

EXECUTIVE SUMMARY

FINAL REPORT NO. 421

House price dynamics and internal migration across Australia



From the AHURI Inquiry: Inquiry into projecting Australia's urban and regional futures: population dynamics, regional mobility and planning responses

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Publication Date May 2024

DOI 10.18408/ahuri4130401

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ISBN

ISBN: 978-1-922498-89-2

Key words

House price spillovers, house price interconnectivity, internal migration, regional cities, regional migration, housing submarkets.

Series

AHURI Final Report

Number

421

ISSN

1834-7223

Publisher

Australian Housing and Urban Research Institute Limited
Melbourne, Australia

DOI

DOI: 10.18408/ahuri4130401

Format

PDF, online only

URL

<https://www.ahuri.edu.au/research/final-reports/421>

Recommended citation

Yanotti, M.B., Kangogo, M., Wright, D., Sarkar, S. and Lyu, F. (2024) *House price dynamics and internal migration across Australia*, AHURI Final Report No. 421, Australian Housing and Urban Research Institute Limited, Melbourne, <https://www.ahuri.edu.au/research/final-reports/421>, DOI: 10.18408/ahuri4130401

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Acknowledgements

This material was produced with funding from the Australian Government and state and territory governments. AHURI Limited gratefully acknowledges the financial and other support it has received from these governments, without which this work would not have been possible.

AHURI Limited also gratefully acknowledges the contributions, both financial and in-kind, of its university research partners who have helped make the completion of this material possible.

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Executive summary

Key points

- Regional cities and suburban fringe areas play an increasingly important role in influencing national patterns in Australian housing prices.
- Internal migration determines the way in which housing price increases in one housing submarket increase housing prices in other submarkets.
- The relationship between house prices across different housing submarkets has changed considerably since 2020, reflecting differences in the impact of Covid-19 and varying responses from state and territory governments.
- The unexpected increase in migration to regional cities and fringe areas led to a housing-supply imbalance in regional and rural areas—particularly for affordable housing. This highlighted the need for government policy, and both public and private investment, to intervene through targeted strategies.
- There is a need for coordination across councils and different government levels when implementing housing policy. This coordination needs to be applied to both demand-side and supply-side policies.
- Policy makers can use housing market data as indicators of population migration to inform more timely decisions about regional investment, internal migration policy and macroeconomic setting.

Key findings

This project is part of the AHURI Inquiry on *Projecting Australia's urban and regional futures: population dynamics, regional mobility, and planning responses*. It analyses how house prices in Australian regional submarkets affect and are affected by one another, and how migration interacts with the interconnectivity across housing markets.

'Housing submarkets' is a term used to describe the limits of where people are prepared to live and move to/from, based on housing stock, location, connection to job opportunities, education, availability of amenities and transport, amongst others. In this report, we define housing submarkets in a spatial way, following local government area (LGA) delimitations, based on land use regulations.

The overarching research question it addresses is:

- What are the housing market spillover effects of urban and regional population change in Australia?

We define house price 'spillover effect' as the dynamic where housing price changes in one market spread to other housing markets, impacting community welfare. To answer this question, the project addresses four sub-questions:

1. How has connectivity between housing submarkets in Australia changed over time?
2. How did the Covid-19 pandemic affect housing connectivity in Australia, both within states and across states, and how does this compare to longer-term trends?
3. What are the main drivers of house price spillovers across regional submarkets?
4. What is the effect on regional housing market price, affordability, housing supply and population change from spillover effects over time?

With the Covid-19 pandemic, regional cities and fringe areas became important players in house price dynamics across Australian housing submarkets. This is reflected in population movements, particularly in the eastern states of New South Wales (NSW), Victoria (VIC) and Queensland (QLD), demonstrating a population trend away from the inner-metropolitan areas of state capital cities and towards suburban fringe and regional city areas.

House prices in Australia have generally increased since 2000, with particularly high price appreciation in capital cities and high-amenity coastal towns. This resulted in areas of intense housing stress. House price growth had slowed in 2018 before accelerating in late 2020 during the Covid-19 pandemic. House price movements differ widely across Australian states and territories, often driven by specific exposure to key industries. For example, resource-intensive states of QLD, Western Australia (WA) and the Northern Territory (NT) show periods of house price slowdown and negative growth related to localised, industry-related shocks. What is less well-understood is how property price movements in one housing submarket can affect property prices in another (not necessarily contiguous) submarket. We describe these relationships as the 'interconnectivity' between housing submarkets.

In this report, we determine the interconnectivity between house prices across Australian submarkets at both the state level and the local government area (LGA). To do this, we measure the price 'spillover effect' from one housing submarket to another.

In economics, a 'spillover' is a consequence of the functioning of a market that has an impact on the running of another market (Hu and Oxley 2018). A macroeconomic example of a spillover is a recession in one country adversely impacting the economic growth of a major trade partner:

- a spillover 'contributor' is a market that influences others;
- a spillover 'receiver' is a market that is influenced by the spillover contributors.

In our context, house price spillovers from one housing submarket to another happen when increasing house prices in one market lead to predictable increases in other markets. We estimate spillover effects using median house price growth. The spillover measure captures the source, direction and strength of interconnectivity in house price changes between each pair of submarkets.¹ The empirical definition of house price spillover is explained more completely in Section 3.2.

The results from this analysis show housing submarkets are interconnected within states and across states, and that the house price dynamics and connectivity between and across states changed considerably during the pandemic years (2020–2021) strongly reflecting the different ways Covid-19 impacted state and territories and the corresponding government responses. During the pre-pandemic years (2009–2019), we find that QLD, NSW, NT, and Tasmania (TAS) were net contributors to house price spillovers. Conversely, the Australian Capital Territory (ACT), WA, VIC, and South Australia (SA) were net receivers of house price spillovers. During the pandemic period, Victoria became the strongest contributor to house price changes in all other states and territories. This reflects Victorians' response to the state's strict lockdown measures, and highlights the interconnectedness of Australia's housing markets in response to localised shocks.

In our second empirical spillover analysis (Section 4), we classify LGAs into one of the following four submarkets:

- *Metropolitan cities*
- *Fringe suburbs*
- *regional Cities*
- *Rural areas*.

For this analysis, we focus on LGAs in NSW and VIC.

The NSW submarket analysis shows that, before the pandemic, *Metro* and (to a lesser extent) *Fringe* were net contributors of house-price spillovers over *regional Cities* and *Rural areas*. For example, 37.1 per cent of housing price increases in *Fringe* LGAs came from house price increases in *Metro* LGAs, pre-pandemic. These effects changed during the pandemic years, with house price increases in *Fringe* and *regional Cities* contributing to strong house-price spillover effects to other submarkets. For example, during the pandemic, the *Metro-to-Fringe* spillover effect decreased to 13.5 per cent while 46.6 per cent of the house price increases in *Metro* LGAs were determined by house price increases in *Regional* LGAs.

The change in spillover effects is particularly striking for VIC during the pandemic period. We find a strong reversal in the direction and magnitude of the interconnectivity between submarkets for Victoria during the pandemic years. Before the pandemic, VIC *Metro* was the single net contributor of house price spillovers to the other submarkets: the strength of the spillover effect from *Metro* to other submarkets outweighed the strength of the spillover effect it received from other submarkets.

By contrast, in 2020–2021, VIC *Metro* was a net receiver of house price spillovers from other submarkets in the state. Taken together, this means that before the pandemic, the house price dynamics in the metropolitan LGAs of Melbourne (the Victorian capital) were influencing price dynamics in other LGAs. But during the pandemic period, the metropolitan LGAs in Melbourne were being influenced by the house price dynamics in the housing market dynamics of the other LGAs. During the pre-pandemic period, 26.9 per cent of house price increases in the LGAs within the *Metro VIC* got “spilled-over” into *Regional cities*, while during the pandemic period 48.7 per cent of house price increases in *Regional cities* influenced house price increases in the *Metro LGAs* within VIC. Our results highlight the recent prominent role *Fringe areas* and *regional Cities* have in house price dynamics.

¹ The empirical definition of house price spillover is explained more completely in Section 3.2.

In this report, we also explore the relationship between internal migration and house price interconnectivity across markets. We find that net internal arrivals increase the house price connectivity across submarkets —in other words, our findings reveal that internal arrivals into a housing submarket are likely to intensify house price increases spreading into other markets, while internal departures from a region will intensify the chances of that region receiving house price effects from other housing markets' dynamics. These results are statistically significant even after controlling for a set of variables related to housing affordability, employment and locational factors.

This confirms that internal migration is an important determinant for house price interconnectivity across submarkets. More specifically, we find that:

- a 1 per cent increase in the proportion of the population migrating into an LGA will increase the house-price net spillover index by 3.12 per cent. This increases the probability that the LGA will generate house price spillovers to other submarkets.
- a 1 per cent increase in the proportion of the population departing from an LGA will decrease the net spillover index by 3.70 per cent. This increases the probability that the LGA will be a receiver of house price spillovers from other submarkets.

Policy implications

The findings of this report have several potential implications for policy.

Overall, we show that housing submarkets are interconnected within states and across states, and that the interconnectedness across housing submarkets has changed during the recent Covid-19 pandemic. Our results highlight the recent prominent role Fringe areas and regional Cities have in house price dynamics. Moreover, internal migration increases the house price interconnectedness across housing submarkets.

That is, the findings of this study show that when people move into a particular region house prices increase not only in that region and surrounding areas, but may also extend to other, more distant locations within that region and beyond. The spatial extent of these house price movements in response to people moving into a region can extend as far as non-contiguous areas.

People moving into a region and the consequent house price impacts of that movement may also trigger successive population movements of people moving out of that region, perhaps because they were displaced by house prices and therefore moving to other parts of the state or to other states, triggering a succession of house price impacts in these other areas.

In addition, the findings of this study show that the spatial impacts of people moving into regions and out of cities have changed during the Covid-19 pandemic. Our study shows that population appeared more mobile in response to changing housing market dynamics during the Covid-19 pandemic. This likely reflects the fact that people were able to exercise the option to move from a more expensive housing market to a less expensive housing market by accessing opportunities such as flexible and remote work and lifestyle amenities.

Therefore, people were more likely to generate those impacts by moving in response to a house price trigger. The Covid-19 pandemic appeared to influence not only the likelihood that people might move to other areas in response to housing preference adjustments but also due to house price affordability, making it more likely that they would move to regional areas beyond the metropolitan area.

Summarising, we show evidence of a real response to house price dynamics, in that house prices move when people move in, and people may also move out when house prices go up. But these impacts may be spatially discontinuous: while we expect house price increases in an area to potentially have a rippling effect in neighbouring areas, we find that these ripples might be spatially discontinuous and affect further-away non-contiguous areas.

Moreover, this propensity for people to move in response to house price pressures seemed to have increased during the Covid-19 pandemic. We observed an intensity in house price interconnectedness across housing submarkets, and people appeared to have moved further away into more affordable regional areas accessing flexible and remote work arrangements and lifestyle preferences. This implies that the spatial discontinuity that we found was particularly pronounced during that Covid-19 pandemic.

Recognising the interconnectedness of housing submarkets and the fact that house price displacement can be spatially discontinuous has important implications for housing markets. Understanding intrastate and interstate housing submarket interconnectedness has important implications for forecasting urban migration and for planning metropolitan and regional policy and investment. Lower income renters in regional areas and city fringes are likely to be further displaced if these areas receive an increase in housing demand pushing housing prices in those areas.

Regional cities will need to be ready with supply responses to accommodate potential increased demand. An understanding of housing submarkets interconnectedness will enable state and local governments to predict and prepare for shifts in housing demand through land use planning and infrastructure strategies. Moreover, service providers also need to be aware of housing prices and migration dynamics, with potential gentrification effects and displacement to less resourced areas. Understanding potential spatial movements in response to changing patterns of housing dynamics will also enable service providers to prepare the necessary resources to service a larger population and provide social infrastructure such as schools, hospitals, and other social services. In addition, it may provide direction towards additional investment in social and affordable housing and emergency accommodation.

Regional cities have been suffering higher affordability pressures since the Covid-19 pandemic. The results present an opportunity for government policy, and both public and private investment, to intervene through more timely strategies that address future housing-supply imbalance. The potential benefits of this approach are greatest in regional and rural areas. This is because of the relatively slower increases in housing supply, lower average income and wealth levels of long-term residents, and greater reliance on community networks for support in these areas.

Targeted policies that provide support for households experiencing housing stress, particularly in regional areas—including financial assistance, rental relief, building development policies and housing reform—could be enacted to minimise social disruption and maintain community cohesion. Policy makers could also consider addressing factors that contribute to demand imbalances, such as the increasing presence of short-term holiday letting in regional areas.

In the longer term, increases in appropriate housing supply (including social and affordable housing) require consideration across local government policies for new housing developments. In this regard, policy should focus on the strategic growth and development of regional and rural areas, including education and employment opportunities, to support a potential trend of people moving away from capital cities and into regional areas. Regional investment policy needs to ensure that additional pull factors to regions are balanced with sufficient and appropriate housing supply and services.

Our analysis contributes to national debate on the need for coordination across different government levels when implementing housing policy. This coordination needs to be applied to both demand-side and supply-side policies. The current housing policies across the three different levels of government should be aligned with other supporting policies relating to urban infrastructure and social infrastructure. An extension of greater coordination of housing and economic policy across different jurisdictions is the potential for a planned policy to develop our next mid-sized cities. The current distribution of cities by size in Australia is imbalanced relative to other developed countries. A more balanced urban population distribution can be achieved with a planned policy response that focusses on the growth of small and mid-sized cities.

Another implication of our results is that policy makers could use housing market data relating to sales price and price changes as indicators of population migration to inform more timely decisions relating to regional investment, internal migration incentives and policy, and macroeconomic setting.

There is the potential for greater policy effectiveness if more investment were made in capturing and analysing localised data. Future policy-setting has the potential to be dynamic using real-time data and avoid contemporary issues relating to latency and lagged information.

The study

This project examined house price dynamics across Australian housing submarkets, with particular interest in understanding how price movements in one submarket may affect other submarkets.

This research comprised four main parts.

1. A background scan on internal migration in Australia, exploring migration trends as released by the Australian Bureau of Statistics (ABS) 1-year and 5-year internal migration data from the 2011, 2016 and 2021 censuses. We provide a housing market analysis, using CoreLogic RP Australian house prices for our sample period. We observe annual house price growth rates for median house prices for LGAs for all states in Australia to explore the changes between the interconnection of housing submarkets.
2. Identifying the interconnectedness of house prices across LGAs, and separately across states and territories, by calculating a spillover measure using a recently developed methodology based on a vector autoregressive (VAR) model. VAR models explain simultaneous changes in multiple variables over time, employing their present and past (lagged) values. This approach shows the source, direction, and the strength of price changes and effects (or shocks) from one submarket to another. We split our sample into two distinct periods: the pre-pandemic period from January 2009 to December 2019, and the pandemic period from March 2020 to December 2021. We repeat the exercise by further classifying NSW and Victoria LGAs into four submarkets -- *Metro*, *Fringe*, *Cities*, and *Rural* – in order to interpret results in urban and regional clusters. Section 1.3.1 describes the definition of these four submarkets in detail, Figure B1 in Appendix B shows a map with the submarket definitions for NSW and Victoria, and Tables A1 and A2 in the Appendix provide a list of all the LGAs included in each submarket category for NSW and Victoria respectively.
3. Data collection on migration, average household income, labour market indicators, and some indicators for local amenities and location with the purpose of finding suitable variables to explain the variability in the house price spillover indices. We carry out a regression analysis on the determinants of the house price spillover index.
4. Synthesis of results to discuss how ready housing markets are to receive or mitigate house-price spillover effects based on the results of our regression analysis.



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