terms, %) for a 1% increase in user cost for investors**



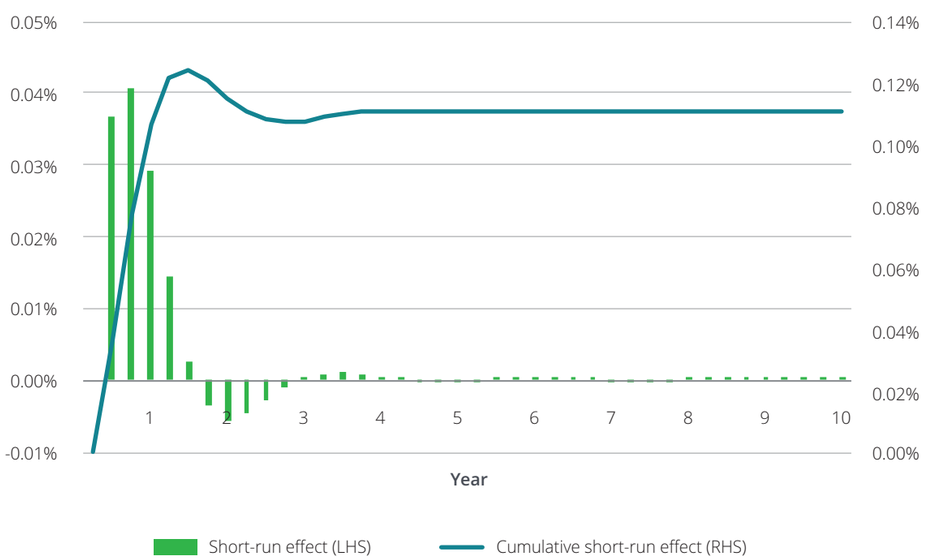
Source: Deloitte Access Economics

Figure B.6: **Short and long-run effects on rents (in relative terms, %) for a 1% increase in user cost for investors**



Source: Deloitte Access Economics

Figure B.7: **Short and long-run effects on share of owner-occupiers for a 1% increase in user cost for investors**



Source: Deloitte Access Economics

Appendix C: Proposed rental reforms in Queensland

C.1. Broader context and the need for reform

There has been a shift towards renting over the past couple of decades. In 1994-95, 26.8% of Queensland households were renting, while in 2017-18, this portion has increased to 35.9%.[28] This demonstrates a change in the nature of the housing market, with a growing proportion of people opting to rent rather than buy.

Despite this trend, tenancy laws have not adapted, largely remaining the same over the period. The proposed reforms aim to improve protections for tenants while safeguarding property owner's interests and improving housing stability in the Queensland rental market.

Queensland is not the only state exposed to this challenge. Victoria, for example, has experienced a similar increase in households choosing to rent and have recently proposed a range of rental market reforms, many of which have passed to law in Victoria through the Residential Tenancies Amendment Bill 2018. The reforms are similar to those proposed in Queensland, banning no-fault evictions, providing added protections for tenants regarding housing quality, allowing tenants to make minor modifications, allowing for pets, as well as other reforms relating to rent increases, bond repayments, and more.[29] They are set to be fully implemented by July 2020.

Similar changes are also to be implemented in March 2020 in New South Wales,[30] and Western Australia has also begun to review its tenancy laws.[31] This indicates that the proposed changes to rental laws in Queensland are a part of a wider national trend towards modernising and ensuring laws are fit-for-purpose in 2020.

C.2. Objectives of the reforms

The objectives of the proposed reforms are to modernise laws around the rental market to improve protections, accountability and housing conditions, and in doing so, improve the stability of the rental housing market. The reforms are broken down into three objectives:

1. Safety and security to ensure rental accommodation is safe, secure and functional;
2. Managing tenancies to ensure existing tenancy rights are enforced without fear; and
3. Renting with pets to improve access to pet friendly rental accommodation.

The first of these objectives is attached to three reforms which are built to improve the safety, security and functionality of rental accommodation and provide protections and rights for those experiencing domestic and family violence, as well as those less physically able or with children.

The second of these objectives is attached to one reform, designed to improve the bargaining power of tenants in order to provide more secure accommodation while also empowering them request repairs, maintenance and other services without fear of losing tenancy.

The final objective includes one further reform designed to increase the scope by which tenants can keep pets, allowing them to be more in line with those who own houses.

These reforms were developed alongside feedback from the Open Doors to Renting Reform consultation program, which attracted responses from more than 135,000 people. Feedback was also sought on the consultation Regulatory Impact Statement.

The reforms ultimately seek to strike a balance: measures which protect the rights of tenants, while ensuring the rights of owners are equally not infringed. This balance then provides for security and stability in Queensland's private rental market overtime.

C.3. Proposed reforms

In recognition of the growing number of Queenslanders who rent, the proposed reforms of the Residential Tenancies and Rooming Accommodation (RTRA) Act 2008 have been introduced to improve the living experiences of this group based on the community feedback process. This first stage of reforms is built to introduce immediate changes, with a second stage intended to build upon foundations laid in the first stage – incremental step changes.

The reforms propose changes to the rental property market in order to: improve the safety and security standards to which rental accommodation must reach; better enforce current tenancy rights; and improve access to pet-friendly rental accommodation. To meet these objectives, five reforms have been proposed:

- Safety and security: housing quality and minimum housing standards, domestic and family violence protections, minor modifications
- Managing tenancies
- Renting with pets

C.3.1. Safety and Security

Housing quality and minimum housing standards

The Queensland Government's objectives are to ensure the safety, security and functionality of rental accommodation, as well as to enforce existing tenancy rights to repairs and maintenance. To maintain these objectives, the proposed reforms suggest implementing minimum housing standards for rental accommodation and restrictions on the requirements for approval to undertake repairs and maintenance. In practice, this means rental accommodation will be required to meet set safety and security standards, including: weatherproof and structurally sound; the standard of repair of fixtures and fittings; control of pests and vermin; security of windows and doors; and window coverings for privacy.

Additionally, functionality standards are proposed to be applied to ensure adequacy of plumbing and drainage; supply of clean hot and cold water; bathroom facilities; and cooking and food preparation facilities where provided. Regarding emergency repairs, the proposed reforms suggest that a property owner should provide contact information for a representative and nominated repairers to streamline the process, and accessible funds with which tenants can organise these repairs should increase from two weeks' rent to four weeks' rent. These changes would be enforced by QCAT, which would facilitate tenant requests where necessary and restrict/penalise property owners for failing to meet these new requirements in a timely way.

C.3.2. Domestic and family violence protections

In lieu of the Not Now, Not Ever: Putting an End to Domestic and Family Violence in Queensland report, the Queensland Government is committed to addressing problems of domestic violence wherever they appear, and to address the problem in rental accommodation, the reforms propose that additional protections should be awarded to tenants experiencing domestic and family violence (DFV). The reforms propose that if the tenant experiencing DFV provides evidence, they can end their tenancy with seven days' notice, meaning once this type of notice is given, they are obligated to pay no more than an additional seven days' worth of rent. Co-tenants would then have seven days to decide whether to continue or terminate their tenancy, at which point they must give twenty-one days' notice. Additionally, it is proposed that the process by which the tenant can receive their portion of the bond be amended to allow for access through an urgent request with QCAT. In this case, the property owner could request remaining tenants make supplementary bond payments to minimise the effect on the property owner. Finally, grounds have been proposed by which DFV victims can make minor modifications, as discussed below.

C.3.3. Minor modifications

Some groups of individuals have additional needs to the wider population; for example, an elderly person may require handholds to get around a house, while a family with young children may require safety locks. To facilitate these extra requirements, the reforms propose that additional mechanisms should be implemented through which minor modifications can be made to rental accommodation. Defining minor modifications broadly as 'alterations which are reversible and do not require local council approval', the reforms propose four categories of minor modifications.

- **Emergency modifications required to prevent DFV:** these can be made immediately to ensure the security of an individual. An example of what fits this category is changing the locks of a house, and the only requirement from the tenant is that they inform the owner and provide keys/access codes where required.
- **Essential minor health, safety, security and accessibility mods:** tenant requests for this category must be responded to within seven days or else owner consent is assumed, and examples include furniture anchors, child safety gates and non-slip surfaces.
- **Other health, safety, security and accessibility mods:** tenant requests for this category must be responded to within fourteen days or else owner consent is assumed, and examples include grab rails, accessibility ramps and adjustable benchtops.
- **Minor amenity and personalisation modifications:** tenant requests for this category must be responded to within twenty-eight days or else owner consent is assumed, and examples include window coverings, hanging pictures and efficiency modifications.

For all but the first category, refusal can be provided, though it must be justified on reasonable grounds. However, owners can request that these modifications be carried out alongside reasonable conditions, such as that they be made by a qualified tradesperson where required. At the conclusion of tenancy, all minor modifications would be required to be reversed by the tenant as requested by the property owner.

C.3.4. Managing tenancies

Through the feedback received via the consultations, a range of issues regarding the management of tenancies were exposed to the Queensland Government. Policy options have been investigated to allow tenancies to be ended fairly and with reasonable and workable notice, where tenants are supported in enforcing their rights without fear of retaliation, and uncertainties around tenancy can be alleviated. The proposed reforms will change the RTRA to no longer allow property owners to end tenancies without a given reason, instead providing a list of reasons with which property owners are justified in doing so. Justifications range from family living arrangements through to development, repair and sale of property, among a list of other grounds. Additionally, tenants must be given at least six weeks' notice when a tenancy is set to be terminated.

Additional reasons for tenants to end a tenancy are also proposed, including: the rental property is not in good repair, is unfit for human habitation, or does not comply with Minimum Housing Standards; the property owner has not complied with a QCAT Repair Order to undertake repair or maintenance of the rental property within the specified time; a person is escaping domestic and family violence; as well as if a co-tenant is deceased. Additional reasons by which the Queensland Government can end tenancies of Queensland Government owned rental properties are also proposed. This ultimately prescribes the flexibility and control with which property owners can operate in the rental market, while improving the security of tenants and reducing costs associated with changing accommodation.

C.3.5. Renting with pets

While nearly six out of ten Queensland households have pets, very few rental properties are pet-friendly, largely due to the freedom with which property owners can govern these rules on their property. These reforms propose improving information communication about pets between tenants and property owners as well as amending the RTRA Act to require that property owners have legitimate reason for refusing a tenant's pet, and that property owners must obtain an official tribunal order to entirely exclude pets from their property.

Tenant requests for pets must be responded to within fourteen days or the owner's consent is assumed, and the owner can suggest reasonable conditions, such as pets staying outside or that tenants pay for professional pest control and carpet cleaning at the conclusion of their tenancy.

Acceptable reasons for property owners to refuse the keeping of pets include: unacceptable risks to the condition of the property or to health and safety; rental property is unsuitable for the type of pet; keeping a pet would contravene a law or managed community by-law or rule; or tenants do not agree to reasonable conditions proposed by owner. Importantly, any household damage as a result of pets is not considered wear and tear, so must be paid for by the tenant.

C.4. Key stakeholders

The suite of proposed reforms described above will impact a range of different stakeholders, in a range of different ways, summarised below.

C.4.1. Tenants

Within the tenant demographic exists a broad spectrum of groups, comprising of young people, families, low-income households, regional residents, and vulnerable individuals. These reforms will rebalance power within the rental market as each proposed policy addresses and alleviates a different problem experienced by tenants.

The proposed minimum housing standards improves the quality of dwellings, thereby improving the standard of living of tenants. DFV protections provide for improved ease by which affected tenants can escape dangerous personal environments. The minor modifications and renting with pets policies both empower tenants to turn their accommodation into their homes. Finally, the managing tenancies reform shifts bargaining power more in favour of tenants by reinforcing the rights they were already intended to have, such that they can be more secure in their housing.

For tenants, these reforms are likely accompanied by increased time spent liaising with the property owner, as well as increased financial costs required in order to exercise the additional tenant rights. Noting, where owners feel they can pass on a perceived or real cost increase, this may cause rental accommodation to increase in price. However, despite these potential costs, the overall impacts of these reforms are expected to significantly benefit tenants.

C.4.2. Property owners

On balance, the reforms lead to property owners maintaining less autonomy over their leased houses. The reforms offer a rebalancing of owner autonomy with tenant's rights. As part of this rebalancing, there may be additional time spent in communication with tenants regarding minor modifications and repairs.

For some owners, reforms will make leasing houses a more expensive process due to the requirement to meet minimum housing standards and the requirement to pay for safeguards such as preventing pets from being in their houses or minor modifications – noting that owners may have scope to receive tax deductions when meeting these requirements.

Some costs, such as those incurred through minor modifications and pet ownership, will be offset with bonds and/or financial safeguards put in place by the policies. Additionally, with clearer expectations of tenant and property owner costs, it is expected that expenses can be better planned, and the increased security and housing standards are expected to improve revenue streams for property owners as tenants stay longer. The overall impact of these reforms on property owners may be costly for them if significant compliance is required, however this may equally be offset by increased rental prices.

C.4.3. Property managers

Due to the increased communication requirements from tenants in order to enforce their added rights, property managers are expected to have increased time costs spent managing tenancies. These requests will relate to minor modifications, properties maintaining their required standards and any maintenance or repairs. There may also be some short-term retraining costs to ensure staff understand the new policies, however this stakeholder is not expected to experience any significant change in costs.

C.4.4. Queensland Government

The Queensland government will incur additional costs in enforcing the new laws. These will primarily be allocated towards QCAT which will manage requests, refusal orders, as well as any complaints regarding the failure of properties to meet the new requirements. There may be indirect benefits, however, such as improved physical and mental wellbeing of the population leading to reduced health costs due to better quality housing and the allowance of pets, as well as potentially less police callout costs as victims of DFV are better facilitated in their escape from dangerous home environments.

C.4.5. Community

There are expected to be a range of indirect benefits to the community from the reforms. Increased housing security may lead to increased social participation in communities, leading to improved overall health, safety and wellbeing outcomes. Improved repair and maintenance laws may increase employment among small businesses and tradespersons. DFV laws may reduce homelessness and accounts of violence.

Improved housing standards and minor modification laws may reduce greenhouse gas emissions and improve energy and water efficiency due to reduced usage of air-conditioning and the potential for tenants to install more efficient taps, lightbulbs, etc. While the renting with pets laws may reduce abandonment rates for pets, leading to lower levels of feral animals. Overall, while they may be minor, the reforms are expected to benefit the wider community.

Appendix D: Assumptions used to monetise the costs of the proposed reforms

D.1 Housing quality and minimum housing standards

The proposed housing quality and minimum housing standards reform will have an impact on user costs through increased maintenance costs for properties that are not currently meeting minimum housing standards.

Given the uncertainty around the scale of the potential impact of this reform, a scenario-based approach is taken. Estimates for the low/high scenarios are presented using assumptions for:

1. the share of rental properties affected by the proposed minimum housing standards
2. the propensity of tenants in affected properties to request maintenance
3. the estimated average price of repair to comply with the proposed minimum standards.

A summary of the key assumptions and results are presented in Table D.1. These assumptions are consistent with previous unpublished economic research commissioned by the Department in 2019.

Table D.1: **Summary of key assumptions used to estimate the low/high scenario changes in user cost due to the proposed housing quality and minimum housing standards**

	Low case	High case
Number of investment properties in Queensland	562,000	562,000
Proportion of rental properties requiring maintenance	3.5%[32]	8.0%[33]
Estimated number of rental properties requiring maintenance	19,700	45,000
Propensity of tenants to request maintenance	50%[34]	80%[35]
Estimated number of properties who will request maintenance	4,000	22,480
Average compliance cost per property	$1,100[36]	$2,350[37]
Estimated aggregate cost of reform per year	**$0.004 billion**	**$0.053 billion**
Estimated change per investment property per year	**$8**	**$94**

Source: Deloitte Access Economics; various other sources

Note: Totals may not sum due to rounding.

D.2 Other reforms

The user cost for investors are also anticipated to be impacted through a uniform increase in administrative costs associated with the other proposed reforms, including:

1. domestic and family violence protections
2. minor modifications
3. renting with pets.

The assumptions used to monetise the increased administrative burden associated with the proposed reforms are based on previous economic research commissioned by the Department in 2019. These assumptions are explored further below.

Unlike the reform to minimum housing standards, it is reasonably assumed that these other reforms will impose fixed administrative costs on investors uniformly across the market. This is because these reforms will likely affect the time cost of property managers across the real estate industry (rather than investors on an individual basis), affecting the cost base of the entire industry. It is assumed that the property management industry in Queensland is competitive and that property managers will reflect the additional marginal cost of these reforms in their prices paid by investors in equal measure.

Table D.2 summarises the change in aggregate user cost for investors that are expected to arise from the other reforms as administrative costs.

Table D.2: **Detailed summary of estimated change in administrative costs due to other reforms**

Other reforms	Administrative cost
Domestic and family violence protections	$0.001 billion
Minor modifications	$0.013 billion
Renting with pets	$0.003 billion
Estimated aggregate costs of reforms per year	**$0.017 billion**
Estimated change per investment property per year	**$31**

Source: Deloitte Access Economics

Note: Totals may not sum due to rounding. It is assumed that the administrative costs are fixed across the low/high scenarios.

Domestic and family violence protections
The domestic and family violence protections reform is expected to result in a greater administrative burden for property managers including additional time to readvertise properties, as well as managing any changes to tenancies and bonds.

It is reasonably assumed that 1% of all private rental properties will be affected by the policy change – approximately 5,620 properties. This is based on the evidence that 1.5% of the population experience domestic violence[38], and the assumption that around two-thirds of cases result in relocation.

Based on advice from the Residential Tenancies Authority, relocations typically require an additional 8 hours of administrative time. It follows that the increase in administrative time is expected to be around 45,000 hours annually.

Based on the reasonable assumption that the opportunity cost of time for the average property manager is approximately $30 per hour, the increase in user cost for investors due to this reform is estimated at **$1.3 million annually.**

Minor modifications
The minor modifications reform is similarly expected to increase the administrative burden for property managers, including the additional time taken to review and submit requests to homeowners, as well as communicating responses to tenants.

Based on advice from the Residential Tenancies Authority, this reform is expected to affect 12.5% of private investment properties, and the administrative time to process requests per property is expected to be around 6 hours.

As a result, the expected increase in administrative time across the Queensland rental market is estimated to be around 421,000 hours annually. Applying the same opportunity cost of time for the average property manager as before ($30 per hour), this reform is expected to the increase the user cost for investors by **$12.6 million annually.**

Renting with pets
The renting with pets reform is also expected to increase the administrative burden for property managers, including the additional time required to review and submit requests, along with communicate responses.

For the purposes of this analysis it is assumed that this applies to 10% of all private rental properties.

While currently around 2% of rental households with pets are unable to find pet-friendly homes, it is assumed that there would be some induced demand for renting with pets following the implementation of the reform. The additional time to process requests is estimated to be around 2 hours for each affected property based on advice from the Residential Tenancies Authority.

This equates to an increase in the administrative time of around 112,000 hours annually. Applying the same opportunity cost of time for the average property manager as before ($30 per hour), this reform is expected to the increase the user cost for investors by **$3.4 million annually.**

Appendix E: Economic impact analysis method

E.1. Introduction

A change in any one part of the economy will have impacts that reverberate throughout the entire economy. For example, the building of a new mine will involve increased economic activity in the mining industry, but it will also have a range of impacts in other parts of the economy:

There will be effects up and down the supply chain. As a sector expands, it will draw in an increased volume of intermediate inputs from related sectors, resulting in an increased demand for their output and an expansion in production. If the expansion in the sector is demand driven (especially foreign demand), then the price of its output will increase, putting pressure on those who use it as an intermediate input meaning their production may contract.

The expansion in both the sector directly affected and those which supply it will result in an increased competition in factor markets (like those for labour and capital). Factors will move between industries in response to changes in demand and the price (wage) they can earn. This will result in the 'crowding out' of some activity in competing sectors as they lose workers and capital.

At an aggregate level (across the whole economy) there may be an increase in demand for labour such that it induces increased labour supply (the encouraged worker effect) or an inflow of capital as relative rates of return shift. This induced factor supply enables an expansion of the economy, meaning more income and consumption which can stimulate sectors oriented toward this.

If the expanding sector is export-oriented, then the expansion of its production which resulted in increased export income and could be associated with a positive shift in the terms of trade. However, this positive effect – in conjunction with an inflow of investment – would increase demand for local currency, causing real exchange rate appreciation with consequences for other exporting industries.

Computable General Equilibrium (CGE) models, are the best-practice method available for examining the impacts of a change in one part of the economy on the broader economy as they can capture the multitude of impacts highlighted above. Not only can CGE models account for these effects, the results from the models can be used to build a narrative which stakeholders respect – because it is based on accepted economic theory and the latest data – and one which is easily understood.

E.2. DAE-RGEM

The Deloitte Access Economics regional general equilibrium model (DAE-RGEM) belongs to the class of models known as recursive dynamic regional CGE models.[39] Other examples of models in this class are the Global Trade and Analysis Project Dynamic (GDyn) model, the Victoria University Regional Model (VURM) and The Enormous Regional Model (TERM).

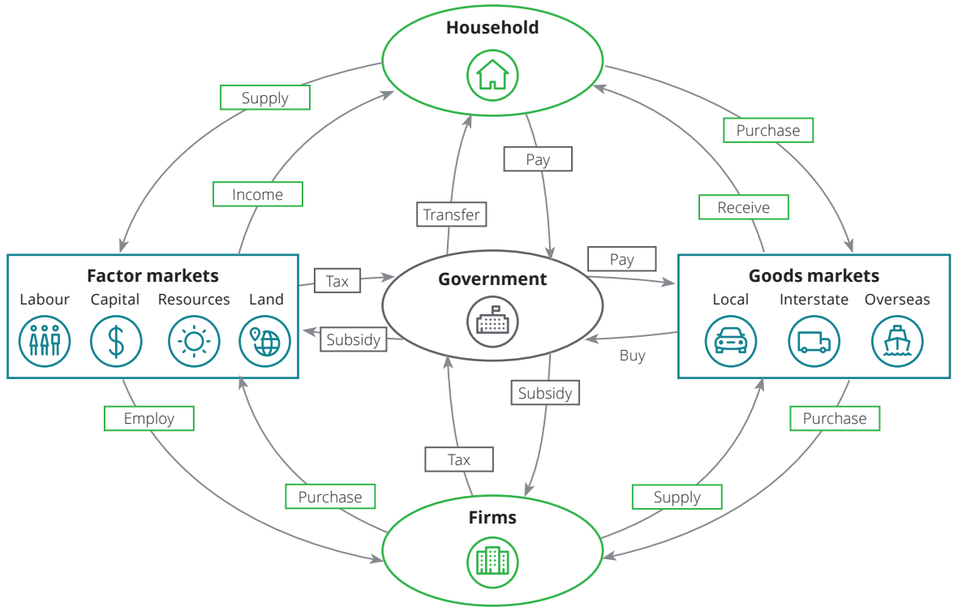
Like GDyn, DAE-RGEM is a global model, able to simulate the impact of changes in any of the 140 countries in the GTAP database (including Australia) onto each of the 140 countries. The ability to incorporate the flow-on impacts of changes that may occur in rest of the world is a key feature of global models that is not available in single-country models, such as the VURM Model or TERM.

However, like those models, DAE-RGEM is a bottom-up model of regional Australia. So DAE-RGEM is able to project the impacts on different States and sub-State regions of Australia of changes occurring in any region of Australia or in rest of the world within a single, robust, integrated economic framework.

This model projects changes in macroeconomic aggregates such as GDP, employment, export volumes, investment and private consumption. At the sectoral level, detailed results such as output, exports, imports by commodity and employment by industry are also produced.

Figure E.1, gives a stylised representation of DAE-RGEM, specifically a system of interconnected markets with appropriate specifications of demand, supply and the market clearing conditions determine the equilibrium prices and quantity produced, consumed and traded.

Figure E.1: **A stylised representation of DAE-RGEM**



The model rests on the following key assumptions:

- All markets are competitive and all agents are price takers
- All markets clear, regardless of the size of the shock, within the year.
- It takes one year to build the capital stock from investment and investors take future prices to be the same as present ones as they cannot see the future perfectly
- Supply of land and skills are exogenous. In the business as usual case, supply of natural resource adjusts to keep its price unchanged; productivity of land adjusts to keep the land rental constant at the base year level.
- All factors sluggishly move across sectors. Land moves within agricultural sectors; natural resource is specific to the resource using sector. Labour and capital move imperfectly across sectors in response to the differences in factor returns. Inter-sectoral factor movement is controlled by overall return maximizing behaviour subject to a CET function. By raising the size of the elasticity of transformation to a large number, we can mimic the perfect mobility of a factor across sectors and by setting the number close to zero we can make the factor sector specific. This formulation allows the model to acknowledge the sector specificity of part of the capital stock used by each sector, and also the sector specific skills acquired by labour while remaining in the industry for a long time. Any movement of such labour to another sector will mean a reduction in the efficiency of labour as a part of the skills embodied and? will not be used in the new industry of employment.

DAE-RGEM is based on a substantial body of accepted microeconomic theory. Key features of the model are:

- The model contains a 'regional household' that receives all income from factor ownerships (labour, capital, land and natural resources), tax revenues and net income from foreign asset holdings. In other words, the regional household receives the gross national income (GNI) as its income.
- The regional household allocates its income across private consumption, government consumption and savings so as to maximise a Cobb-Douglas utility function. This optimisation process determines national savings, private and government consumption expenditure levels.
- Given the budget levels, household demand for source-generic composite goods are determined by minimising a CDE (Constant Differences of Elasticities) expenditure function. For most regions, households can source consumption goods only from domestic and foreign sources. In the Australian regions, however, households can also source goods from interstate. In all cases, the choice of sources of each commodity is determined by minimising the cost using a CRESH (Constant Ratios of Elasticities Substitution, Homothetic) utility function defined over the sources of the commodity (using the Armington assumption).
- Government demand for source-generic composite goods, and goods from different sources (domestic, imported and interstate), is determined by maximising utility via Cobb-Douglas utility functions in two stages.
- All savings generated in each region are used to purchase bonds from the global market, whose price movements reflect movements in the price of creating capital across all regions.
- Financial investments across the world follow higher rates of return with some allowance for country specific risk differences, captured by the differences in rates of return in the base year data. A conceptual global financial market (or a global bank) facilitates the sale of the bond and finance investments in all countries/regions. The global saving-investment market is cleared by a flexible interest rate.
- Once aggregate investment level is determined in each region, the demand for the capital good is met by a dedicated regional capital goods sector that constructs capital goods by combining intermediate inputs in fixed proportions, and minimises costs by choosing between domestic, imported and interstate sources for these intermediate inputs subject to a CRESH aggregation function.
- Producers supply goods by combining aggregate intermediate inputs and primary factors in fixed proportions (the Leontief assumption). Source-generic composite intermediate inputs are also combined in fixed proportions (or with a very small elasticity of substitution under a CES function), whereas individual primary factors are chosen to minimise the total primary factor input costs subject to a CES (production) aggregating function.

Scenario assumptions

Business as usual scenario

The business as usual (BAU) projection of the Queensland economy (including the separate identification of South East Queensland and rest of Queensland) is informed by macroeconomic forecasts from Deloitte's Business Outlook publication and other sources such as the International Monetary Fund.

Specifically, the BAU scenario is modelled by applying economic projections for the following key macroeconomic variables:

- Regional gross domestic product[40] (i.e. South East Queensland, rest of Queensland, rest of Australia and rest of the world)
- Population
- Labour supply
- Unemployment rates

Industry output is projected by the model that determines the growth in total factor productivity required in each industry to meet targeted regional GDP forecasts.

Analytical scenarios

The analytical scenarios are presented as a range (low case to high case) to factor in uncertainty associated with the reported direct impacts.

- Direct shocks are imposed to 'owner-occupied' and 'rental housing' segments to reflect the % change in prices determined through the partial equilibrium analysis of the housing market
- The shock to the rental housing market is simulated by a shock to the supply price of rental housing (this is modelled as a reduction in productivity to simulate an increase in user costs, relative to the BAU)
- The shock to the owner-occupied segment is simulated through a reduction in the price that households pay for owner-occupied housing.

The resulting feedback to the investment in current and future periods is determined endogenously by DAE-RGEM in response to the 'relative rate of return' on investment in each region. This determines the level of investment funds allocated across regions in response to changes in supply and demand. Funds are attracted into regions with relatively higher rates of return compared to the average rate across regions. The economy-wide impacts, a priori, are expected to be minimal given the magnitude of change in user costs (and therefore price changes) relative to the size of the Queensland economy. Direct shocks to price variables are shown in Table E.2.

Table E.2: **Summary of price shocks to the owner-occupied and rental housing market segments, Queensland**

Cumulative % change in prices	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Owner-occupied (low)	-0.0359	-0.0327	-0.0321	-0.0328	-0.0327	-0.0327	-0.0327	-0.0327	-0.0327	-0.0327
Rents (low)	0.0094	0.0190	0.0074	0.0069	0.0065	0.0061	0.0061	0.0060	0.0060	0.0060
Owner-occupied (high)	-0.1160	-0.1058	-0.1038	-0.1061	-0.1057	-0.1059	-0.1059	-0.1059	-0.1059	-0.1059
Rents (high)	0.0304	0.0614	0.0238	0.0223	0.0210	0.0197	0.0196	0.0194	0.0194	0.0194

Source: Deloitte Access Economics

Limitation of our work

General use restriction

This report is prepared solely for the internal use of the Department of Housing and Public Works. This report is not intended to and should not be used or relied upon by anyone else and we accept no duty of care to any other person or entity. The report has been prepared for the purpose of analysing the economic impacts of the Department's proposed rental reforms in Queensland. You should not refer to or use our name or the advice for any other purpose

End notes

[1] Deloitte Access Economics (2019), Analysis of changes to negative gearing and capital gains taxation, report prepared for the Property Council of Australia; Saunders, T., & Tulip, P. (2019), 'A Model of the Australian Housing Market', Reserve Bank of Australia Discussion Paper Series, 1.

[2] Australian Bureau of Statistics, cat. no. 4130.0, Housing Occupancy and Costs, 2017-18

[3] A seminal model set out by Poterba (1984)

[4] Deloitte Access Economics (2019), Analysis of changes to negative gearing and capital gains taxation, report prepared for the Property Council of Australia

[5] Stapledon, N. (2016), 'Notes on Housing – No. 1 March 2016', UNSW Business School Centre for Applied Economic Research, Issue 10

[6] Oxford Economics (2016), Forecasting UK house prices and home ownership.

[7] Where the change in housing supply is determined as the marginal change in new housing supply, minus depreciation of existing properties.

[8] The analysis is framed on Queensland's private rental market only, as that is where most reforms are to be implemented – and the government does not enforce or manage rental prices.

[9] This implicitly assumes that the user cost in Queensland is in line with the national average.

[10] ABS Cat 6416.0 – Residential Property Price Indexes: Eight Capital Cities, Sep 2019.

[11] ABS Cat 4130.0 – Housing Occupancy and Costs, 2017-18.

[12] ABS Cat 6401.0 – Consumer Price Index, Australia, Dec 2019.

[13] Office of the Government Statistician Population projections

[14] Australian Bureau of Statistics, cat. no. 4130.0, Housing Occupancy and Costs, 2017-18

[15] Ibid.

[16] Ibid.

[17] Ibid.

[18] Ibid.

[19] Ibid.

[20] A seminal model set out by Poterba (1984)

[21] Deloitte Access Economics (2019), Analysis of changes to negative gearing and capital gains taxation, report prepared for the Property Council of Australia

[22] Stapledon, N. (2016), 'Notes on Housing – No. 1 March 2016', UNSW Business School Centre for Applied Economic Research, Issue 10 March 2016.

[23] Oxford Economics (2016), Forecasting UK house prices and home ownership.

[24] Where the change in housing supply is determined as the marginal change in new housing supply, minus depreciation of existing properties.

[25] Ong, R., Dalton, T., Gurran, N., Phelps, C., Rowley, S. and Wood, G. (2017), 'Housing supply responsiveness in Australia: distribution, drivers and institutional settings', AHURI Final Report No. 281, Australian Housing and Urban Research Institute Limited, Melbourne

<http://www.ahuri.edu.au/research/final-reports/281>

[26] Saunders, T., & Tulip, P. (2019), 'A Model of the Australian Housing Market', Reserve Bank of Australia Discussion Paper Series, 1.

[27] Otto, G. (2007), 'The growth of house prices in Australian capital cities: What do economic fundamentals explain?', Australian Economic Review, 40(3), 225-238

Duca, J. V., Muellbauer, J., & Murphy, A. (2011), 'House prices and credit constraints: Making sense of the US experience', The Economic Journal, 121(552), 533-551

Glaeser, E. L., Gyourko, J., Morales, E., & Nathanson, C. G. (2014), 'Housing dynamics: An urban approach', Journal of Urban Economics, 81, 45-56

Oxford Economics (2016), 'Forecasting UK house prices and home ownership', November 2016.

[28] ABS Cat 4130.0 – Housing Occupancy and Costs, 2017-18.

[29] https://engage.vic.gov.au/fairersaferhousing

[30] https://www.fairtrading.nsw.gov.au/about-fair-trading/legislation-and-publications/changes-to-legislation/new-residential-tenancy-laws

[31] https://www.realestatebusiness.com.au/breaking-news/19355-rental-laws-reviewed-in-western-australia

[32] Australian Housing Conditions Dataset

Baker, E., Beer, A. Zillante, G., London, K., Bentley, R., Hulse, K., Pawson, H., Randolph, B., Stone, W. and Rajagopolan, P. (2019), The Australian Housing Conditions Dataset, University of Adelaide

[33] CHOICE, National Shelter and the National Association of Tenant Organisations (2017), Unsettled: Life in Australia's private rental market.

[34] Estimates based on unpublished economic research commissioned by the Department. This is compared to a 30% propensity to request maintenance in the absence of the reforms, based on CHOICE et al, 2017.

[35] Ibid.

[36] Estimates based on unpublished economic research commissioned by the Department, informed by Australian Taxation Office Statistics on rental property costs for Queensland in 2018.

[37] Ibid.

[38] Blumer, 2016

[39] In North America the term Applied General Equilibrium (AGE) is also used.

[40] Regional GDP forecasts for south-east Queensland and rest of Queensland are derived using historical gross regional product estimates for 2010-11 (the latest available from Queensland Government) that gives the relativities in real GDP growth between South East Queensland/rest of Queensland.

Deloitte.

Deloitte Access Economics is Australia's pre-eminent economics advisory practice and a member of Deloitte's global economics group. For more information, please visit our website: www.deloitte.com/au/deloitte-access-economics

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited ("DTTL"), its global network of member firms, and their related entities. DTTL (also referred to as "Deloitte Global") and each of its member firms and their affiliated entities are legally separate and independent entities. DTTL does not provide services to clients. Please see www.deloitte.com/about to learn more.

Deloitte is a leading global provider of audit and assurance, consulting, financial advisory, risk advisory, tax and related services. Our network of member firms in more than 150 countries and territories serves four out of five Fortune Global 500®companies. Learn how Deloitte's approximately 286,000 people make an impact that matters at www.deloitte.com.

Deloitte Asia Pacific
Deloitte Asia Pacific Limited is a company limited by guarantee and a member firm of DTTL. Members of Deloitte Asia Pacific Limited and their related entities provide services in Australia, Brunei Darussalam, Cambodia, East Timor, Federated States of Micronesia, Guam, Indonesia, Japan, Laos, Malaysia, Mongolia, Myanmar, New Zealand, Palau, Papua New Guinea, Singapore, Thailand, The Marshall Islands, The Northern Mariana Islands, The People's Republic of China (incl. Hong Kong SAR and Macau SAR), The Philippines and Vietnam, in each of which operations are conducted by separate and independent legal entities.

Deloitte Australia
In Australia, the Deloitte Network member is the Australian partnership of Deloitte Touche Tohmatsu. As one of Australia's leading professional services firms. Deloitte Touche Tohmatsu and its affiliates provide audit, tax, consulting, and financial advisory services through approximately 8000 people across the country. Focused on the creation of value and growth, and known as an employer of choice for innovative human resources programs, we are dedicated to helping our clients and our people excel. For more information, please visit our web site at https://www2.deloitte.com/au/en.html.

Liability limited by a scheme approved under Professional Standards Legislation.
Member of Deloitte Asia Pacific Limited and the Deloitte Network.

©2020 Deloitte Access Economics. Deloitte Touche Tohmatsu