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WHEN HOUSING SUPPLY HITS THE MARKET: APARTMENT PRESALES AND SYDNEY PRICE TRENDS

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This note explores Sydney's largest housing supply expansion on record, in 2018-19, which was primarily large apartment buildings. New data indicate that it was mostly sold years earlier ('off the plan'), when housing price growth was and stayed very high. Acknowledging this timing, upward price pressures overwhelmed any effects of the supply growth. Other takeaways include:

- Although city-wide prices were growing rapidly, areas with more supply growth had modestly lower apartment price growth, consistent with a negative effect on prices.
- There was little sign of price spillovers between housing types – supply growth in large apartment buildings may do little to lower prices in other segments, such as detached houses.

There is no doubt that if supply growth stalls, housing affordability will worsen. Past research gives evidence that supply shortages lift prices. However, evidence on *how much* of past price growth has been driven by supply shortages, versus other factors, is far less clear. The data in this note cast doubt on whether shortages of high-density housing have been the main driver of Sydney's price growth. The analysis acknowledges challenges in drawing this inference, including uncertainty about how quickly supply affects prices, and the inability to observe housing demand quantities.

Introduction

Supply growth is central to Australia's housing affordability policy. Recent policy has focused on easing development restrictions in metropolitan areas, where people can live near employment opportunities and other people. Sydney is the epicentre, with the highest prices, and arguably the tightest supply constraints due to natural city boundaries and land-use regulations.

To better understand how supply growth relates to housing affordability, this note analyses a new dataset on the sales timing of newly developed large apartment buildings in Sydney. These apartments are often presold 'off the plan' years earlier than construction is complete, but data on how much earlier is scarce. Any comparison of supply growth with price outcomes should account for this timing difference.

The dataset comes from algorithmically matching publicly available data on Sydney building completions with proprietary data on sales and rental transactions (see Box 1). The sample covers a major episode of supply growth and price movements. In 2018 and 2019, apartment completions spiked at over double their annual average since 2000. Between 2012 and 2017, Sydney prices grew by *three quarters*, before falling about 10% to 2019.

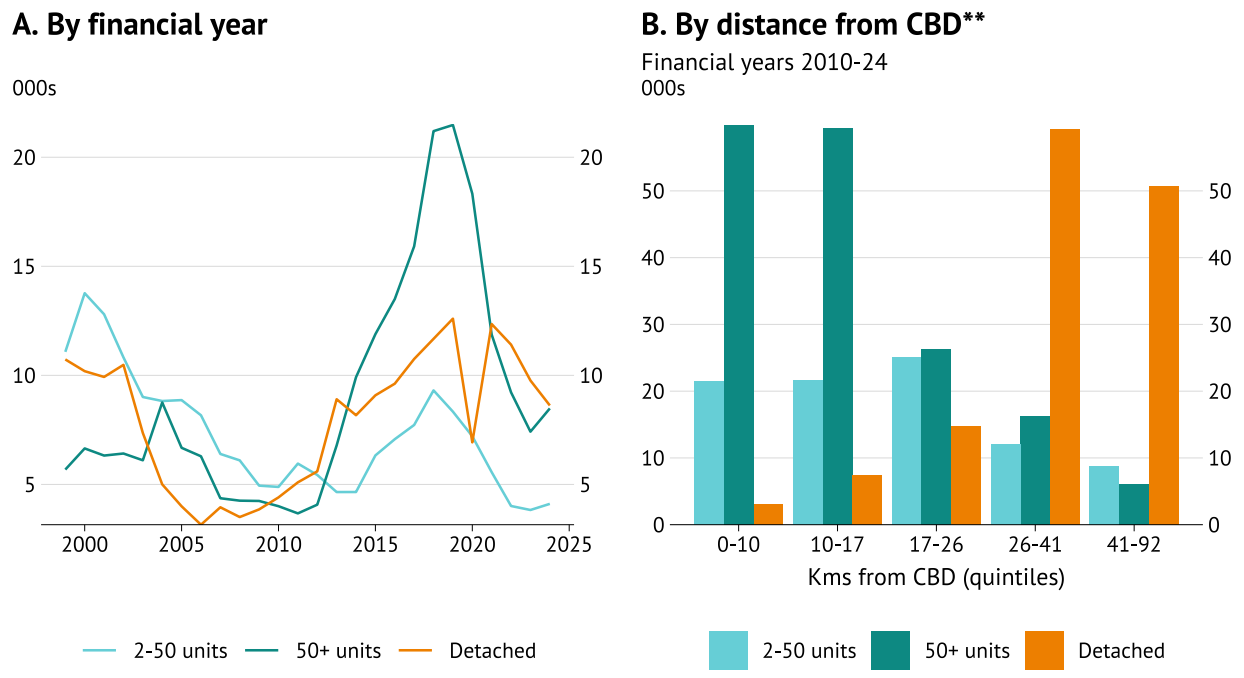
Sydney had outsized price and supply cycles in the 2010s

Figure 1A illustrates the late 2010s growth spurt in big apartment buildings. Supply of detached houses also rose, mainly in outer greenfield areas, but most of the growth was large buildings. Between 2010 and 2024, 89% of new dwellings within 25kms of the CBD were apartments, and 61% were in buildings of 50 or more (Figure 1B). The growth spurt was likely caused by a variety of factors, including loosening monetary policy that lowered costs for developers, catchup from GFC disruptions to the development industry, and rising demand from domestic housing investors and foreign buyers.[1]

Prices were also breaking records. From Q3 2012 to Q2 2017, the average Sydney price grew 76%, then fell 11% to Q2 2019. This price growth far outpaced rent growth and was widespread across the Sydney market, despite prices barely growing in most other capitals.[2] A likely cause was demand from housing investors (noted in RBA, 2018) – investor credit surged at the same time, and was also concentrated in NSW (Appendix Figure A.1). The price growth has also been attributed to the easing monetary policy (Saunders and Tulip, 2020). This explanation raises some questions, like why price growth was concentrated in Sydney, and why prices reacted more to short-term than long-term interest rates, but these may have valid answers.[3] The

Figure 1

Sydney net dwelling completions*



* From NSW Government completions data.
** Each distance quintile comprises an equal number of SA2s.

subsequent 2017-19 price decline was in part due to novel macroprudential policy that targeted housing investors (Gillitzer and Prasad, 2025), which APRA and RBA implemented due to concerns about investor activity.

Box 1: Matching the completions and transactions datasets

The completions data, from the NSW Government SEED Initiative website, are inferred from water connections and provide the coordinates of each new dwelling completion.[a] The sales and rentals transactions data come from PropTrack, with details of each residential purchase and of most new rental tenancies, including the price or rent, coordinates, address, and dwelling type. The process for matching completions to transactions is nontrivial because the coordinates do not align perfectly, and only the transactions data has addresses.[b]

The matching algorithm is detailed in Appendix A.1. First, transactions are grouped into buildings of five or more apartments using their address text. Second, buildings are matched to completions based on distances between their coordinates. Finally, false matches are filtered out based on additional criteria.

The matching is not perfect, partly due to algorithmic errors and partly because the inferred completions data appear sometimes imprecise. Nevertheless, the matching offers two independent measures of each building's size – from the transactions and from the completions – and they are strongly related (Appendix Figure A.4). Manual inspection of matches using Google Maps Street View – which typically provides photos of the location across various years – also suggests that incorrect matches are rare. Appendix Figure A.5 illustrates a random selection of building matches. Sales are timed in bursts either before or just after the building completion, and included is a correctly identified build-to-rent building in Waterloo, with rental transactions but no sales transactions.

In aggregate, the matched apartment transactions account for around half of all reported completions. This gap could reflect errors in the completions data, missing transactions in the transactions data, and imperfections in the matching. Nevertheless, the validations discussed above indicate substantial information content in the matched data.

a At the time of writing, the data are downloadable under the 'Urban Development Program' title here.
b The coordinates appear quite accurate, but, for example, a large completion or address can contain multiple buildings, and in many cases has a single set of coordinates that sits somewhere between the buildings.

1 For a more detailed discussion, see Shoory and Rosewall (2017).
2 Price growth was also high in Melbourne, but substantially lower than Sydney. See Appendix Figures A.2 and A.3 for details.
3 For example, the contractionary effects of the mining boom downswing could have offset interest rate effects in some cities more than others.

Apartments are often presold 2-3 years before completion

Developers use presales primarily to secure financing. Banks often require that some of the development is sold before lending, sometimes a total value of sales equal to the debt provided (APRA, 2017). Buyers initially pay a deposit of a proportion of the full sale value, often 10%, and the contracts typically include a sunset clause whereby parties can pull out if the dwelling is not occupiable by a specified date.

The matched data show that over 2012-20, apartment 'presale periods' – the time from sale to completion – had a median of about a year, were strongly increasing in the building size, and fluctuated over time (Appendix Figure A.6). For buildings of 300+ apartments, median presale periods were over two years. These patterns are consistent with RBA analysis based on industry liaison, which notes that presale periods are often 2-3 years (Shoory, 2016), and with private-sector reporting of at least 20 months of construction between sales and completion for large buildings (Mirvac Group, 2012, see p152). In NSW, developers can presell prior to development approval and to owning the land (NSW Government, 2022).

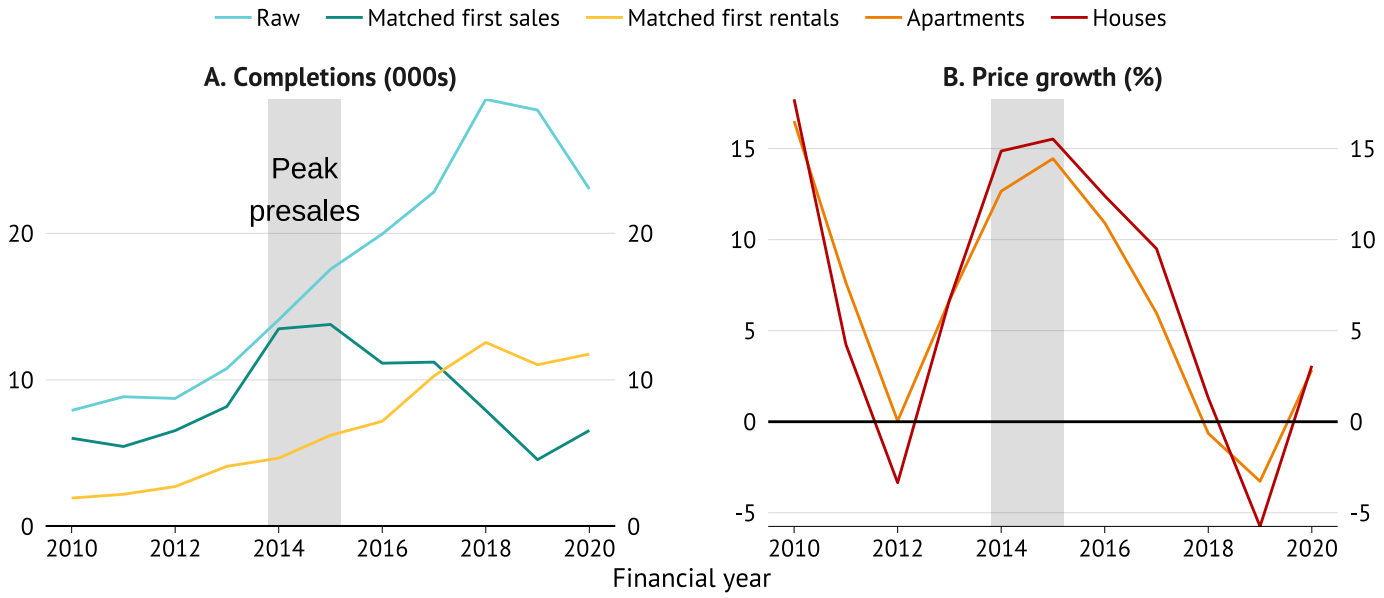
Supply presales peaked when price growth was high and sustained

The matched data show that presales peaked in 2014-15, well before completions peaked in 2018-19 (Figure 2A).[4] Consistent with accurate matching, matched rental occupancies peaked alongside the completions. Peak sales of new supply hit the market when prices were growing fastest (Figure 2B), and price growth above 10% per annum continued for another year. The alignment of peak selling and high price growth is perhaps not surprising, because developers would find it easiest to sell – and to fund new development projects – when the market is strong enough to absorb the selling pressure. This may also explain why presale periods declined around 2018, when price growth had slowed (Appendix Figure A.6B). More informative, however, is that the market absorbed a historically large volume of new apartment sales alongside sustained high price growth.

Figure 2

Sydney apartment completions and prices

Annual



* Raw completions data includes multi-unit completions with at least 5 new dwellings. Price growth is calculated from geometric average prices.

4 The long aggregate lag relative to Appendix Figure A.6 reflects that large buildings, which contributed much to the aggregate at that time, have longer presale periods, and that presale periods generally were highest around that time.

Prices slowed two years later, from 2017, but it is not clear that this supply growth was the cause. In the workhorse user-cost model of housing prices, supply affects prices when the market realises that supply will expand (e.g. Poterba, 1984; Glaeser et al., 2012).[5] Large quantities of presales are very clear signals of how supply will expand in future, so the user-cost model suggests that price effects would occur no later than the presales. In models where buyers face borrowing limits (e.g. Favilukis et al., 2017; Greenwald and Guren, 2025), the price impact can be upon sale, so these models would also have difficulty explaining a price effect later than the presales.[6] An earlier price effect – say in 2012, when price growth was also slow – is consistent with these model mechanisms, but it seems unlikely that buyers would have been that forward looking.[7] The development timeframe noted in Mirvac Group (2012) suggests this would have been before developers bought the land and sought council approvals.

Still, a sizeable effect on prices that was latent or delayed cannot be ruled out. If underlying demand for apartments also shot up when presales peaked, price growth might have been much higher without the supply growth. Underlying demand is difficult to observe, but net overseas migration into NSW did not follow this pattern. Inward migration was relatively low in 2014-15 and relatively high in 2017-19 (Appendix Figure A.10). Alternatively, buyers may not have thought about the supply growth and its potential effects on their rental yields – and not have factored this into their willingness to pay – until they saw the supply completed. Sydney rent growth dipped in 2019 (Appendix Figure A.9C), which has been linked to the supply growth (e.g. Debelle, 2019), although the rent dip was not more prominent in areas where supply grew more (Appendix Figure A.9B).[8]

Under alternative interpretations, upward price pressures still overwhelmed any supply effect

Another possibility is that the the 2012-17 price growth was partly a speculative bubble, and the price effects of the new supply did not show up until the 2017-19 correction.[9] The bubble explanation is consistent with APRA and RBA's concerns about investor credit, and maybe the accumulation of supply sold in 2014-17 helped to pop the bubble. Under this explanation, supply effects on prices would be better gauged by factoring in the 2017-19 price decline. From Q3 2012 to Q1 2019 (trough to trough), Sydney apartment prices grew 49%, averaging 6.3% per annum, compared to annual CPI inflation below 2%. That is, alongside the historically high supply growth, price growth was relatively high whether measured to 2017 or 2019.

For context, the raw completions data report 209 000 net dwelling additions completed in financial years 2015-20, or 12.2% of Greater Sydney's total 2011 housing stock (1.72 million dwellings).[10] Saunders and Tulip (2020) estimate that a 1% increase in the housing stock lowers prices by about 2.5%, and note other researchers' price-effect estimates in the range of negative 1.1-3.6%. This range of estimates would imply that this supply growth, despite being at record levels, was only 20-50% of the amount required to bring housing price growth down to CPI inflation.[11]

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5 In the user-cost model, supply growth lowers rents at the same time, and lower rental yields reduce the prices that buyers are willing to pay – see Fox and Tulip (2014) for an Australian application. The price impact happens when the market realises supply will be built and therefore that future rents will be lower. For example, Kaplan et al. (2020) model how a boom-bust episode in housing prices can be generated just by changes in beliefs about the likelihood of a future tightening of land supply (in section V.A.3).

6 These models typically generalise the user-cost model to allow lenders to place limits on how much buyers can borrow, such as loan-to-value or loan-to-income limits. None appear to explicitly model supply effects in a credit-constrained market, but the price impact would most likely happen upon sale, as commonly modelled in other markets where buyers have limited access to funding (e.g. Brunnermeier and Pedersen, 2009). That is, buyers with the highest capability to pay leave the market after purchase, leaving only buyers with lower purchasing power. In the Australian market, a user-cost model without credit constraints (or other reasons why different buyers are willing or able to pay very different amounts) would have difficulty explaining why housing investors ever purchase. Compared to owner occupiers, investors face substantially higher tax and therefore strictly lower potential returns. In a standard user-cost model, occupiers would therefore always have higher willingness to pay and always be the successful buyer.

7 A likely contributor to the 2012 price decline, evident in Figure 2, was that monetary policy was at its tightest point of the cycle.

8 This is consistent with Garvin (2025), which shows that rent growth across 2008-24 was not higher in capital cities than in regions, despite capitals being generally accepted as more supply constrained.

9 Glaeser and Nathanson (2015) discuss relevant models of bubbles in housing prices.

10 Completions in 2015-20 are a proxy for new supply sold in 2012-17 (noted in Appendix A.2), given the lag between sale and completion. The 2015-20 interval also captures the period of high supply growth (see Figure 1).

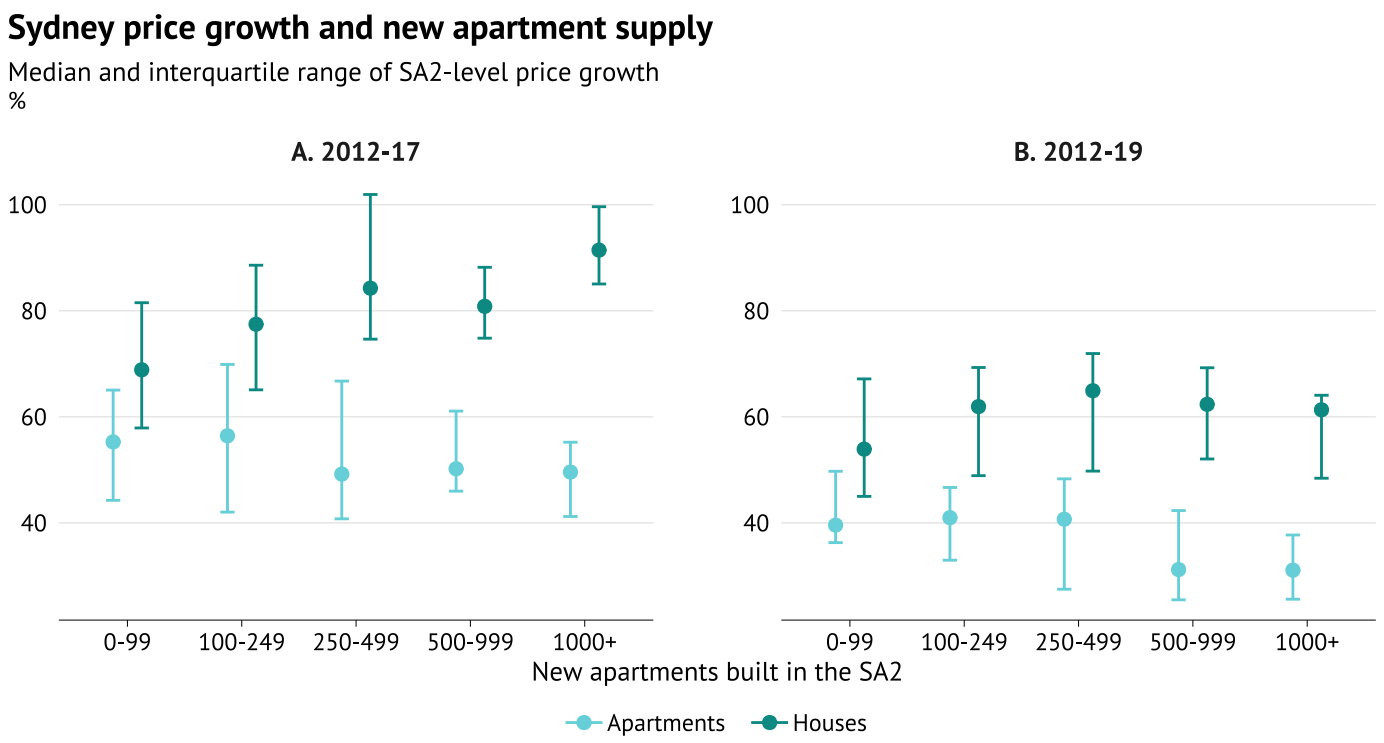
11 The 50% upper bound uses a supply effect of 3.6% and considers the real housing price growth (for houses and apartments) of 57 – 13 = 44% over Q3 2012 to Q2 2019. The 20% lower bound uses a supply effect of 1.1% and considers the real housing price growth of 76 – 9 = 67% over Q3 2012 to Q2 2017. Both calculations use the 12.2% figure for observed supply growth, noting that presale periods dropped sharply around 2018 (Appendix Figure A.6), so counting completions past 2020 would likely be an overestimate.

Detached house prices grew quickly in high supply-growth areas

Across 2012-19, areas within Sydney that had more supply growth had lower apartment price growth (Figure 3), consistent with a negative effect of supply on prices.[12] The relationship is less noticeable when supply growth is gauged as a percentage of the existing housing stock (Appendix Figure A.7), which makes comparison with the estimates noted by Saunders and Tulip (2020) difficult.[13] Like the qualifications in previous sections, other influences could mean that the true effects of supply on prices could be different to what Figures 3 and A.7 suggest. For example, the price effects of new supply can spread out to other areas without supply growth, if buyers that would have bought in those areas buy where supply grew instead.

Either way, a clear difference emerges between apartment and detached house price patterns. Over 2012-17, detached-house price growth was *positively* related to apartment supply growth (Figure 3A), which flattened out in 2017-19 (Figure 3B).[14] This suggests that apartments and houses were being affected differently by supply conditions, which would be consistent with other signs that the two segments can have different price drivers. For example, over 2020-25, Sydney and Melbourne apartment prices moved sideways while house prices shot up (Appendix Figure A.2).

Figure 3



* SA2-level price growth calculated from geometric average prices and excludes new dwellings. New apartments are multi-unit completions in 2015-20. SA2s without at least 10 transaction observations in each year are excluded.

The different outcomes for house and apartment prices is evidence of limited price spillovers between the two market segments. One possible explanation for the patterns is that demand for all housing grew in the areas with high supply growth. In this case, the new apartment supply could have offset the demand effects on prices for apartments, but not for houses, due to the limited price spillovers. Another possibility is that in the high supply growth areas, houses became more scarce as they were demolished to build apartments, which lifted their prices.[15]

12 Throughout this note, areas are mostly measured by ABS Statistical Area Level 2 (SA2), which are similar sizes to postcodes. Sydney contains 373 SA2s.
13 Recent research also concludes housing price growth differentials across US cities are not explained by supply restrictions (Louie et al., 2025).
14 These relationships are little changed when new supply of detached houses is also included (Appendix Figure A.12). The differences between houses and apartments also look similar when comparing only houses and and apartments within the same SA2 (Appendix Figure A.8).
15 Another potential explanation is that rezoning of some areas simultaneously lifted apartment supply and made the land associated with detached houses more valuable, due to the potential to develop that land. Under this explanation, the positive relationship between house prices and new supply should be localised to the area that was rezoned. However, the house price patterns are similar for areas near the high supply-growth areas that did not have high supply growth themselves (Appendix Figure A.11). This suggests that other explanations are more likely.

Discussion and policy implications

The patterns shown in this note are not conclusive about what causes price changes, mainly due to the difficulty of isolating supply effects from other influences. Several studies present causal evidence that relaxation of supply constraints in the form of land-use regulations can lower prices, but evidence on *how much* of observed price growth is driven by supply shortages – and supply shortages of which types of housing – is much less clear. The results in this note inform about the relative importance of different explanations of Sydney's housing price growth. There are several policy implications.

The weak relationship between growth in the housing stock and prices. The record quantity of presales in the middle of the Sydney 2012-17 price boom raises questions about the ability of growth in large apartment buildings to reliably overcome other price pressures. The price growth differences between high and low supply-growth areas were consistent with a negative effect of new apartment supply, but the highest-supply growth areas still had substantial price growth.

Affordability policy that extends to other areas, such as tax and transfer reform, might better target other potential drivers of price growth, at lower cost. Prior and forthcoming e61 work shows that both the pre-reform and recently announced capital gains tax designs incentivise investor leverage and demand (Kaplan et al., 2025; Garvin and Nolan, 2026), which a leverage-neutral tax design would address (e.g. Dwyer et al., 2026). The recent Budget has demonstrated political will for reform in this space. Other fruitful reform areas could include tax settings for owner occupiers – who are fully exempt from capital gains tax – and the treatment of housing assets in means testing for the age pension. These types of reform are likely to soften price growth, make the tax system more conducive to economic growth, and require less resourcing than large-scale construction.

House and apartment market segmentation. Supply of large apartment buildings has had a different relationship with apartment prices than with house prices (Figure 3). This indicates segmentation between the house and apartment markets, consistent with other evidence of segmentation, such as the divergent post-2020 price growth in both Sydney and Melbourne (Appendix Figure A.2). These patterns suggest that buyers do not generally view all types of housing as substitutable for one another. If they did, rising prices in one segment would push buyers into the others, lifting prices there, and prices would move together overall. It is possible that some buyers want houses rather than apartments because they want land, either due to personal preferences or due to expectations of higher capital gains.

One policy implication is that supply growth focused on large apartment buildings may only cater to a limited part of the population, such as households with few or no children (Coates et al., 2025 also support more focus on medium-density supply growth). A related implication is that a lack of price spillovers between housing types puts limits on how supply growth of one type can affect aggregate prices. Much of the recent causal research on loosening supply constraints focuses on Auckland's major 2016 upzoning (e.g. Greenaway-McGrevy and Phillips, 2023; Greenaway-McGrevy and So, 2023), which mostly prompted more townhouses (Blick, 2022). On the spectrum of housing density types – from houses with plentiful land to apartments in large buildings – townhouses and medium density apartments sit closer to the middle, and potentially have price effects that spill over more widely.

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APPENDIX: FURTHER DETAILS AND FIGURES

A.1. The matching algorithm

The algorithm runs on three datasets:

1. Sales: PropTrack sales transactions
2. Rentals: PropTrack rental transactions, which captures new tenancies following a listing.
3. Completions: NSW Government completions microdata

In addition, lot polygon data – i.e. data describing the spatial boundaries of lots – were sourced from OpenStreetMap using the R package osmdata. These provide a recent snapshot of the estimated boundaries for individual lots, but do not cover all of Sydney. This permits assigning polygons to some of the transactions and completions, if their coordinates fall within those polygons.

Define a 'first rental' and a 'first sale' as the first occurrence of that type of transaction for any individual dwelling.

The algorithm follows the sequence:

1. For each sale and rental, obtain a building address by removing the text for apartment/unit/lot/etc numbers. Assign each unique combination of building addresses and coordinates its own 'building ID'. (Apartments in the same building usually share the same coordinates, but some building addresses have multiple sets of coordinates within them.)
2. Drop any building addresses with less than 5 unique dwellings in the address.
3. Remove completions with net completions less than five, or reported completions date before July 2006 (a year before the PropTrack data begins).
4. Based on the coordinates in each dataset, find all sales and rental transactions that were within 50 metres of a reported completion, and match those transactions to that completion. (More specifically, within 0.0005 of a latitude/longitude unit from the completion.) Note that any given transaction can get matched to multiple completions.
5. For each building ID-completion ID pair (a 'rough match'), calculate an 'imputed completion date' based the timing of its first rentals. This is the first quarter when there was a rental and any of the following were satisfied: there were first rentals in the next two consecutive quarters; there were at least two first rentals that quarter and at least in the following quarter; or there were at least three first rentals that quarter.
6. Drop rough matches whose imputed completion date is in the first year of transactions data (FY 2008). These 'first rentals' are more likely to be due to the start of the sample than actual new dwellings.
7. Drop rough matches where more than half of the first rentals occurred before the reported completion date.
8. Drop rough matches where 20% or more of first rentals happened before the reported completion date **and** before the imputed completion date.
9. If a building ID has rough matches with multiple completions, and the building ID and each of the completions it's matched to have assigned polygons, keep only the rough match where the building ID and completion are in the same polygon.
10. Where a building ID is still in rough matches with multiple completions, keep only the rough match that has the minimum distance between the transaction coordinates and the completion coordinates.

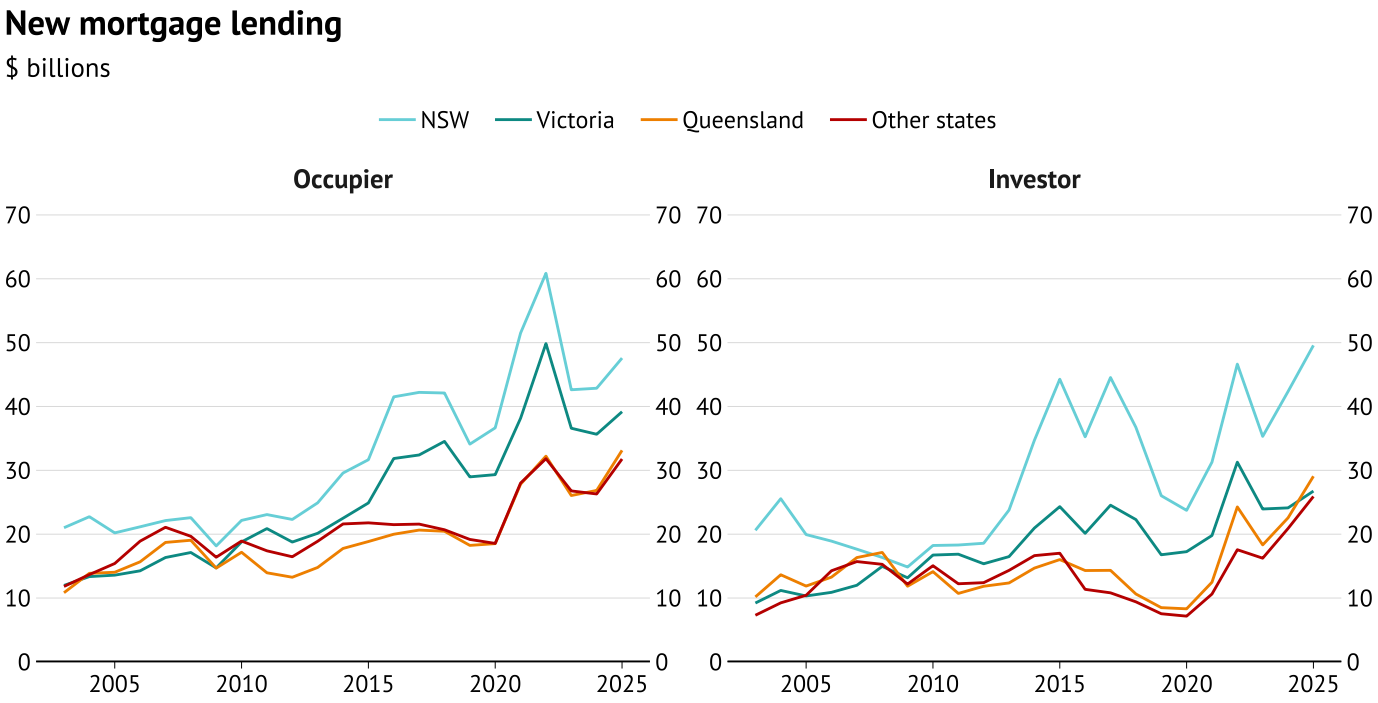
A.2. Notes on data and definitions

Some things to note about the definitions used and the data are:

- *Townhouses are removed from the price analysis.* All of the price analysis removes dwellings classified in the PropTrack data as townhouses, which comprise 4% of all Sydney transactions across FYs 2008-24. These dwellings do not fit neatly into the house or apartment definitions, and comprise too small a sample to include as their own category.
- *Exclusion of new dwellings from figures.* Figure 3 and some appendix figures state that new dwellings are removed from price calculations. This is so that new dwellings, which could have different characteristics to old dwellings (e.g. see Garvin and Maltman, 2024), do not bias the price growth calculations. The exclusion involves narrowing the transactions data to only dwellings that were observed in either the sales or rentals data in FYs 2008-12. For the rental analysis in Figure A.9, the window is extended to FYs 2008-15 for dwellings observed in rental transactions and FYs 2008-12 for dwellings observed in sales transactions.
- *Measuring supply growth over 2015-20 in supply-growth figures.* Figure 3, and related figures in the appendix, compare price growth over 2012-19 with supply growth. These figures use completions over 2015-20 as the measure of supply growth to account for the lag between sales and completions in a simple and clear way.

A.3. Additional figures

Figure A.1

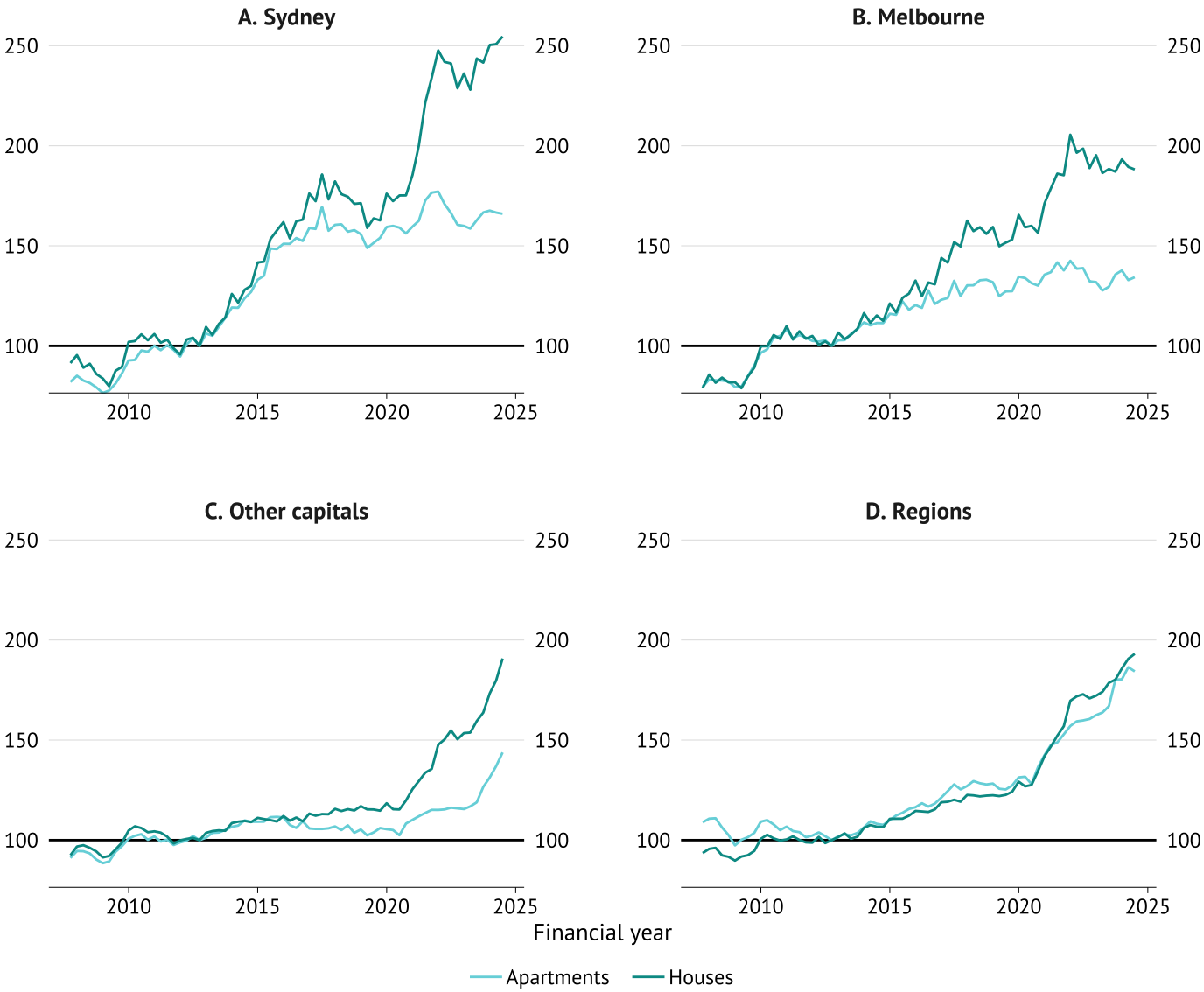


* Mortgage commitments for all dwellings, excluding refinancing, from ABS tables 560104, 560114, and 560124. First home buyers are owner occupiers and excluded from the occupier category.

Figure A.2

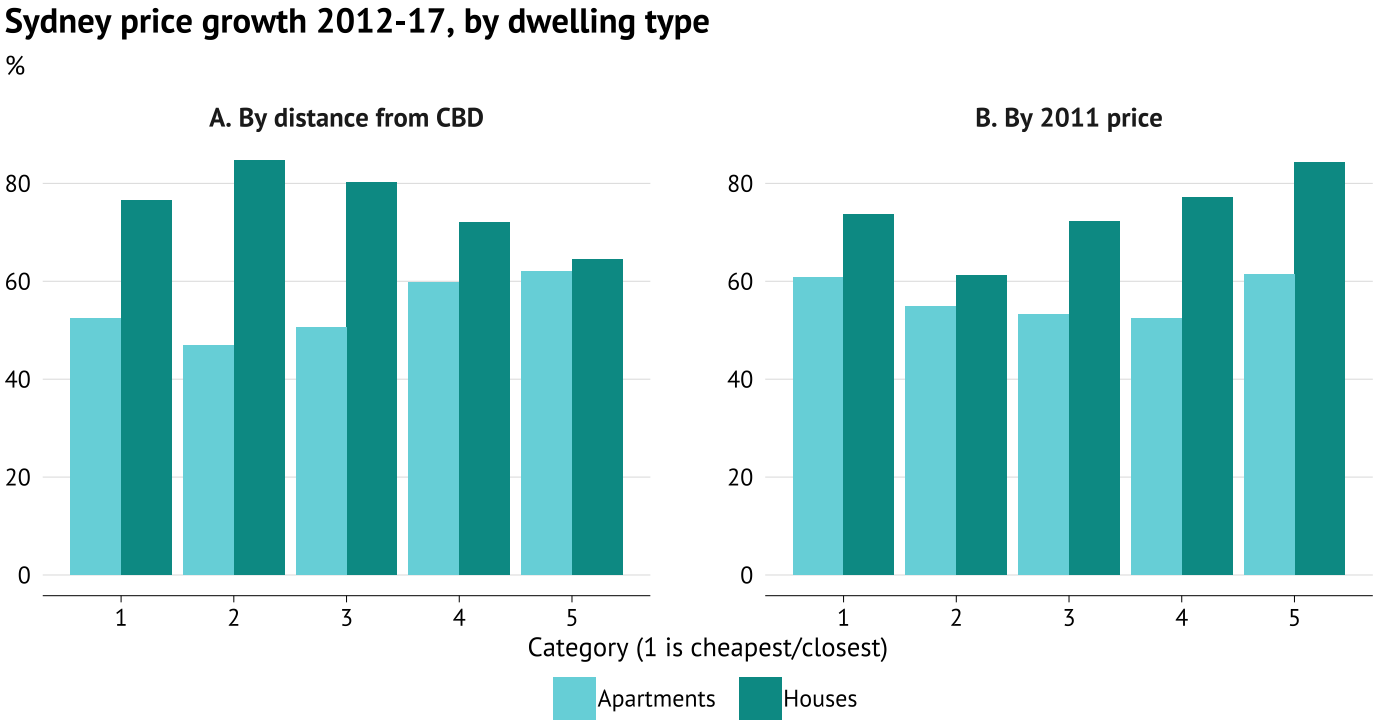
Housing prices by greater capital city area

Geometric average price, indexed to Q2 2012*



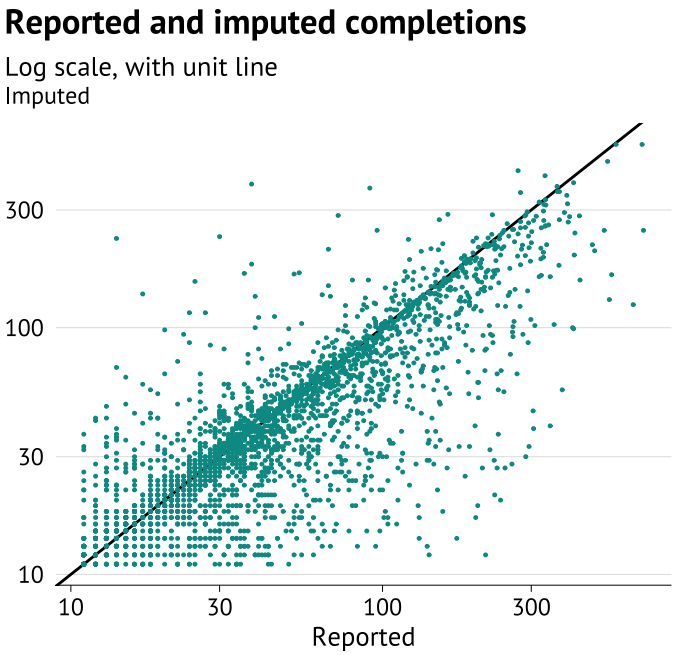
* Exponent of average log prices from all transactions in the labelled GCCSA/s in that quarter.

Figure A.3



* Excludes new dwellings. Growth rates calculated from geometric averag prices in the 2012, 2017 and 2019 calendar years. Each category contains one fifth of all Sydney SA2s in which transactions occurred. Price quintiles based on 2011 SA2 averages, within property types.

Figure A.4



* Imputed from matching sales and rental transactions to completions data. Unit line in black. Graph truncated above 10.

Figure A.5

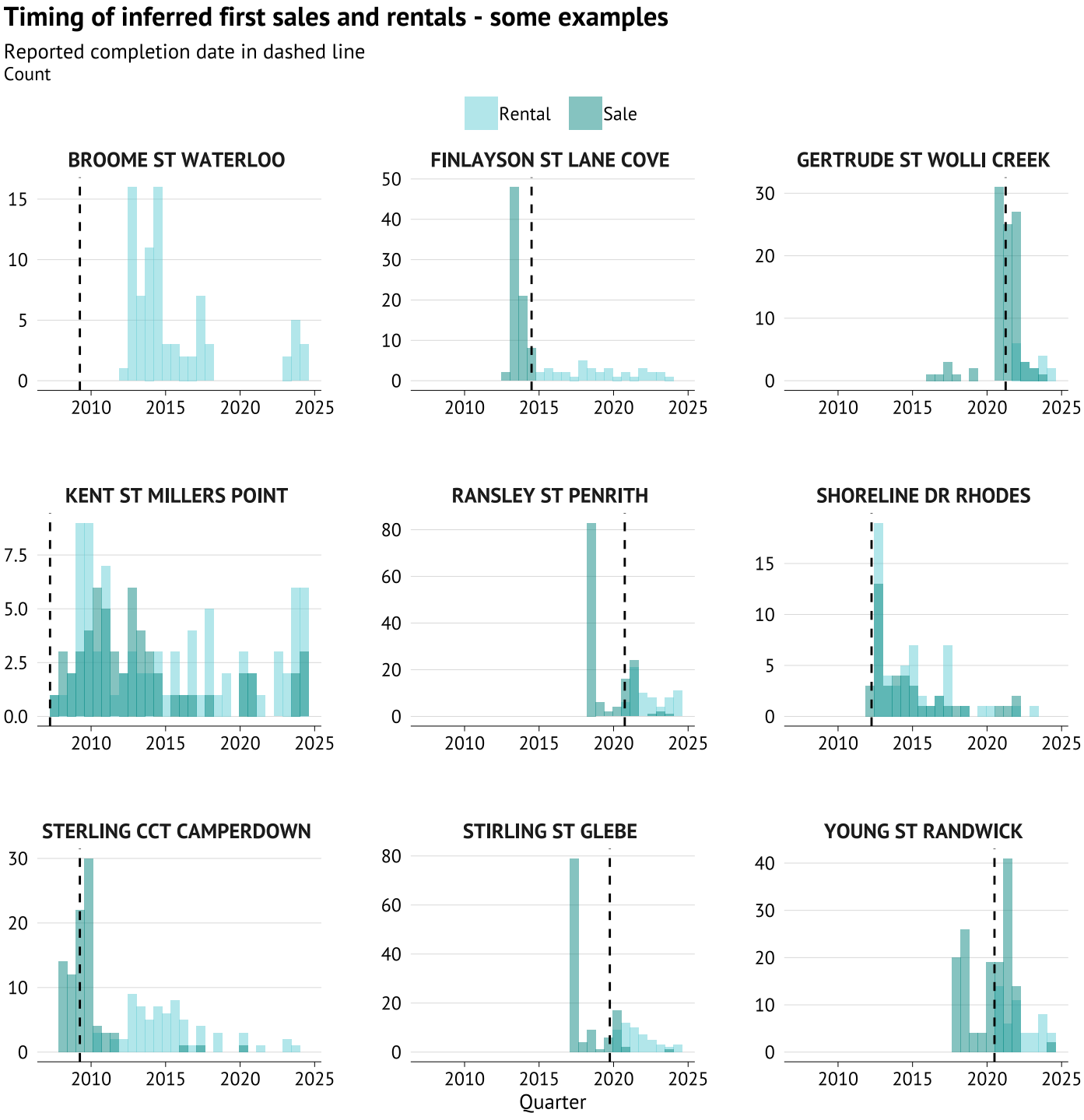
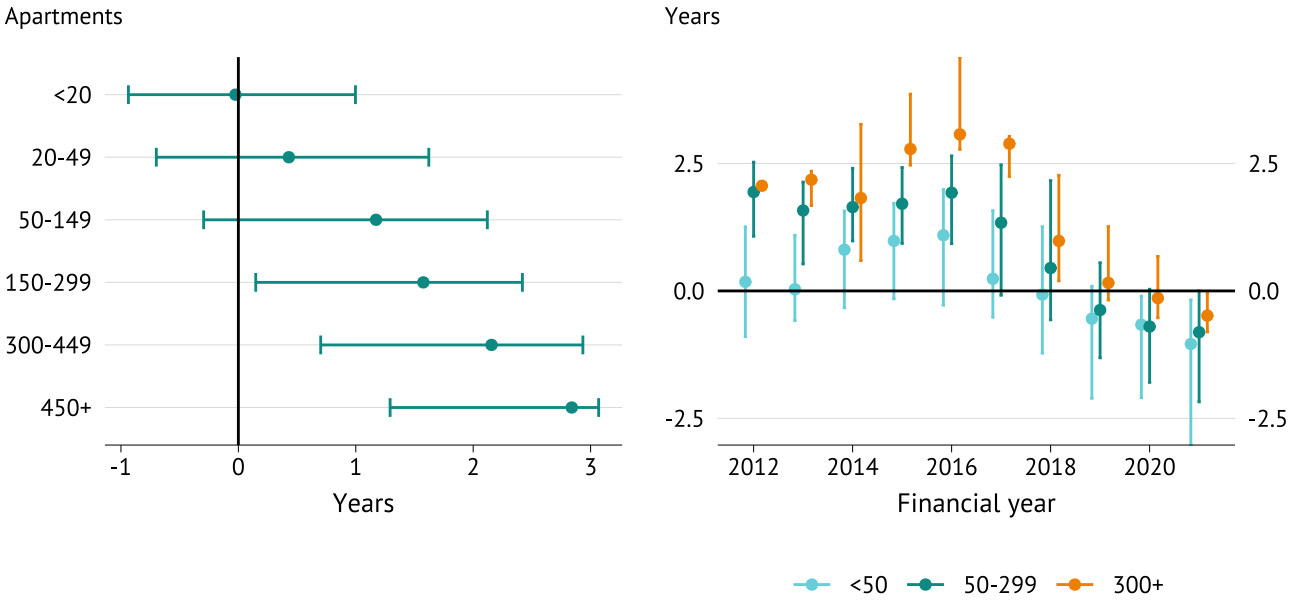

Timing of inferred first sales and rentals - some examples
Reported completion date in dashed line
Count
Rental
Sale
BROOME ST WATERLOO
FINLAYSON ST LANE COVE
GERTRUDE ST WOLLI CREEK
KENT ST MILLERS POINT
RANSLEY ST PENRITH
SHORELINE DR RHODES
STERLING CCT CAMPERDOWN
STIRLING ST GLEBE
YOUNG ST RANDWICK
Quarter

Figure A.6

Presale timing of Sydney apartments

Median and interquartile range of presale periods

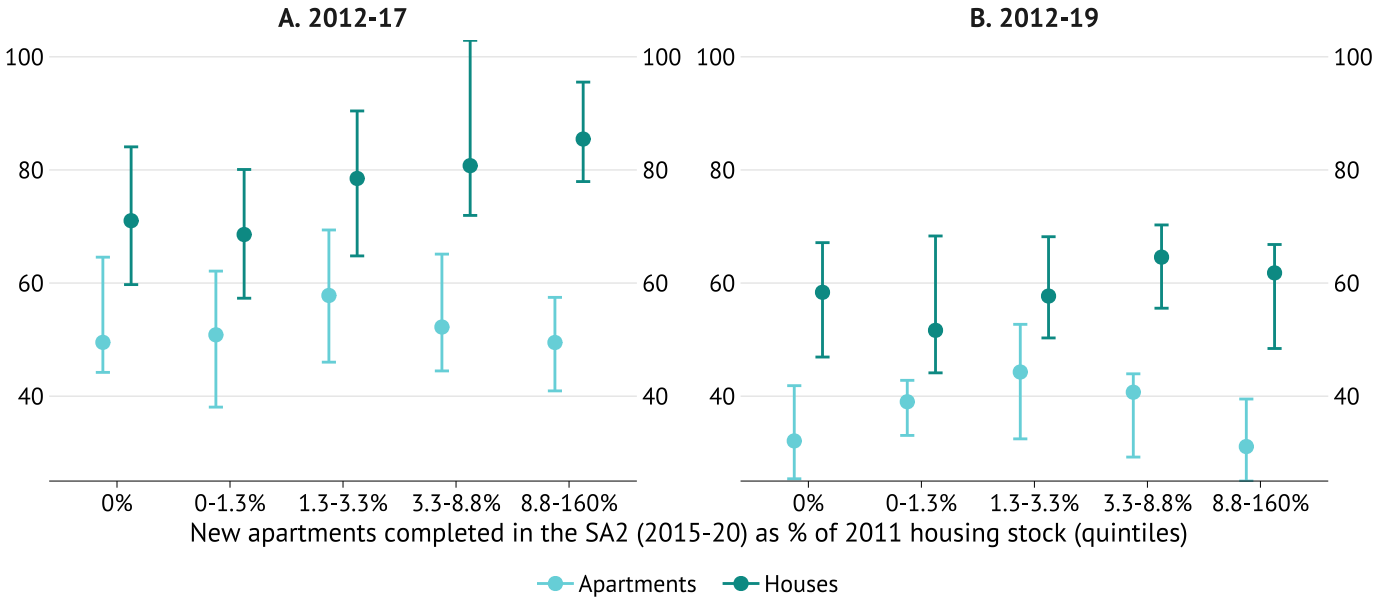


* Sample covers transactions in 2012-20 to permit four years of completions data either side. Building size imputed from number of unique dwellings in transactions data matched to that completion. Completion date is as reported in the data.

Figure A.7

Sydney price growth and apartment supply growth

Median and interquartile range of SA2-level price growth
%

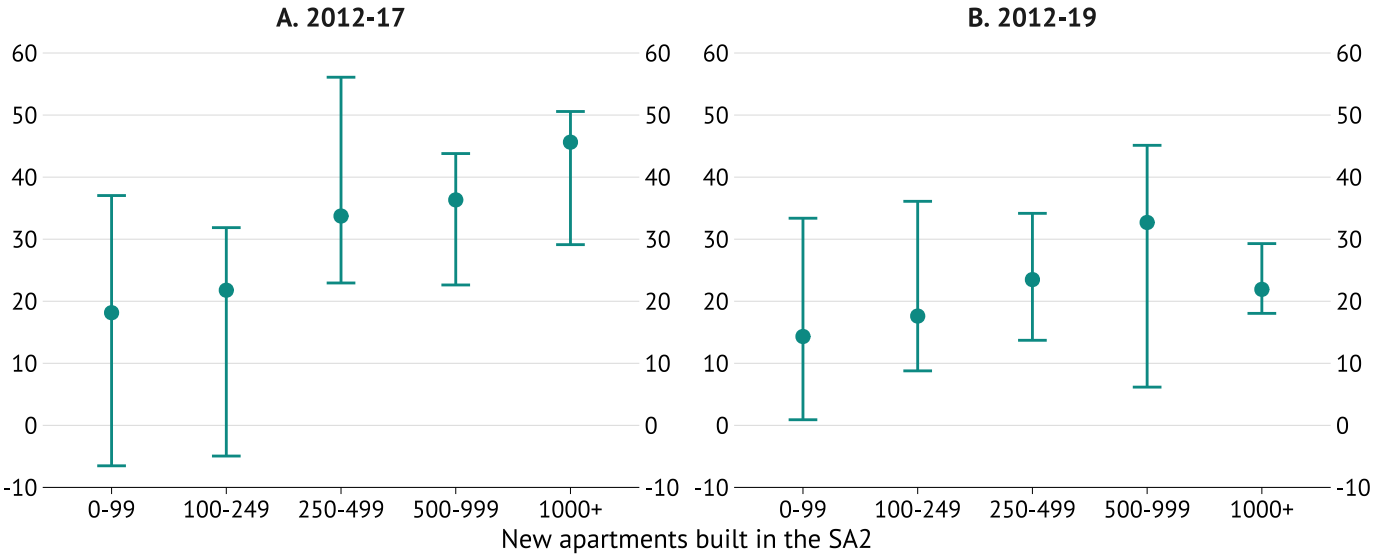


* SA2-level price growth calculated from geometric average prices and excludes new dwellings. New apartments are multi-unit completions in 2015-20. 2011 housing stock measured from August 2011 census. SA2s without at least 10 transaction observations in each year are excluded.

Figure A.8

House-apartment price growth differential within SA2s

Median and interquartile range of SA2-level price growth
%



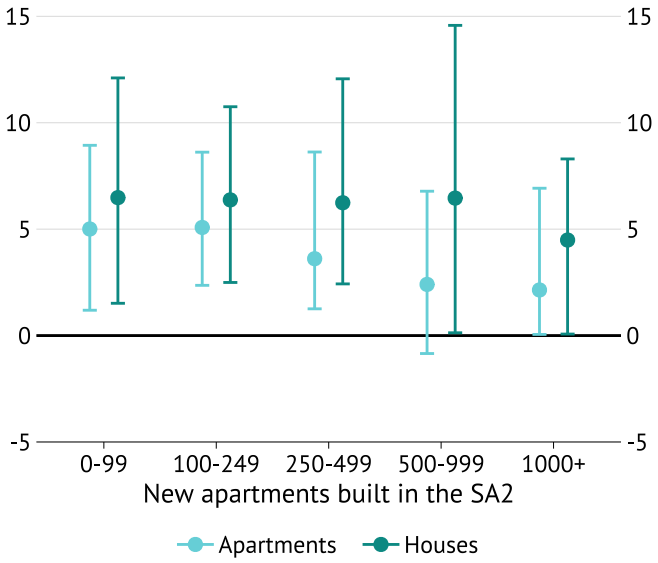
* For each SA2, this figure uses the difference between the house and apartment price growth numbers in Figure 3. SA2s without observations for both houses and apartments (after applying the data filters in Figure 3) are dropped.

Figure A.9

Sydney rent growth

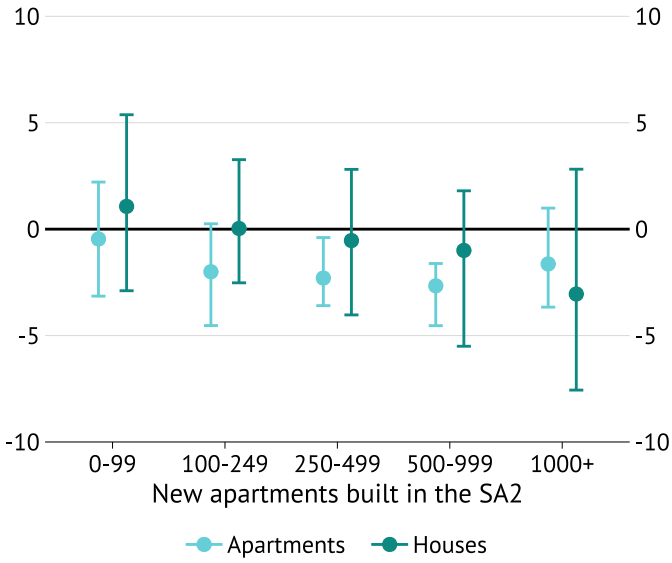
A. By new apartment supply

2015-19 rent growth (%)
Median and IQR across SA2s



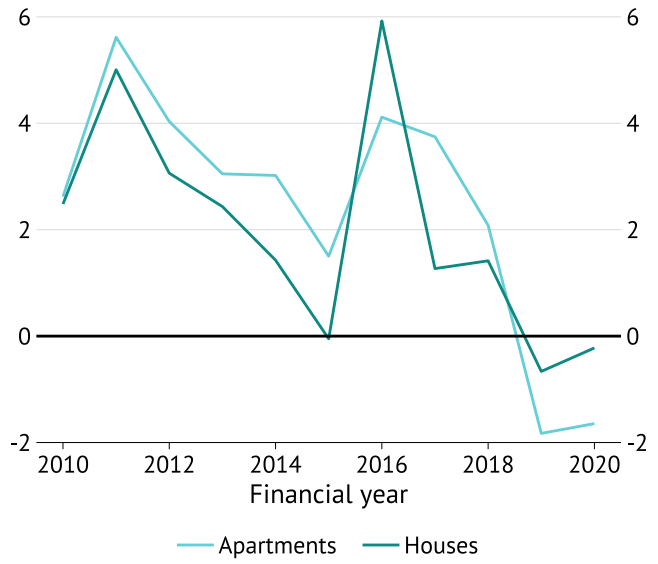
B. By new apartment supply

2017-19 rent growth (%)
Median and IQR across SA2s



C. Total

Annual %

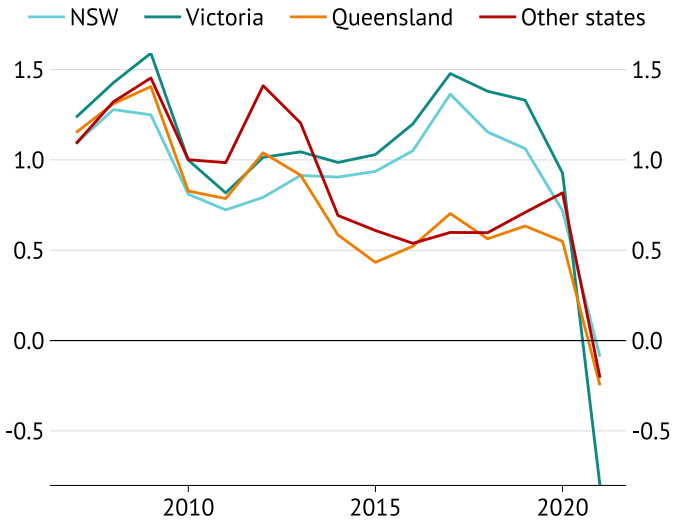


* Annual growth calculated from geometric average rents from all transactions. SA2-level rent growth calculated from geometric average rents and excludes new dwellings. New apartments are multi-unit completions in 2015-19. SA2s without at least 10 transaction observations in each year are excluded.

Figure A.10

Net overseas migration

Annual, % of population

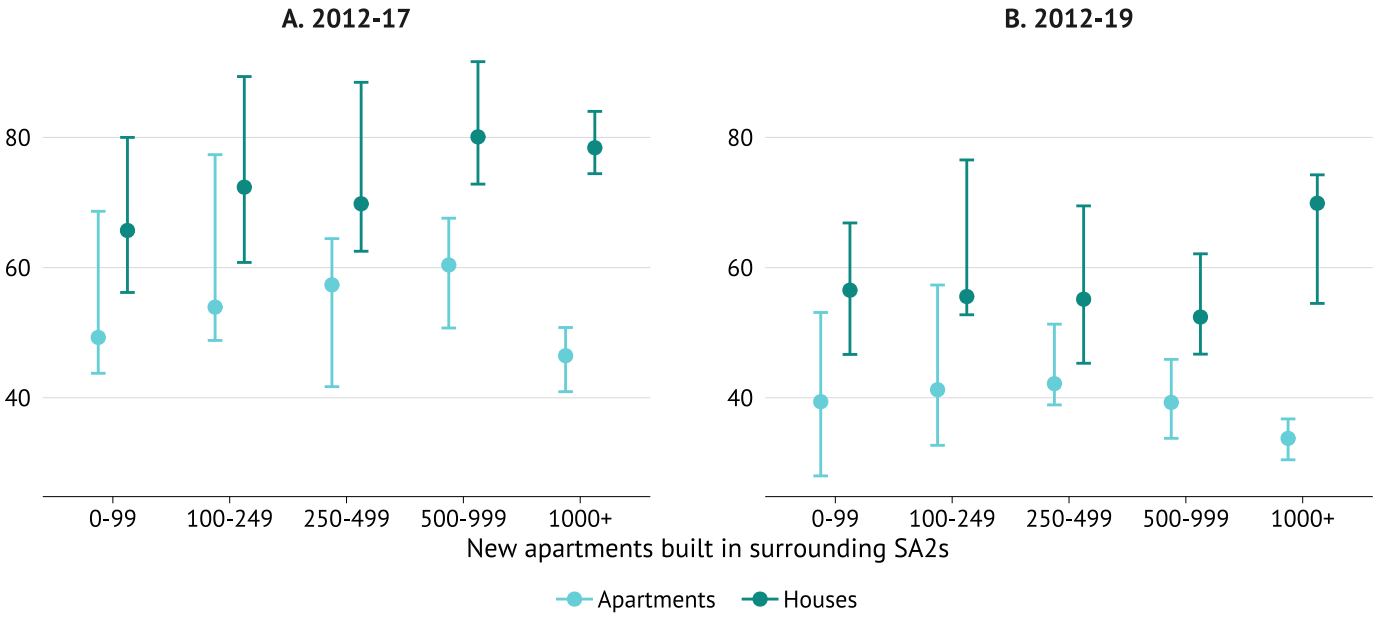


* From ABS tables 8752.0 and 3101.0.

Figure A.11

Sydney housing price growth and nearby new supply, for low supply areas

Median and interquartile range of SA2-level price growth
%

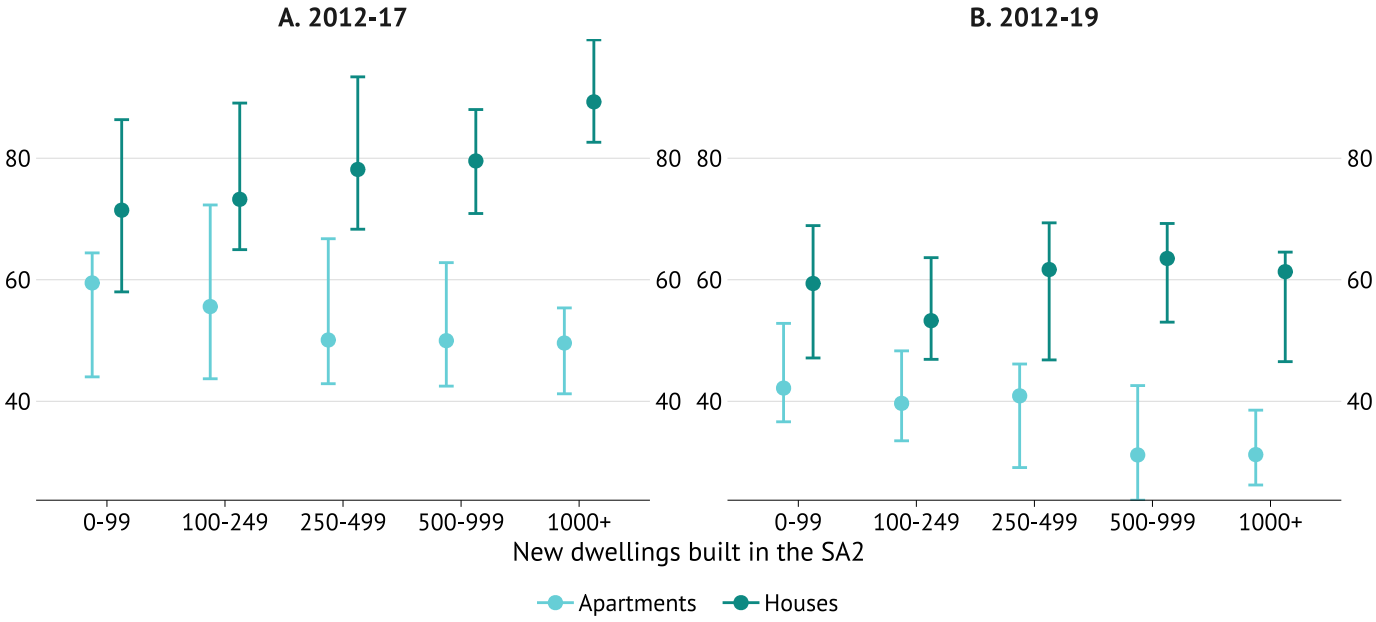


* Only includes SA2s with less than 250 new apartments. Nearby supply measures the average new supply in the bordering SA2s. SA2-level price growth calculated from average log prices and exclude new dwellings. New apartments are completions in 2015-20. SA2s without at least 10 transaction observations in each year are excluded.

Figure A.12

Sydney price growth and new supply of both houses and apartments

Median and interquartile range of SA2-level price growth
%



* SA2-level price growth calculated from average log prices and exclude new dwellings. New dwellings built are completions in 2015-20. SA2s without at least 10 transaction observations in each year are excluded.

B.1. OpenStreetMap

The OpenStreetMap data used by matching algorithm are available under the Open Database License.

B.2. PropTrack

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