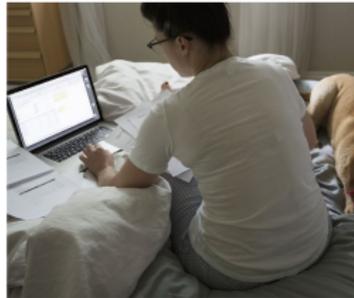


Zoom towns: Housing market 'Influencers' and
Covid-19
ACE2022

Maria Yanotti, The University of Tasmania
Moses Kangogo, The University of Tasmania
Danika Wright, The University of Sydney

Monday 11th July, 2022

How did lockdown treated you?



Felt like a 'covid-change'?

Australians flee cities for refuge in regional retreats

By Shane Wright and Jennifer Duke
November 2, 2020 – 6:20pm

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Sydney and Melbourne residents bring forward sea-change plans due to COVID-19

Aidan Devine
13 Aug 2020

Daily Telegraph

ABS data confirms a city exodus during COVID, with biggest internal migration loss on record

By Business Reporter Emilia Terzon
Posted Tue 2 Feb 2021 at 3:16pm, updated Tue 2 Feb 2021 at 5:39pm

COVID-change: It's the new tree-change or sea-change for city dwellers

ELIZABETH REDMAN SENIOR NEWS PRODUCER | MAY 11, 2020

Regions will be the winners after the coronavirus lockdown

By SIMON KUSTENMACHER
COLUMNIST
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12:04AM APRIL 16, 2020



Internal migration in Australia

ABS statistics show city-dwellers moved to non-capital cities at highest level on record



Source: Australian Bureau of Statistics, Regional internal migration estimates, provisional March 2021

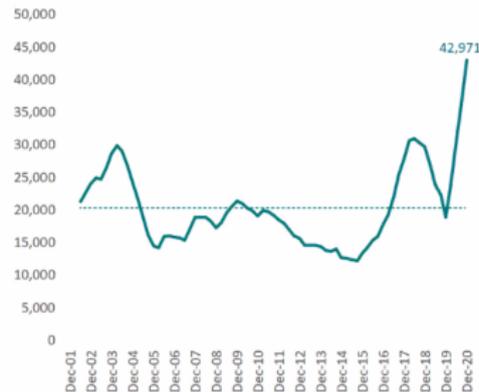
Internal migration in Australia

Net migration gains to regions also driven by decline in regional departures

Arrivals vs departures to regional Australia
(rolling annual)



Net internal migration to regional Australia
(rolling annual)



Zoom towns

In this paper we examine the impact of the Covid-19 pandemic on shock transmissions across housing submarkets within states

- Interested in how pandemic affected submarket price relationships
- Submarket analysis more granular, insights to demographics and longer-term preferences
- Housing market spillovers have implications for policy and understanding risk transmission

Evidence from past pandemics

SARS and the Hong Kong market (Wong, 2008)

- City-wide price decline, temporary and no evidence of over-reaction
- Greater price declines in affected housing estates

Historical disease outbreaks in Europe (Franke and Korevaar, 2021)

- Plague in Amsterdam (C17th) and cholera in Paris (C19th)
- Large but temporary price reductions
- Cities retained their attractiveness and amenity

Covid and property prices

US market activity (D'Lima et al, 2020)

- House prices decline with contagion rate

- Sales volume affected by shutdown orders

- Heterogeneity across different demographics and property characteristics

US market demand (Liu and Su, 2021)

- Housing demand most adversely affected in dense neighbourhoods

- Explained by both lower value of workplace access and access to amenities and city-specific attributes

Covid and Australian house prices (Hu et al, 2021)

Negative relationship between house prices and Covid cases in Australia

Doubling of new Covid cases reduces daily price index by 0.35bps, or 1.26% annualized

Epidemiological factors matter but policy interventions do not

No statistically significant relationship between lockdowns and house prices

Weak evidence of positive state-level spillover from NSW case levels to returns in other capital cities

Covid and regional housing in Australia (Verdouw et al, 2021)

Large variations in Covid experience in regions compared to capital cities and compared to each other

Often concentrated reliance on local industries (e.g. tourism, hospitality)

Regional areas are relatively more socio-economically disadvantaged than capital cities

Higher unemployment

Higher reliance on government pension

Property demand and price pressure leading to worsening affordability in regional areas

Covid had a lasting impact on WFH

Barrero et al (2021) discuss that the WFH effect of Covid will stick around for five key reasons

- Better-than-expected WFH experiences
- New investments in physical and human capital that enable WFH
- Diminished stigma associated with WFH
- Lingering concerns about crowds and contagion risk
- Pandemic-driven surge in technological innovations that support WFH (e.g. evidence from patents, Bloom et al, 2021)

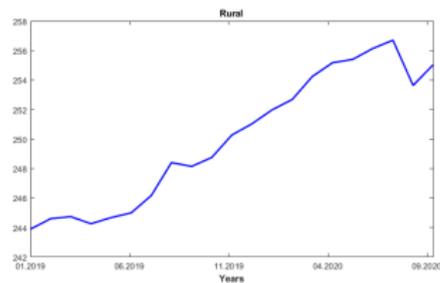
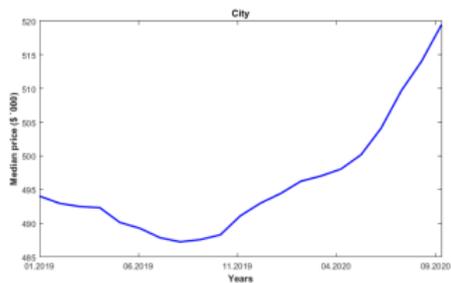
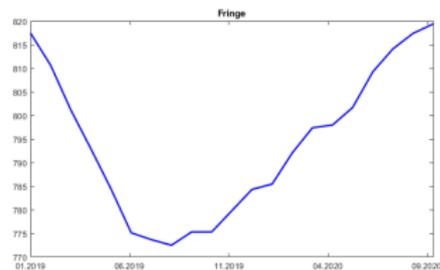
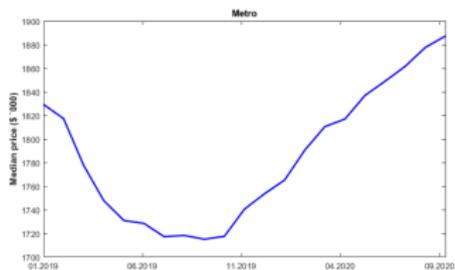
Zoom towns

'Zoom town' is the location that you can WFH and still have core city amenities while reducing housing affordability issues and pandemic risk

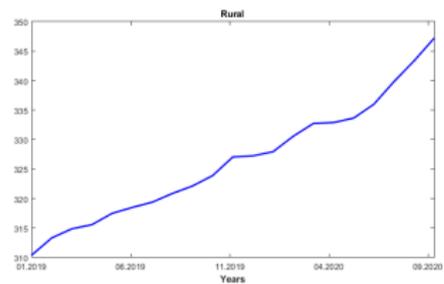
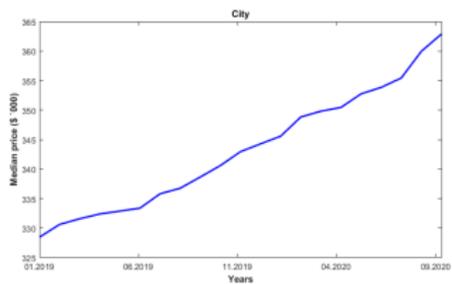
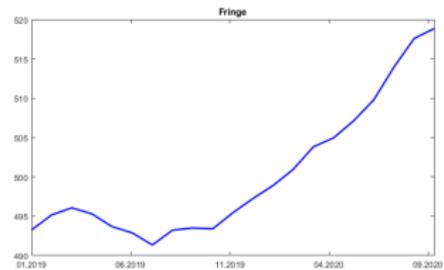
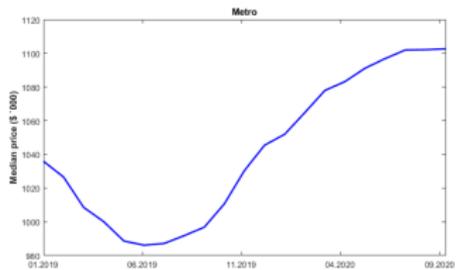
Disaggregate housing market data into four categories:

- Metro capital cities
- Suburban fringe
- Regional cities
- Rural areas

NSW housing submarket prices



Victoria housing submarket prices



NSW and Victoria

Strict but temporary lock-down to counter first-wave
(March-May 2020)

Elimination strategy (relatively successful) meant that impact of lockdown policies greater than adverse health effects

- Relocation possible, and supported in many workplaces where WFH possible
- OHS considerations supported within-state moves

Subsequent differences in state policies and experiences allows for comparison and control for trends

Data and submarket definitions

CoreLogic RP Data Scorecard data (via Sirca)

Monthly median house prices

All LGAs in NSW (128) and Victoria (79)

- Group LGAs into four housing submarkets in each state
- Adapted from the Office of Local Government (OLG) groupings based on ABS Australian Classification of Local Governments (ACLG)

Data and submarket definitions

Metro: capital cities

Sydney, Randwick, Sutherland

Melbourne, Stonnington, Maibyrnong

Fringe: capital fringe, 'greater' capital region

Blue Mountains, Camden, Central Coast

Cardinia, Whittlesea

City: regional cities

Byron, Kiama, Newcastle

Ballarat, Warrnambool

Rural

Gundagai, Narrabri

East Gippsland, Macedon Ranges

Spillover effects

We adopt framework of Diebold and Yilmaz (2012)

Based on variance decomposition in a generalized VAR model

Spillover measure taken from forecast error variance decomposition

VAR(p) with n variables for a covariance stationary process

$$y_t = \sum_{i=1}^p \Phi_i y_{t-i} + \varepsilon_t \quad (1)$$

Spillover effects

Generalized variance decomposition matrix, where H is the predictive horizon

$$\theta_{ij}^g(H) = \frac{\sigma_{jj}^{-1} \sum_{h=0}^{H-1} (e_i' \Psi_h \Sigma_\varepsilon e_j)^2}{\sum_{h=0}^{H-1} (e_i' \Psi_h \Sigma_\varepsilon \Psi_h' e_i)} \quad H = 1, 2, \dots \quad (2)$$

Contribution of shocks to j to the forecast error variance of i from the generalized variance decomposition is then normalised by the row sum (the total forecast error)

$$w_{ij} = \frac{\theta_{ij}^g(H)}{\sum_{j=1}^n \theta_{ij}^g(H)} \quad (3)$$

Spillover index

Total spillover index

$$S(H) = \frac{\sum_{i,j=1, i \neq j}^n w_{ij}(H)}{n} \times 100 \quad (4)$$

Two components: 'Contribution to others' ($S_{i \rightarrow others}(H)$) and 'Contribution from others' ($S_{i \leftarrow others}(H)$).

Net spillover index takes the difference to determine how much each submarket contributes to the spillover in other submarkets

$$S_i(H) = S_{i \rightarrow others}(H) - S_{i \leftarrow others}(H) \quad (5)$$

- Positive net spillover value: net contribution *to* other markets
- Negative net spillover value: net contribution *from* other markets

Pre-Covid period in NSW

	2019 Net Spillovers				
FROM	Metro	Fringe	City	Rural	NET Average
TO					
Metro	0.000	0.006	-0.128	-0.015	-0.137
Fringe	-0.006	0.000	0.171	0.115	0.280
City	0.128	-0.171	0.000	0.580	0.538
Rural	0.015	-0.115	-0.580	0.000	-0.681

Prior to Covid:

Metro and rural are transmitters/'influencers' to city.
Fringe and regional Cities are net recipients.

Spillover from Rural to City, and from City to Fringe.

Results - NSW

	2020 Net Spillovers				
	Metro	Fringe	City	Rural	NET Average
Metro	0.000	0.215	-0.138	0.012	0.089
Fringe	-0.215	0.000	-0.359	-0.029	-0.603
City	0.138	0.359	0.000	-0.035	0.461
Rural	-0.012	0.029	0.035	0.000	0.053

Metro, City and Rural area net recipients of house price spillover effect,

Fringe is a net contributor of housing price spillover effect

Spillover from metro to regional cities continues, now strong transmission from fringe to regional cities too.

Pre-Covid period in Victoria

	2019 Net Spillovers				
	Metro	Fringe	City	Rural	NET Average
Metro	0.000	-0.617	0.094	0.046	-0.477
Fringe	0.167	0.000	0.315	0.478	1.410
City	-0.094	-0.315	0.000	-0.020	-0.429
Rural	-0.046	-0.478	0.020	0.000	-0.504

Like NSW, Vic metro is net transmitter to rest of state and fringe is net recipient of spillovers

In Victoria, city and rural are also net transmitters to fringe areas

Results - Victoria

	2020 Net Spillovers				
	Metro	Fringe	City	Rural	NET Average
Metro	0.000	0.030	-0.032	0.095	0.094
Fringe	-0.030	0.000	-0.021	0.029	-0.022
City	0.032	0.021	0.000	0.027	0.080
Rural	-0.095	-0.029	-0.027	0.000	-0.151

During 2020, fringe areas became net spillover transmitters in Victoria

Similar fringe spillover reversal as NSW

Victoria regional cities in 2020 become net recipients from capital and fringe LGAs

Extension: Rent prices

We also examine the effect on rental market using median rent prices, but difficult to draw conclusions from this data

Spillovers in rental prices have different characteristics to sale prices

e.g. transmission from regional cities to fringe areas

Difficult to separate long-term contracts and rental guarantee government interventions in response to pandemic

Implications of this research

Interaction of property prices, home equity, housing costs, and housing preferences affect migration

Effect on regional cities has broad housing affordability implications, especially if permanent

Opportunity to consider longer term changes in connectivity

Rethink regional relocation policies and priorities for governments

Property price transmission risk in case of sudden price decline

Conclusion

How has Covid-19 affected the price relationship between housing submarkets in Australia?

Examine relationship between metro, fringe, regional cities and rural areas in NSW and Victoria in 2020

- Regional cities are large spillover recipients during Covid period
- We identify a flip in directional spillover relationship
- Fringe became a net transmitter during Covid
- Compared to 2019, suburban fringe transmitted house price spillovers to regional cities .