STATE OF HOUSING SUPPLY

Key Points

- A recovery in construction activity from the COVID-19 recession is underway, led by detached housing. We expect total net additions to rise to 181,000 in 2021 from 170,000 in 2020 on the back of the monetary and fiscal stimulus put into place this year.
- In 2022, some withdrawal of fiscal stimulus seems likely to make room for a recovery in parts of the economy most affected during the recession. Over the longer term, the lower population outlook highlighted in the demand chapter will weigh on construction, with net additions likely to be only 148,000 in 2025.
- The detached housing market is clearly responding to the fiscal and monetary stimulus and we expect net additions to rise to 108,000 in 2021 from 90,000 in 2020. However, the withdrawal of stimulus and relatively weak population growth outlook means that by 2025, net new detached housing additions are likely to be only 97,000.
- The downturn has weighed more on apartments than detached or medium-density dwellings because of international border closures. Furthermore, federal and state government stimulus packages thus far have been more targeted towards detached dwellings. We expect net apartment additions to fall to 45,000 in 2021 from 55,000 in 2020.
- Lower population growth means that net additions in apartments in 2023 are likely to be 58 per cent below those seen just prior to the COVID-19 recession. Even by 2025, we still expect them to be 51 per cent below this benchmark and only 27,000 dwellings. It's also worth noting that the downturn in apartments was already underway before the COVID-19 recession, with net additions 15 per cent below their 2017 peak.
- More positively, credit availability doesn't appear to be limiting construction activity, with lending to developers broadly tracking building approvals. However, credit could tighten in pockets such as capital city CBD apartment markets if growth in NOM remains sluggish.

Introduction

Most new housing in Australia is provided by the private sector working to state and local government planning laws, and using land released by state governments for residential use. It is relatively small compared with the stock of existing dwellings.

Economic conditions need to be favourable for the private sector to build and develop housing. Changes in interest rates, house prices and household income are important factors driving construction activity, along with expected demand. State government operated incentives such as the First Home Buyer Grant also play a role in encouraging new entrants into the market. The Federal Government funds the First Home Buyer Grant and offers other incentives such as the First Home Loan Deposit Scheme. Support for social and affordable housing generally comes from both the state and federal governments.

As planning regulators, state and local governments are involved in determining land availability for greenfield housing, how this land is used, and how quickly land is developed through their strategic and statutory planning processes. The governments often regulate the parcel size of land through the subdivision development process, collect infrastructure charges and ensure essential services are provided to residents of the urban fringe. Providing adequate transport infrastructure is a key challenge.

In this chapter, we detail the residential development process and the factors impacting the supply of new housing and land. We detail a model for new supply at the national level and take the output from this model to forecast new supply for capital city and regional areas.

Greenfield and urban infill development

State and local governments regulate the development and supply of new land and housing.

State governments generally control the release of land and growth of greenfield areas on the urban fringe. In the urban infill within the established urban areas, state and local government come together to determine areas where new dwellings can be built.

Most new housing is built in the urban infill. For example, in South East Queensland, 60 per cent of new housing is built in the urban infill, with the remaining 40 per cent built in greenfield areas.[17] In contrast, in Perth, only 30 per cent of new housing is built in urban infill areas.

Infill developments include large medium-density and high-rise apartment developments that can be on former industrial sites in inner areas. It can also include low-rise medium-density developments such as townhouse or small apartment developments less than four storeys. Detached homes in the urban infill are usually built by small and medium-sized developers.

17 Queensland Government (2019) *Land supply and development monitoring report.*

There are generally six steps involved in the creation of a new residential dwelling:

Table 3.1: The residential dwelling production process

Land identification and release	• The state and/or local government identifies greenfield development growth areas where it is in the public's interest for that land to be used for residential purposes. • In the capital cities, state government is generally responsible for identifying land for greenfield development. In regional areas the responsibility generally sits with local councils.
Rezoning to residential	• The rezoning of land for residential use is done by state and local governments and often initiated by a developer. The rezoning of land for residential use in most cases needs to be supported by a strategic land use plan, which assesses and identifies future land uses. • The strategic plan sets the roadmap for future development of a region to accommodate the forecast growth demand for housing, jobs and the location and demand of services to meet that growth. • The strategic plan also attempts to balance the competing needs for expansion of urban land and services with environmental protection. It tries to balance a community's recreational needs with promoting sustainable business and employment.
Infrastructure planning and approval	• Local government and state planning agencies coordinate to identify and provide physical infrastructure such as roads and water. Social infrastructure such as schools, childcare and health facilities are also considered in the strategic planning stage or during the rezoning process. • The level of infrastructure fees paid by the developer to the state government, local council and/or infrastructure providers are also determined at this stage if a charging regime does not cover the proposed development or site. • Arrangements vary across the states but in NSW, developers may dedicate land and/or provide infrastructure such as a road or parkland through a Voluntary Planning Agreement. • Liaison with developers working on projects around the country indicates Sydney is the most difficult market, with the approval process reported as being too lengthy and complicated in not only the urban fringe, but also in urban infill.
Detailed subdivision development assessment	• Local government considers developer's proposals and pays particular attention to issues such as the layout of local roads, lot sizes and streetscapes during the assessment process.
Subdivision construction and title issuance	• The construction of civil engineering for subdivision and the provision of services such as roads, water, sewerage and electricity. In large areas of new land this work is normally done in stages, with lots built and titles issued. House and land packages are often sold at this stage.
Dwelling construction	• Dwelling designs are assessed and approved by Council. • In some states there are more streamlined processes to obtain dwelling construction approval through a private certification process where the dwelling complies with certain building and design criteria.

Land identification by state and territory

- In New South Wales, the state government has designated growth areas in Sydney's north-west and south-west. These land release areas are managed by state government agencies and local government, and the Greater Sydney Commission. In regional New South Wales, the state government works with local councils to identify land to be released for residential development.
- In Queensland, the state government has growth corridors in the heavily urbanised South East Queensland. In regional Queensland, the state government works with local councils to identify land to be released for residential use.
- In Victoria, Melbourne has four growth corridors and land is gradually released for residential development. In regional Victoria, the state government works with local councils to identify land to be released for residential development.

- In South Australia, the state government has growth areas in greater Adelaide and it attempts to coordinate urban development in these areas and transport infrastructure. In regional South Australia, the state government works with the local councils to identify land to be released for residential development.
- In Western Australia, the state government has growth areas in greater Perth and similar to Adelaide, it attempts to coordinate this development with transport infrastructure planning. In regional Western Australia, the state government works with the local councils to identify land for residential development. The Directions 2031 Spatial Framework for Perth and Peel was introduced in 2010.
- In Tasmania, the Tasmanian Planning Commission considers and approves draft planning schemes. The Tasmanian Planning Scheme (TPS) applies to all land in Tasmania and replaces previous planning schemes that operated for each council area. It consists of the State Planning Provisions (SPPs) and a Local Provisions Schedule (LPS). When each council finalises their LPS and it is approved by the Minister for Planning, the Tasmanian Planning Scheme takes effect in that council area.
- The Northern Territory Planning Scheme provides the guidelines for all land planning in the territory except for Jabiru, which has its own plan. The scheme identifies land for residential use and schedules its release.
- The Australian Capital Territory Planning Strategy identifies land for residential use and schedules its release. It aims to limit urban spread and encourage growth around developed areas and existing transport infrastructure. It aims to work with local councils in the territory to maintain the bush-setting backdrop to urban areas.

Dwelling types and locations

For the purposes of this report, housing supply is defined as private sector dwellings that are available for habitation. It includes both occupied and unoccupied dwellings regardless of the tenure type. Housing supply is considered as both the existing supply of dwellings as well as the future supply pipeline of private sector dwellings.

Dwellings have been divided into the same categories as outlined in the Demand chapter, allowing a comparison of the supply: demand imbalance by building type.

An analysis of building type is important because it captures how housing preferences are changing and how efficiently the development industry is responding to these changes.

Housing supply estimates have been prepared at the national and state level, along with rest of state locations across Australia that are consistent with the demand analysis.

Dwelling investment cycles

Dwelling investment has been one of the more volatile components of GDP and often drives economic cycles. It has averaged 6.2 per cent of GDP since 1960, but in the range of 8.3 per cent of GDP to 4.9 per cent of GDP.

With the support of low interest rates, dwelling construction activity helped cushion the economy from the large decline in mining investment that unwound the mining boom from the late 2000s. However, conditions in the apartment markets of the major eastern state capital cities became overheated and excessive credit growth was reined in by tighter macroprudential policy. In 2019, macroprudential policy eased somewhat and, in addition, monetary policy became more accommodative. This led to a pick-up in leading indicators of construction activity just prior to the COVID-19 recession.

Financial conditions may also constrain new supply. When they tighten, new construction is often slow to respond to movements in underlying demand.

Factors affecting supply

Financing and prices

The cost and availability of finance are major factors impacting supply and they also impact demand. However, supply is often relatively slow to respond to movements in demand.

Australian mortgage rates have declined from 17 per cent in the early 1990s to around 3.0 per cent, with a similar structural decline occurring globally[18]. During this period, new housing supply has increased structurally with support from not only the decline in interest rates, but also stronger demand via a pick-up in population growth. Net overseas migration has been the key ingredient in the population growth surge, accounting for 60 per cent of the increase over the past 10 years.

Movements in financial conditions also impact the price of dwellings and this can, in turn, impact marginal supply. Indeed, rising prices can cause price expectations to also rise and this will naturally attract investment.

Table 3.2 shows the monetary stimulus provided by the RBA and the fiscal support provided by the Federal Government since the start of the COVID-19 recession.

State governments have also played a significant role in providing fiscal support to the housing market during the COVID-19 recession. Table 3.3 highlights fiscal stimulus provided by state and territory governments since March 2020.

The fiscal support generally consists of transfer duty support, additional and complimentary funding similar to the Federal Government's HomeBuilder Program and land tax relief or payment deferrals.

Table 3.2: Federal Government fiscal and monetary stimulus since March

RBA	• Target cash rate was cut by 25 basis points to 0.25 per cent at the March RBA board meeting and then to 0.1 per cent at the November board meeting. • A target on the 3-year government yield of 0.25 per cent was introduced in March and subsequently reduced to 0.1 per cent in November, with the RBA committed to buying these securities to achieve this target. By early October, the RBA had purchased $A63bn of these securities to achieve its 0.25 per cent target. • Term funding facility was set up to provide low-cost funding to authorised deposit-taking institutions lending to small and medium-sized businesses. The facility was extended to $A200bn in September after initially set up to provide $A60bn in funding. • Interest on exchange settlement balances was cut to 10 basis points at the March board meeting and further cut to 0 basis points at the November board meeting. • At the November board meeting the bank introduced a quantitative easing program whereby it would purchase $A100bn of Federal Government and semi-government bonds over the following six months targeting 5-year to 10-year maturities.
Federal Govt	• The HomeBuilder Program provides $A25,000 to households planning to build a new home or substantially renovate their own home. There are income and property valuation conditions attached the grant and it applies only to building contracts signed between 4 June 2020 and 31 December 2020. • The First Home Loan Deposit Scheme was extended to include an extra 10,000 places for new homes, so that borrowers could purchase a new home with a deposit as little as 5 per cent, without the need to pay lenders mortgage insurance.

Source: RBA, Federal Treasury

18 Lowe P (29 October 2019) Some Echoes of Melville [speech], Sir Leslie Melville Lecture, Canberra.

Table 3.3: State Government fiscal stimulus

NSW	• Transfer duty abolished for first home buyers from 1 August 2020 to 1 August 2021 for properties valued less than $A800,000 and reduced to those valued more than $A800,000 and less than $A1,000,000. • Land tax relief to landlords where their tenants have been unable to fully pay rent. The concession is equivalent to the lost rent and payable up to 50 per cent of the tax liability.
VIC	• Landlords who provide tenants impacted by the coronavirus pandemic with rent relief may be eligible for a reduction of up to 50 per cent on the property's 2020 land tax. In addition, those unable to secure a tenant because of the pandemic may be eligible for a 25 per cent reduction on the property's 2020 land tax. These tax liabilities can also be deferred until 31 March 2021. • A full waiver of 2021 vacant residential land tax liabilities that would ordinarily apply to residential properties in Melbourne's inner and middle suburbs that are vacant for more than six months in 2020. • In November the government announced a 50 per cent cut to transfer duty on purchases of residential property with a dutiable value of up to $1 million. The policy applies to contracts entered into on or after 25 November 2020 and before 1 July 2021. • A 50 per cent land tax discount for eligible build-to-rent developments, including an exemption from the absentee owner surcharge, until 1 January 2040. The policy is expected to begin applying in the 2022 land tax year.
QLD	• A three-month deferral of land tax liabilities for the 2021 assessment year. • A land tax rebate reducing land tax liabilities by 25 per cent for eligible properties for the 2020 and 2021 assessment years.
SA	• Landlords may receive land tax reduction of a maximum of 25 per cent of the liability based on rent relief the landlord has provided to tenants impacted by COVID-19 or rent the landlord has forgone between 30 March 2020 and 30 October 2020 (period 1). Another period where relief (also up to 25 per cent) for the rental relief provided to tenants between 30 October 2020 and 30 April 2021. A land tax reduction of up to 25 per cent of the 2020 land tax payable on that property is available in each period, with a maximum total reduction of up to 50 per cent of the 2020 land tax payable on that property. • Individuals paying land tax quarterly in 2020 will be able to defer payment of their third and fourth quarter instalments for up to six months.
WA	• A $20,000 grant is available for the construction of a new detached dwelling on vacant land. Contracts must be entered into between 4 June 2020 and 31 December 2020. • There is also an extension to the off-the-plan stamp duty rebate scheme (apartments and medium-density dwellings). The rebate amount is 75 per cent of the duty paid, capped at a maximum of $50,000 for pre-construction contracts (23 October 2019 and 23 October 2021) and $25,000 for a contract under which construction has already commenced (4 June 2020 to 31 December 2020).
TAS	• First home buyers grant increased by $A10,000 to $A20,000 for either new construction or newly erected dwellings where contracts to build were entered into between1 July 2017 and 30 June 2020. This was due to revert back to $10,000 in June 2020 but has now been extended to 30 June 2022. • A $20,000 Tasmanian HomeBuilder grant is eligible to owner-occupiers for new construction for contracts entered into between 4 June 2020 and 31 December 2020.
ACT	• No stamp duty on single residential dwelling blocks and off-the-plan developments (unit-titled apartment and townhouses) for purchases up to $500,000. • An $A11,400 stamp duty reduction for off-the-plan unit (unit-titled apartment and townhouses purchases between $500,000 and $750,000). • Landlords who reduce rent on their privately rented properties by at least 25 per cent due to COVID-19, may be eligible for a land tax credit to cover 50 per cent of the rental reduction, up to a limit of $1,300 per quarter.

Source: State government revenue department websites

An important consideration for the ability of the development industry to respond to shifts in demand from home buyers is their ability to finance construction and development.

Developers often need debt finance to construct apartment projects and large detached dwelling projects. Residential projects normally receive debt financing once a certain sales benchmark (off-the-plan) is reached before construction. Once construction is completed the debt is normally paid back using proceeds from the continuing sales process.

Large residential apartment projects can take some 12–24 months to construct and some apartments might not be sold by the completion of construction.

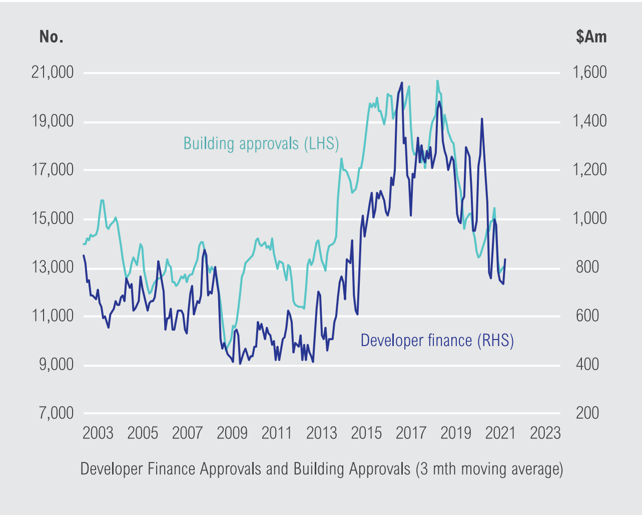
In the current cycle, the pullback in developer loan approvals is broadly in line with the decline of building approvals, which suggests that credit is not putting a brake on building activity (Figure 3.1—LHS). If credit was constraining construction activity, we would expect to see an excessive fall in developer loan approvals relative to building approvals.

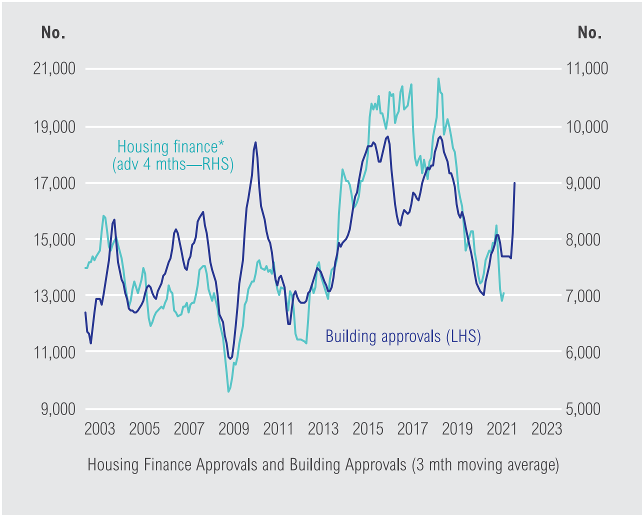
Probably the best example of where credit restricted activity was during the Global Financial Crisis period whereby the upswing in building approvals was not accompanied by an upswing in developer lending and activity was ultimately forced to rebase.

In the detached housing market, buyers typically buy a vacant lot of land and separately contract a builder to build the new house. In this build-to-order arrangement, lending to households normally leads building approvals by around four months.

Building approvals initially declined at the start of the COVID-19 recession, but more recent data show they have begun to improve on the back of Federal Government stimulus and lower mortgage rates (Figure 3.1—RHS).

Figure 3.1: Finance approvals and building approvals





Source: ABS, RBA, NHFIC. Developer finance is proxied as fixed term lending to business for residential construction.

*Housing finance is number of loan approvals for both investors and owner-occupiers. Prior to July 2019, the number of investor loan approvals is estimated assuming the ratio of the value of investor and owner-occupier approvals equals the average since July 2019. The ratio of investor loans for construction and newly erected dwellings to total investor approvals is also assumed to be the average since July 2019.

Land availability

Cities with topographical constraints that restrict or limit expansion of the urban fringe, such as Adelaide and Sydney, have policies that favour greater infill development. In Sydney, there is a clear state government policy that restricts development in Sydney's Metropolitan Rural Area. This means future housing supply is generally constrained to existing urban areas or within those topographical constraints identified as greenfield sites.

In contrast, cities such as Brisbane, Melbourne and Perth that have less constrained topographies are continuing to see a higher share of expansion by land release on the urban fringe.

In these greenfield land release areas, the government is essentially leading the creation of entire new suburbs and urban regions. However, these developments need to be supported by significant investment in infrastructure often by all three levels of government.

In contrast, infill development in the major cities is conducted on a relatively ad-hoc basis. Recent developments have focused on increasing housing supply in existing and proposed transport corridors. For example, the Sydney North West Metro rail project links the north-west growth corridor to the Sydney CBD via Chatswood station. Its extension, the Sydney Southwest Metro project, links the Sydney CBD to Bankstown via Sydenham station.

These twin metro projects (completed and operating from Tallawong to Chatswood) will be completed in 2023. The Sydney West Metro project will link Westmead and Parramatta to the Sydney CBD via Homebush.

NHFIC liaison with developers indicates that Sydney is the main market where land availability is a significant constraint on housing supply. This is partly due to topographical reasons, but putting this issue aside, it would be possible to extend the Sydney housing footprint further if an expanded transport infrastructure was available. Regions such as the Central Coast, South Coast and Southern Highlands would be more attractive to workers in the Sydney CBD if travel time to and from work could be reduced so that it is a reasonable commute on public transport.

Development in both Melbourne and Brisbane has tended to be more centrally located and it has embraced the use of airspace more than Sydney[19].

Greenfield subdivision and property development models

- Land development: In most land-release housing developments, the developer subdivides the land and then sells it to consumers directly or through house and land packages, which may be offered by third parties. This delivery model separates the creation of land parcels from the construction of housing but is generally not used to develop medium-density housing.
- Land development and dwelling construction: Another development model involves the developer both subdividing the land and constructing attached dwellings. This model is often used in terraced or apartment housing developments and is commonly used in both the UK and US, but it is less common in Australia. The smaller scale of development in Australia could make it more costly for developers to develop land and build, with land holding costs extended by the dwelling construction period. In this model, similar dwelling types are provided regardless of lot size. Indeed, newer release areas across Sydney and Melbourne often feature relatively small lots occupied by large single-storey houses.

19 Jenner K and Tulip P (2020) The Apartment Shortage, Reserve Bank of Australia.

Changing demand, ownership and preferences

Trends in home ownership and housing preferences are key drivers of demand that determine the type of dwelling supplied to the market.

The COVID-19 downturn saw a surge in people working from home, particularly those working in professional service industries. It is probably too early to tell whether working from home will dominate over the business office as a workplace. However, it's likely working from home will become more common as the economy normalises following the pandemic. This means more homes will require dedicated office space and a fast-speed internet connection.

During the pandemic, anecdotal evidence suggests that regional areas have benefited from residents of capital cities relocating. It's probably too early to tell whether this is the start of a structural step up in the population growth of regional areas, at the expense of the capital cities, but it is a trend worth monitoring in the period ahead. These changing demand issues will have implications for the type of dwelling product that is constructed.

The housing stock should also meet the needs of an ageing population. Access to services and simple access around the home will become more important along with smaller house sizes. Recent studies undertaken in Sydney, Melbourne and Adelaide indicate the need for more diverse new housing, including more attached dwellings in the form of terrace houses and apartments.

Home ownership has been around 67 per cent since the 1950s, although it has been under slight downward pressure over the past decade, due to declining affordability. Smaller dwellings help meet this affordability challenge, with apartments close to transport and CBDs a good fit.

- **Build-to-rent product.** Build-to-rent product has been a feature of the US housing market for many years, but it has only begun to emerge recently in Australia. This year, the NSW Government announced a 50 per cent reduction in land tax for these projects out to 2040 where the size of the development exceeds 50 units. The Queensland State Government has announced two build-to-rent affordable housing apartment projects. In Victoria, investors may be exempt from the absentee owner surcharge and foreign purchaser additional duty. According to media reports, the property consultancy Urbis indicates build-to-rent projects are now around 8,000 units annualised.[20]

20 Bleby M (10 September 2020) '*Private development loss is build-to-rent's gain: Urbis*', The Australian Financial Review.

Methodology

Top-down analysis and projections

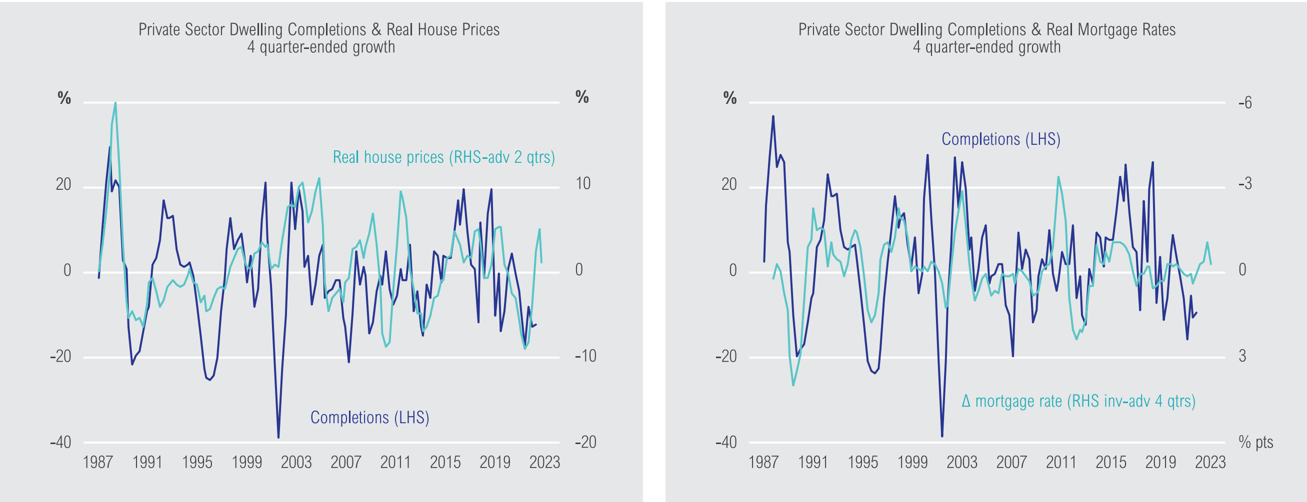
In building our model of housing supply we start using a top-down approach to capture the well-recognised relationship between macroeconomic variables such as house prices, interest rates, household disposable income, and construction activity. In particular, changes to house prices and interest rates have had a close relationship with dwelling completions for at least the past 30 years (Figure 3.2).

NHFIC provided SGS Economics with an estimate for total dwelling completions at a national level (Figure 3.3), which was determined using a simple linear regression model, which is detailed in the Appendix.

In forecasting dwelling completions, we make the following assumptions:

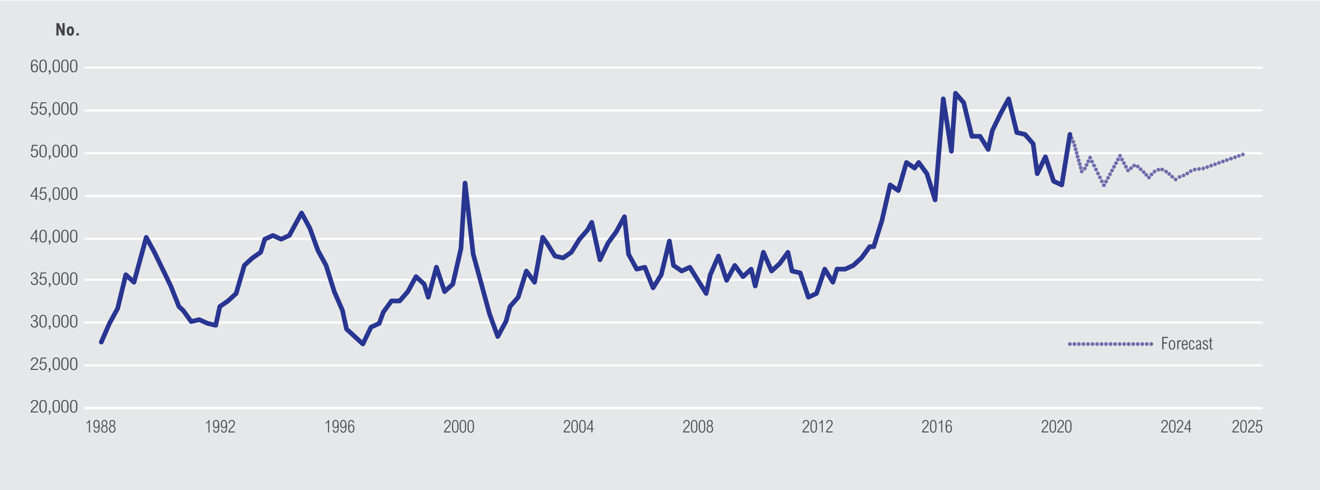
- Nominal household disposable income averages 2.1 per cent for the next two years and 3 per cent between 2023 and 2025.
- A 38 basis point reduction in the mortgage rate in 2020, which is consistent with market pricing. We then project no further changes in mortgage rates between 2021 and 2023, which is also consistent with market pricing and RBA guidance. In 2024 and 2025 we assume a 25 basis point increase in the mortgage rate per annum.
- A 5 per cent fall in house prices in 2020 followed by a 5 per cent gain between 2021 and 2023 followed by a modest 2 per cent per annum gain between 2024 and 2025.

Figure 3.2: Dwelling completions, house prices and interest rates



Source: ABS, RBA, NHFIC. House prices are the ABS established median house price. The mortgage rate is the average banks' standard variable mortgage rate.

Figure 3.3: Quarterly private sector dwelling completions



Source: ABS Cat 8752.0, NHFIC.

Near-term projections for completions produced by the model are adjusted for the latest building approvals data, which normally lead completions by around 12 months. The forecasts for 2022 are unadjusted.

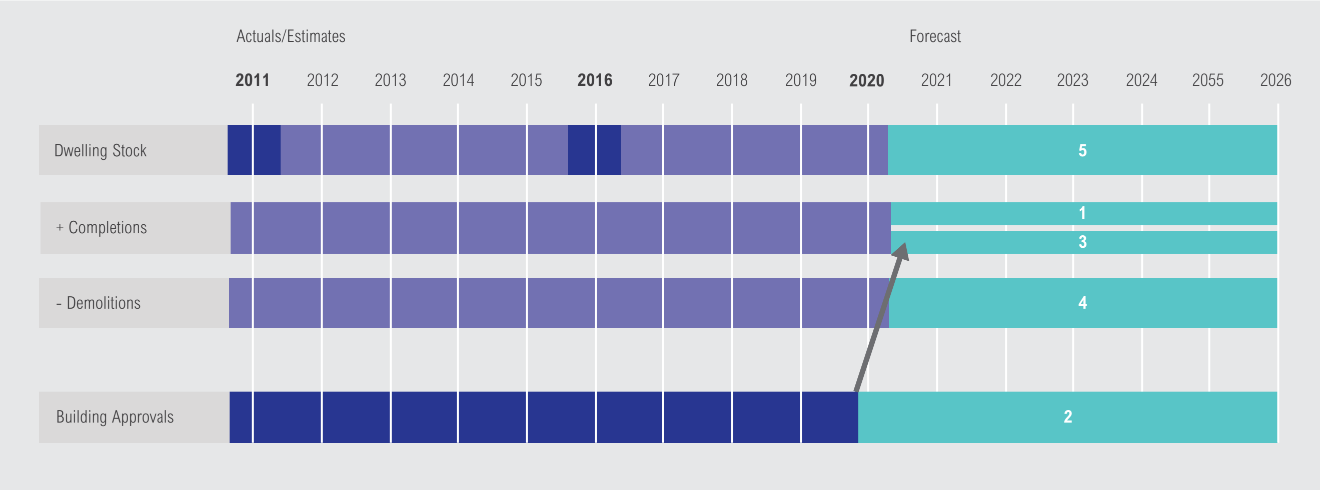
The projections between 2023 and 2025 that are generated from our model are adjusted so they are more consistent with demand. This adjustment recognises that supply usually doesn't exceed demand over the longer term.

- The adjustment begins at the 2021 estimates of adjusted underlying demand and the model-generated supply in that year.
- The difference between demand and supply by dwelling type and state is calculated for each year. Estimates for future years are factors of previous year adjustments.
- 50 per cent of the imbalance is added or subtracted from the initial building approval estimate for that year. This 50 per cent could be considered a 'market response' assumption.
- The adjustment is limited to +/-75 per cent of initial building approvals. For example, if the initial imbalance was 100 dwellings then the adjusted estimate could be up to 175 or down to 25 in response to this feedback loop.
- This adjustment to building approvals then impacts the completions based on the lag in the building process. A detached or medium-density approval is completed on average in 12 months, while an apartment approval is normally completed after two years.

Dwelling type estimates

The projected dwelling completions from our model are then estimated by dwelling type at the state level. These estimates are made using historical data and bottom-up supply information accounting for variations in completions rates and recent building approvals data. We assume there is a one-year lag between approval and the completion of construction. In practice, the lag varies depending on the type of building being constructed and market/planning conditions at the location of the project.

Figure 3.4: Supply forecast process



Source: SGS Economics

Projections: 2016 to 2020

The 2016 Census provides detail on the dwelling stock, including the number and type of dwellings and the number of dwelling demolitions since the 2012 Census.

ABS data also show the composition of building activity at the Statistical Area 2 (SA2) level or a collection of suburbs within a capital city.

This data provide gross additions to the housing stock but takes no account of demolitions during this period. An average demolition rate (demolitions as a percentage of completions) is calculated for the 2011 and 2016 period and this rate is projected out to 2020. Demolitions are then calculated using the number of completions between 2016 and 2020 for each dwelling type. The Appendix includes some discussion on the newly released ABS data on housing demolitions.

Projections: 2020 to 2025

Once the 2020 housing stock has been determined, projections out to 2025 are made using the process outlined in Figure 3.4. This takes the national and state level completions assumptions and then disaggregates these using the most recent building approvals data as well as local land supply policy.

- An initial trend estimate of completions is then made by dwelling type at the SA2 level and projected from 2020 to 2025 using the NHFIC top-down dwelling completion estimates.
- The share of each state in completions at the national level is then projected by using their share average share during the 2016 to 2020 period. Dwelling types by state are then estimated using their average share of the total during the 2016 to 2020 period.

Completions at the SA2 level are then estimated initially using their share of building approvals in state building approvals during the 2016 to 2020 period.

These initial estimates at the SA2 level are then adjusted for the following:

- Local land supply/zoning. For example, the estimated amount of residential land available and the pipeline of land rezoning
- Local development pipeline
- Local policy and plans; particularly government policy on housing targets in the area.

- State level demolition rates estimated for the 2011 to 2016 period and projected out to 2020 are also projected out to 2026 to generate demolitions to the end of the forecast period.
- Stock is calculated from estimated completions and demolitions by SA2 and dwelling type.
- City, significant urban areas and rest of state results are then reported based on aggregating SA2 to the agreed geographic definitions of city and significant urban areas.

Housing supply projections

Our projections show a significant downturn in 2020 followed by a recovery in 2021, due mainly to fiscal and monetary stimulus. As the economy recovers and stimulus is withdrawn, we expect construction activity to fall before a modest recovery beginning in 2025 that still leaves net additions well below those seen prior to the COVID-19 recession (Table 3.4). We expect net completions to rise by 6 per cent in 2021 before falling by 12 per cent in 2022.

Our projections expect the recovery will be dominated by detached dwellings, with net completions in this building type increasing from 89,500 in 2020 to 107,900 in 2021 (Table 3.5). We also expect 2022 to be a solid year with 102,900 detached dwellings added to the housing stock. Medium density net additions are expected to increase by approximately 2,000 in 2021, but apartment net additions are expected to fall by approximately 9,600 net additions.

The apartment and medium-density markets are more exposed to the closure of international borders to net overseas migration and particularly international students. The detached dwelling market is more likely to benefit from the support of the Federal Government's HomeBuilder program and state government building grants.

Moreover, the lower rate of population growth that underpins the demand forecasts feed into the longer term outlook and have severe consequences for the apartment market. We expect net additions to the apartment market to be 58 per cent lower than pre-COVID recession levels in 2023 before a very modest recovery that still leaves them 51 per cent below this benchmark in 2025.

The outlook over the next five years should also be put into a longer term context. We estimate that, at the peak of the apartment boom in 2017, a net 65,700 apartments were added to the housing stock compared with 55,600 in 2019 before the COVID recession. In other words, net additions to the apartment market were already 15 per cent below their peak before the recession.

Table 3.4: Net additions to the Australian housing market

2019 (e)	2020 (e)	2021	2022	2023	2024	2025
188,900	170,000	180,900	159,600	120,500	128,300	148,300

Source: SGS Economics, NHFIC. (e) net estimate using actual completions less estimated demolitions.

Table 3.5: Net additions to the Australian housing market by dwelling type

	2019 (e)	2020 (e)	2021	2022	2023	2024	2025
Detached dwellings	103,200	89,500	107,900	102,900	79,100	83,500	96,900
Medium density	30,100	25,700	27,800	18,500	18,200	20,200	24,000
Apartments	55,600	54,800	45,200	38,200	23,200	24,600	27,400
Total	**188,900**	**170,000**	**180,900**	**159,600**	**120,500**	**128,300**	**148,300**

Source: SGS Economics, NHFIC. (e) net estimate using actual completions less estimated demolitions. NB: Numbers may not add up due to rounding.

Sensitivity analysis

Under the sensitivity analysis assumptions highlighted in the demand chapter, under a more optimistic outlook for NOM and demand, supply would fall to 130,000 in 2023 (not 121,000 under our base scenario) and would lift to around 159,000 dwellings by the end of the projection period.