Annual Overseas Migration and Housing Markets: Evidence from Australian Neighborhoods

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September 2, 2025

Abstract

This paper examines the impact of net overseas migration (NOM) on residential property markets using annual, neighborhood-level data for Australia. We leverage an instrumental variable approach based on historical immigrant settlement patterns to isolate plausibly exogenous variation in migration flows. We find that a 1% increase in NOM, as a share of the local population, raises unit rents and prices by 5.0% and 1.3%, respectively, and increases house rents by 3.6%. These effects are more pronounced in areas with low rates of dwelling approvals, suggesting that housing supply constraints amplify the response of prices and rents to migration. In contrast, house prices decline by 1.3%, a pattern concentrated in older neighborhoods and consistent with displacement dynamics, for which we present supporting evidence.

JEL Codes: R31, F22, R23

Keywords: Migration, Real Estate Prices, Rents, Housing, Shift-Share Instrument

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1 Introduction

In the aftermath of the Covid-19 pandemic, many countries in the developed world have experienced a strong acceleration in the rate of increase in house prices and rents.[1] These trends have contributed to an increase in the cost of living and, consequently, brought the housing debate to the forefront of policy discussion. Economists typically classify the determinants of residential prices and rents into supply-side and demand-side factors. On the supply side, common drivers include building restrictions stemming from regulation (e.g. Gyourko et al. (2008)), geographical constraints (e.g. Saiz (2010)), and low productivity growth in the construction sector (e.g. Goolsbee and Syverson (2023)). On the demand side, fluctuations in mortgage rates, post-Covid shifts in consumer preferences for dwelling space (e.g. Gamber et al. (2023)), and immigration (e.g. Saiz (2007)) are often cited as key contributors.

This paper studies the impact of immigration on residential real estate prices and rents in Australia. Although immigration supports economic growth and long-term public finances (Hernandez, 2024), concerns about its impact on housing affordability remain central to public and policy debates. Australia's immigration rate is relatively high by international standards, averaging roughly 1% of the population from 2010 to 2019.[2] Figure 1 below shows that the country has experienced a fall and subsequent unprecedented rise in net migration, which turned negative in 2021 but rebounded to more than 2% of the population in 2022. Thus, the Australian experience surrounding the COVID-19 years offers a compelling setting to study the link between immigration and housing outcomes. Accordingly, our study leverages yearly variation in net overseas migration (NOM) across roughly 2,300 neighborhoods between 2017 and 2023.[3]

The main threat to identification in our setting arises from the possibility that immigrants choose where to settle based on local housing market conditions. For example, they may disproportionately move to neighborhoods experiencing declines in prices or rents, which would bias the OLS estimates downward. To address this concern and establish causality, we adopt the methodology pioneered by Altonji and Card (1990), commonly referred to as the *Immigrant Enclave* shift-share instrumental variable approach (Saiz, 2007; Goldsmith-Pinkham et al., 2020; Borusyak et al., 2022). This strategy exploits the tendency of immigrants to settle in areas with a higher pre-existing concentration of co-nationals. The instrument, therefore, captures the differential exposure (share) of neighborhoods to changes in the *aggregate* number of immigrants (shift).

We find that a one percent increase in a neighborhood's net overseas migration flow, relative to its population, increases prices in apartments by 1.3%, while *reducing* house prices by a similar amount. The latter result may seem surprising, but it is not unprecedented in the literature, particularly at the granular geographical level we consider. It is consistent with the interpretation that immigration has a (negative) spillover effect on incumbents, for example, by potentially making

[1] See Figure A.1 in the Appendix.

[2] Over 30 percent of the Australian population is foreign-born.

[3] Our definition of neighborhood corresponds to a *Statistical Area Level 2* (SA2), based on the Australian Statistical Geography Standard (ASGS). We use the terms SA2 and neighborhood interchangeably. The median neighborhood in our sample contains approximately 10,000 residents.

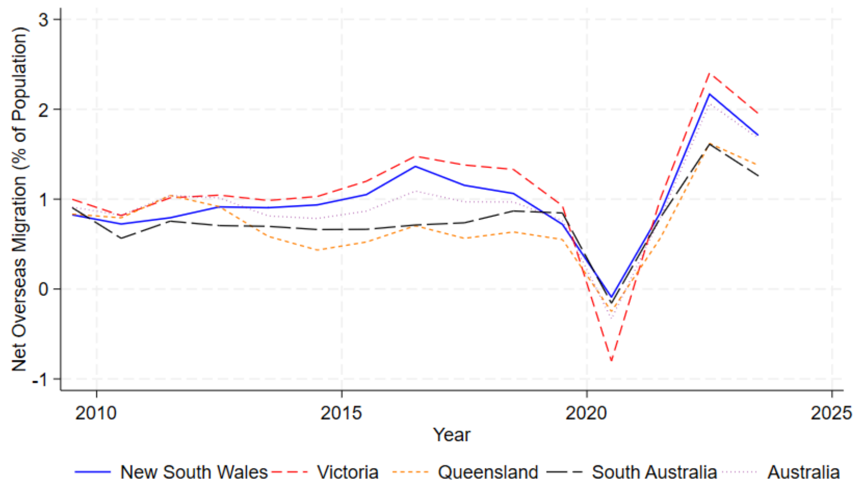


Figure 1: Net Overseas Immigration In Australia and Selected States

Notes: The plot represents changes in yearly net overseas migration, relative to the total population, of Australia and selected Australian states. Source: Australian Bureau of Statistics (ABS) regional population components.

the neighborhood less desirable. Further, we show that the negative impact on house prices fades over time, consistent with the fact that immigrants are quickly assimilated (Hernandez, 2024).

The impact on rents is much more pronounced than that on prices. We find that a one percent increase in NOM as a percentage of the SA2 population raises rents by 3.5% and 5.0% in houses and apartments, respectively. This finding supports the idea that immigrants are initially more likely to be renters. In line with this interpretation, we show that the magnitude of the impacts is attenuated over time.[4]

Finally, we examine how the impact of immigration varies across neighborhoods with different characteristics. We find that the effects on rents and unit prices are smaller in areas with higher levels of recent building approvals, suggesting that local housing supply can buffer neighborhoods from migration-driven cost pressures.[5] This result highlights the role of housing construction in mitigating affordability concerns. In addition, we also find smaller impacts on rents and unit prices in non-capital city areas, where housing supply is likely more elastic.

We also find that the negative impact on house prices is most pronounced in older neighborhoods, consistent with the idea that immigrants may be perceived as a negative amenity by older homeowners. In addition, effects on both prices and rents are concentrated in the upper percentiles of the distribution, indicating that higher-end segments of the market are more affected. Lastly, we show that immigration leads to an internal outflow of residents, providing evidence of displacement at the neighborhood level.

[4]The fact that the impact on rents is attenuated over time is also consistent with long-run elasticities of housing supply being larger than those in the short run.

[5]In Australia, the term unit is more commonly used than apartment to refer to dwellings in low- to medium-rise buildings or small complexes. We use the two terms interchangeably throughout this paper.

This paper connects to the literature that studies the impact of immigration on residential real estate prices and rents. Early influential work in this area is that of Saiz (2007), who introduced the Bartik-like instrument similar to the one used in this work. Examples of recent work, which we discuss in detail below, are Moallemi and Melser (2020), Sanchis-Guarner (2022), Helfer et al. (2023), Unal et al. (2024), among others. We contribute to this literature by being the first to analyze the impacts of migration at a yearly frequency at such a granular level as a neighborhood. In addition, a crucial advantage of this study compared to those relying on census data is that the latter often miss important micro-level dynamics, including the possibility that immigrants resettle between census waves in response to evolving relative housing costs (Saiz, 2007). We are also the first to analyze these dynamics during the Covid-19 period, when the Australian construction sector experienced significant disruptions due to supply chain issues and labor shortages.

Concerning results, many studies point to positive effects on prices and rents at the city (urban conglomerate, administrative unit) level. Using US data Saiz (2007) finds that an immigration inflow equal to 1% of a citys population raises average rents and housing values by about 1%, with a similar effect over one- and ten-year periods; Helfer et al. (2023) finds strong effects of immigration on rents and prices in Switzerland; Unal et al. (2024) finds positive effects on unit prices and rents; at an even more aggregated level (Spanish provinces), Sanchis-Guarner (2022) find that effect to be 3.3% on house prices and 1% in rents; and Akbari and Aydede (2012) finds rather small, yet positive, effects in Canadian house prices.

In contrast, Unal et al. (2024) finds no effect of immigration on house prices, while Sá (2015), using data from the UK, reports a negative effect of around 2%. The latter study argues that immigration displaces high-earning incumbents, leading to income-driven declines in housing demand and, consequently, prices. We also provide evidence consistent with this mechanism. Reflecting this interpretation, Sá (2015) finds no significant impacts at more aggregated geographic levels, where such displacement effects may be less visible. Accetturo et al. (2014), using Italian data, and Stillman and Maré (2008), using data from New Zealand, also find a negative impact of immigration on house prices. The latter study also finds a negative impact on house rents, which, to the best of our knowledge, is a unique finding in the literature. Also in the UK, Braakmann (2019) complements the study by Sá (2015) showing that immigration leads to a decline in average dwelling space per resident, which could contribute to the decline in prices.

In the context of Australia, using postal-code level census data, Moallemi and Melser (2020) find that, an immigrant inflow corresponding to 1% of the population increases house and apartment prices by 1.1% and 0.7%, respectively. Our study differs from theirs in several dimensions. First, we use yearly data ranging from 2016-17 financial year to 2022-23, while they employ intercensal data from 2006, 2011, and 2016. The yearly setup allows us to employ neighborhood-level fixed effects, controlling for time-invariant unobserved characteristics, and to capture year-by-year trends that may otherwise be obscured by long averages.[6] Second, we also investigate the

[6] Reassuringly, introducing time-variant controls (beyond neighborhood fixed effects) has very limited impacts on our estimates.

impact on rents, and show that they differ substantially from that of prices. Third, our estimates differ qualitatively from those of Moallemi and Melser (2020), in that we find negative impacts on house prices. Over a longer time horizon, though, we show that this negative impact is attenuated, which can help bridge our results.

Finally, another contribution of our paper is to provide causal estimates of the effect of immigration on the outflows of incumbent residents. Our results are consistent with some existing works, e.g., Hall and Crowder (2014) and Stonawski et al. (2022), who employ micro-data from the United States in their analysis but do not instrument for immigration flows. In contrast, our findings are at odds with those in Card (2001) and Peri and Zaiour (2022), who find no impact of immigrants on inter-city mobility of natives in the United States.

The paper proceeds as follows: Section 2 discusses our empirical methodology, while Section 3 discusses our data. Section 4 presents the main results, while Section 5 presents heterogeneous effects by neighborhood characteristics. Section 6 concludes.

2 Empirical Methodology

We now lay out the empirical strategy that allows us to analyze the causal impact of immigrant inflows on residential real estate prices and rents at the SA2 level.

Consider the following OLS specification, which is standard in the literature, regressing the log change in outcome y_{gst} (e.g., house prices), where g denotes the neighborhood in state s and year t:

$$\Delta \log y_{gst} = \alpha + \beta \left(\frac{immigrants_{gs,t}}{population_{gs,t-1}} \right) + \delta \mathbf{X}_{gs,t-1} + \gamma_{st} + \lambda_g + \varepsilon_{gst} \tag{1}$$

The primary coefficient of interest is β, which captures the effect of immigrant *inflows* during period t, expressed as a percentage of the previous year's population, on the outcome. In other words, β captures the effect of population growth through immigration only. This specification includes neighborhood-level fixed effects, controlling for time-invariant neighborhood characteristics, as well as time-varying controls $X_{gs,t-1}$.[7] In addition, state-time fixed effects are included to account for state-level aggregate fluctuations in the outcome. Thus, one possible interpretation of β is as the effect of a 1% immigration inflow on the percent change in the outcome (e.g., house price), relative to the average change experienced in a given SA2, conditional on state-level shocks and holding constant time-varying local characteristics.[8]

Threats to Identification. A key challenge in estimating the causal effect of immigration on housing markets is the endogeneity of immigrant settlement patterns. Immigrant inflows are not in-

[7]The term $\beta \left(\frac{immigrants_{gs,t}}{population_{gs,t-1}} \right)$ is usually introduced with a lag. In the next section, we explain why the timing we assume implies a 6-month lag in the price growth observation, relative to the immigration period. We also show dynamic responses, which evaluate the coefficient β for different time horizons.

[8]In additional robustness tests, we also include lags of both the dependent and independent variables.

dependent of local housing market conditions. Immigrants likely choose where to settle, which casts serious concerns about the causal interpretation of estimates obtained via OLS. For instance, immigrants may choose to settle in areas where prices are expected to decline, or where the rental market is relatively slack. To the extent that these factors are not fully accounted for by controls, the OLS estimate of β will be biased downward.

To address these concerns, we adopt an instrumental variable (IV) strategy approach that leverages historical settlement patterns of immigrants, pioneered by Altonji and Card (1990). The core idea is that new immigrants from a given country tend to settle in neighborhoods where previous cohorts from the same country are already established, due to social networks and support systems among immigrant communities. We exploit this tendency by interacting the historical distribution of immigrants across locations with aggregate country-specific immigration flows to Australia over time.

Formally, our instrument $\mathcal{Z}$ for immigration flows into a given SA2 g in state s at time t is constructed as:

$$\begin{aligned} z_{gst,c} &= \left(\frac{pop_{cgs0}}{\sum_{c \in \text{countries}} pop_{cgs0}} \times nom_{ct} \right) \\ \mathcal{Z}_{gst} &= \sum_{c \notin \text{Aus}} z_{gst,c} \end{aligned} \tag{2}$$

where pop_{cgs0} is the number of immigrants from country c living in SA2 g (state s) in a base year, which we select to be 2001, and nom_{ct} represents the total national net overseas migration from country c in year t. The ratio $\frac{pop_{cgs0}}{\sum_{c \in \text{countries}} pop_{cgs0}}$, representing the proportion living in neighborhood g born in country c, represents the "share", i.e. the exposure to aggregate changes in net aggregate flows from country c. The variable nom_{ct} represents the "shift", i.e. the magnitude of the aggregate inflows from country c. The instrument, $\mathcal{Z}_{gst}$, is constructed by aggregating the shift-share interactions at each neighborhood at any given year. Intuitively, this instrument predicts current immigration inflows based on the interaction between historical immigrant enclaves and national immigration trends. Note that we exclude Australians from the computation, as the logic of immigrant enclaves clearly does not apply.[9]

3 Data

3.1 Geographical Unit of Analysis.

Our entire analysis is conducted at the Statistical Area 2 level (SA2) as determined by the Australian Statistical Geography Standard (ASGS) in 2016, defined by the Australian Bureau of Statistics (ABS). These geographical regions are the smallest spatial units used by the ABS for the release of non-Census Population and Housing data, offering detailed insights at a highly granular level.

[9] A similar concern could apply to immigrants from New Zealand and other English-speaking countries. In Appendix B we show that the results are unchanged if we exclude New Zealand and the United Kingdom.

Our final sample features 2265 SA2s, with median population and area of approximately 10,000 residents and 13.4 square kilometers. Designed to capture local communities with shared social and economic characteristics, SA2s align closely with suburban boundaries and often adopt suburb names to maintain familiarity and practical use. Figure 2 displays the SA2 boundaries in New South Wales and Victoriathe two most populous stateswith shading intensity reflecting their population levels in 2016.

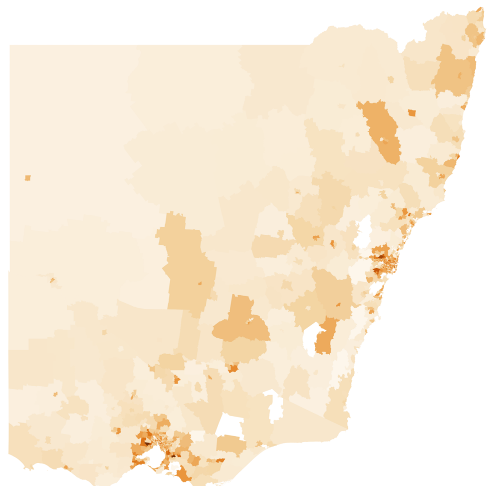


Figure 2: Map of Level 2 Statistical Areas - New South Wales and Victoria

Notes: Statistical Area level 2 (2016 version) boundaries. Color intensity is proportional to population in 2016.

3.2 Prices and Rents

Our residential real estate prices and rents information is provided by Corelogic via the Australian Urban Research Infrastructure Network (AURIN). It includes details on the monthly average, median, and distributional statistics of sales prices and rents of houses and units. We aggregate monthly statistics by averaging them at the yearly level. Our preferred statistic refers to median prices and rents at the SA2-level, and we report analogous results for averages in Appendix B.

Our final sample covers 2017-2023, to match the yearly available information on net overseas migration, as we explain in the next subsection. Over the period considered, median SA2-level house prices rose by 6.8%, despite the COVID decline shown in Appendix Figure A.1. Rents also experienced strong growth over the period, but not as pronounced.

3.3 Migration

The source for SA2 level migration data is the ABS "regional population components" publication (Australian Bureau of Statistics, 2023), which provides yearly data on SA2-level overseas arrivals and departures, and net overseas migration. The latter consists of our explanatory variable. Overseas migration to and from Australia's sub-state areas cannot be directly measured and is thus estimated from Census responses indicating residence overseas a year prior, with adjustments for changes in migration patterns using visa and student data.[10]

To construct the "shift" component of our instrument (expression (2), term nom_{ct}), we use data on yearly net overseas migration flows also sourced from the ABS. These are obtained using border crossing information and the 12/16 rule, where a person is added to the estimated resident population (and thus considered a "net overseas migrant") if they stay in Australia for 12 months or more within a 16 month period and removed if they leave for the same duration.[11]

Both the aggregate and SA2-level migration data are supplied at the financial year level, which in Australia begin on the first of July. We convert this timing into yearly by, for instance, assigning the 201617 observation to the year 2017. This means that our primary estimates from equation (1) take into account an average 6-month gap between the aggregation period of prices and rents and that of immigration flows. We also test alternatives to this gap, including aggregating the prices and rents data at the financial year level or considering different lags, which has very limited impact on our results.

Finally, to recover the initial migrant population, pop_{cgs0}, we use data from the 2006 Australian Census, drawing on respondents' reported year of arrival to estimate the number of residents who had arrived by 2001.[12]

3.4 Controls and Other Variables

Controls. A potential concern in our identification strategy is that certain neighborhood characteristics could drive variation in prices and rents, confounding our estimates. This issue is largely mitigated by our use of an instrumental variables approach and SA2-level fixed effects. To further account for changes in SA2 characteristics over time, we control for the proportion of college-educated individuals, apartments as a share of the total dwelling stock, median age, (the log of) population, and population density. Except for the latter two, these variables are only available in census years, and thus we interpolate them for non-census years. Reassuringly, the inclusion of controls has minimal impact on our estimates, reinforcing the validity of our instrument (Goldsmith-Pinkham et al., 2020).

Heterogeneity Analysis and Mechanisms. We also incorporate data on building approvals at the SA2 level, sourced from the ABS. This variable measures the total number of new residential dwellings approved in a given SA2 each year and is an important indicator of changes in housing supply. This is illustrated by a strong correlation between building approvals and commencements, with a coefficient of 0.96 for houses and 0.93 for units throughout 2006-2014 (Ong et al. (2017)). Finally, we also incorporate net *internal* migration from the ABS regional population components dataset.

[10]Regional Overseas Migration Estimate departures are modeled based on past overseas arrivals, weighted by education levels and the proportion of overseas-born residents.

[11]The same rule applies to the SA2-level dataset.

[12]We repeat the analysis using 2006 as the base year and report the results, largely unchanged, in the Appendix.

3.5 Summary Statistics

Table 1 presents a summary of the data, focusing on key aspects of our final sample, covering 20172023. The average annual immigrant inflow at the SA2 level is 0.7%, with a standard deviation of 1.1%. In other words, our explanatory variable exhibits significant yearly variation, reflecting major shifts during the Covid-19-induced lockdown that temporarily halted immigration inflows. This period was followed by a sharp resurgence in immigration alongside a housing sector boom, generating substantial variation in both prices and rents.

Table 1: Descriptive Statistics

Variable	Average	Median	Standard Deviation	p5	p25	p75	p95	Observations
Net Overseas Migration	102.4	37	237.2	-17	10	115	445	15,414
Net Overseas Migration (% of pop.)	0.7	0.4	1.1	-0.2	0.2	0.9	2.6	15,402
Area (sq km)	3,240.6	13.4	24,774.9	2.0	5.6	118.6	6,527.2	15,414
Population	11,582.5	9,958	7,548.8	2,732	5,694	16,189	25,178	15,414
Dwelling Approvals	91.2	39	190.2	1	13	95	338	15,414
Total Approvals per 1000 inhabitants	8.7	3.9	105.0	0.2	1.8	7.6	22.1	15,381
Dwelling Approvals (per sq. km)	10.1	2.0	36.1	0.0	0.2	8.7	37.0	15,414
Total Residential Dwellings	4,303.8	3,861	2644.5	521	2,266	6,159	9,141	2,122
Apartment Ratio (%)	10.6	2.7	18.2	0.0	0.5	11.1	56.6	2,117
University Educated (%)	19.4	16.0	12.1	6.2	10.1	26.4	42.7	2,112
Median Age	39.6	37	7.0	32	37	42	52	15,778
Yearly % Change - Unit Rents	4.2	3.3	8.7	-7.4	-0.1	7.8	17.8	10,873
Yearly % Change - Unit Prices	5.1	3.4	14.2	-12.1	-2.1	10.7	26.2	9,014
Yearly % Change - House Rents	4.8	3.8	7.4	-5.0	0.5	8.5	16.7	14,585
Yearly % Change - House Prices	6.8	5.4	12.6	-9.7	-0.2	12.9	26.5	14,682

Notes: p5, p25, p75, and p90 refer to the respective percentiles of the distribution. The sample is restricted to years 2017-2023, except migration and population data, which are based on financial years 2016-2017 to 2022-2023. Statistics calculated at the SA2-year level. The apartment ratio, the percentage of university educated, and the total number of residential dwellings are interpolated from census data.

Changing SA2 Boundaries Over Time. Australias evolving statistical geographic standards (ASGS) present a significant challenge for measuring immigrant arrivals consistently over time. To address this, we employ population-weighted correspondence tables from the Australian Bureau of Statistics (2021), which enables the translation of data across geographic boundaries, specifically from older Statistical Local Areas (SLAs) in 2001, 2006, and 2011 to the more recent Statistical Area Level 2 (SA2) regions, implemented in 2016. We also construct population-weighted correspondence tables to align SA2 boundaries from 2021 (and beyond) to 2016, using the 2016-2021 SA2 correspondence and deriving reverse weights based on 2021 SA2 population estimates.

4 Results

4.1 Instrumental Variable Validation.

The validity of our instrument lies in two main elements. First, past settlement patterns must be correlated with current immigration flows (relevance). Second, conditional on controls and fixed effects, the historical distribution of immigrants should not directly impact (future) *changes* in local residential prices or rents, except through its effect on current immigration flows. This assumption, labeled "conditional share exogeneity" by (Goldsmith-Pinkham et al., 2020), consists of a sufficient condition for instrument validity. [13]

To address the first concern, we report the Kleibergen-Paap F-statistic in all our instrumental variables regression tables (Kleibergen and Paap, 2006). The values are consistently large, indicating that the instrument is strong.

Regarding the share exogeneity assumption, we provide suggestive evidence in favor of its credibility in Table 2, which shows the correlation between the share of immigrants in the base year ("share") of our instrument and several control variables in 2006.

Correlations are generally weak, specially when considering changes in these variables (i.e., pre-trends). The exception is (the level of) population density: in 2006, foreign-born residents were more likely to live in denser suburbs. Reassuringly, however, the correlation with the *change* in population density is very small.

Table 2: Correlation - Initial Foreign-Born Shares

	Share of Foreign-Born Residents
Apartment Ratio	0.045
University Educated (%)	0.053
Log Population	0.165
Median Age	-0.118
Population Density	0.598
Area	-0.153
(Δ %) Population Density	0.085
(Δ %) Apartment Ratio	-0.093
(Δ %) Median Age	-0.024
(Δ %) University Educated (%)	-0.038

Notes: The table presents the correlations between SA2 characteristics in 2006 with their share of foreign-born residents in 2001. Δ % corresponds to percent change. In the case of the latter three variables, which are only observed every five years (census data), the numbers correspond to the correlation between the share of immigrants in 2006 and the percent change in those variables from 2006 to 2011.

The numbers displayed in Table 2 are very encouraging and indicate that initial immigrant population have little relation with other observable variables that could drive future price and rent growth. This pattern is consistent with the validity of the "share exogeneity" assumption.

Finally, as shown below in Table 3, the inclusion of observed variables (controls) has a limited impact on the estimates, which hints at a likely irrelevance of unobserved confounders. We also

[13] Furthermore, it is unlikely that aggregate immigration flows (from particular countries) are related to local housing market conditions in specific regions (SA2s). Instead, throughout the sample period, migration flows are more likely connected to other factors such as the expansion of international student visa acceptances, labor demand factors (employer-sponsored and skill-based visas), and in- and outflows surrounding the Covid period. See McCowage et al. (2025) for more information on the role of international students in Australia's immigration system. If that is the case, the "shift" component of the instrument is exogenous, another sufficient condition for instrument validity.

show that our results are robust to changing the base year in which the instrument is constructed to 2006 (see Appendix B).

4.2 Impact of Net Overseas Migration

Our main regression specifications (Table 3) estimate the effect of immigration on prices and rents by regressing outcomes in calendar year T on immigration flows from the previous financial year $T-1$ to T. For example, prices in 2017 are regressed on immigration during the 201617 financial year. Standard errors are clustered at the SA2-level, and all regressions feature state-year and SA2 fixed effects. Our outcome variables correspond to their median values at the SA2-level.

Panels A and C of Table 3 display the impact of immigration on rents. As a starting point, note that the OLS coefficients are smaller than their IV counterparts. This is consistent, for instance, with a downward bias caused by immigrants selecting to live in locations with lower rent trends. It is also consistent with an attenuation bias stemming from measurement error.

An increase in net overseas inflow leads to a statistically significant rise in both house and unit rents. Specifically, in our preferred specification (IV with controls), a 1 percentage point increase in net overseas migration as a share of the SA2 population results in an increase in rents of approximately 3.6% for houses and 5.0% for units.

To the best of our knowledge, our study is the first to assess the short-term impact of immigration on rents at such a disaggregated level, setting it apart from existing research on short-term effects. With this distinction in mind, our estimates are notably larger than those found in comparable studies. For example, using yearly data at the Swiss canton level (average population circa 300,000), Helfer et al. (2023) estimates a 2.2% increase in apartment rents due to net immigration. Similarly, Unal et al. (2024) reports a 0.9% effect at the German district level, comprising 382 administrative districts, close to Saiz (2007) estimate using Metropolitan-Statistical-Area-level data for the United States.[14]

The stronger effects observed in our study may reflect severe housing supply constraints in Australia, particularly given the unprecedented immigration flows in the years surrounding the COVID-19 pandemic. In the next section, we explore this possibility through a heterogeneity analysis, examining whether the effects vary based on local housing supply conditions.

Panels B and D of Table 3 display the impact of immigration on prices. The OLS coefficients are smaller in magnitude than their IV counterparts for units, but *larger* (less negative) for house prices. Again, the inclusion of controls has a limited impact on IV estimates.

In our preferred specification, (IV with controls), a one percentage point increase in net overseas migration as a share of the SA2 population results in a 1.3% *decline* in house prices and a 1.3% *increase* in unit prices. The former result is consistent with the findings by Sá (2015) and Stillman and Maré (2008), who also find negative impacts. A possible interpretation, supported by the findings in Braakmann (2019), is that immigration lowers prices by displacing incumbent residents. In

[14] Unal et al. (2024) does not report average district population, while the average MSA population in Saiz (2007) is around 2.4 million.

Table 3: Impact of Immigration on Rents and Prices

	Panel A: Unit Rents				Panel B: Unit Prices			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
Immigration Flows	2.006***	2.063***	4.646***	4.993***	0.262**	0.267	1.310***	1.324**
	(0.134)	(0.142)	(0.340)	(0.359)	(0.128)	(0.164)	(0.390)	(0.520)
Observations	10,816	9,885	10,816	9885	8933	8050	8933	8050
Kleibergen-Paap F-stat.	-	-	209.999	234.820	-	-	175.487	203.451
Controls	No	Yes	No	Yes	No	Yes	No	Yes
	Panel C: House Rents				**Panel D: House Prices**			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
Immigration Flows	1.557***	1.529***	3.156***	3.570***	-0.197	-0.543***	-0.985***	-1.271***
	(0.145)	(0.154)	(0.204)	(0.225)	(0.209)	(0.172)	(0.326)	(0.376)
Observations	14,576	13,591	14,576	13,591	14,674	13,699	14,674	13,699
Kleibergen-Paap F-stat.	-	-	279.231	334.169	-	-	315.123	343.229
Controls	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parentheses, clustered at the SA2 level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Outcomes correspond to their median at the SA2 level. Immigration flows are measured relative to the local SA2 population in the prior year. Control variables include log population, population density, apartment ratio, and university-educated share. All specifications include SA2 and state-year fixed effects.

the next section, we provide evidence in favor of this mechanism. A related possibility is that immigrants are perceived as a negative amenity for incumbent homeowners. The contrast between the effects on house and unit prices suggests that immigration inflows may increase demand primarily for units, which are more likely to be rented or purchased by newly arrived immigrants, or for rental houses.

Comparing with the three studies mentioned above, Unal et al. (2024) finds no significant impact on house prices and a 2.4% impact on apartment prices.[15] Helfer et al. (2023) finds the impact on house and apartment prices to be 1.8% and 2.2% respectively, and Saiz (2007) find the impact on house prices to be roughly 1%. We speculate that the smaller impact on rents, relative to prices, in Germany and Switzerland might be due to institutional differences in rental markets compared to Australia, namely rent controls. In the context of Australia, perhaps closer to the United States', from 2006 to 2016 Moallemi and Melser (2020) estimate the impact over 5-year periods to be 1.1% and units by 0.7%. The results in this section, especially concerning house prices, differ starkly from those of Moallemi and Melser (2020), but in the next subsection, we present evidence that over time this negative effect is attenuated.

Robustness. As mentioned before, in Appendix B we show that the results are virtually unchanged if we construct the instrument using data on the distribution of immigrants in 2006, instead of 2001. In that section, we also show that results are robust to including lags of the de-

[15] We always take into account their IV specification with controls when referring to estimates of Unal et al. (2024).

pendent and the independent variable in our regression specification (expression (1)).[16]

Finally, Table B.1 in the Appendix replicates Table 3 using the *average* change in prices or rents as the outcome variable. The results are qualitatively unchanged with one exception: the positive effect on apartment prices becomes statistically insignificant. Interestingly, the lower impact on average unit prices (compared to the median) seems to be driven by negative impacts of immigration at the bottom of the distribution, as shown in Figure 4 in the next section.

We conclude this analysis with a word of caution. Our estimates should be seen as the *partial equilibrium* effect of immigration at the neighborhood level. We refrain from asserting the relative impact of immigration on the evolution of Australian residential prices and rents over the period, given that those depend on general equilibrium effects, including spatial effects and across-neighborhoods spillovers.

Dynamic Effects. Figure 3 presents the cumulative effect of net overseas migration over extended periods (x-axis) on the cumulative change in prices and rents. The impact is fairly stable in the case of rents, while for prices we observe an increase in the fourth year.[17]. The impact on prices is consistent with the idea that immigrants might initially be perceived as reducing amenities but quickly assimilate (Hernandez, 2024) and, as a result, this negative effect fades.

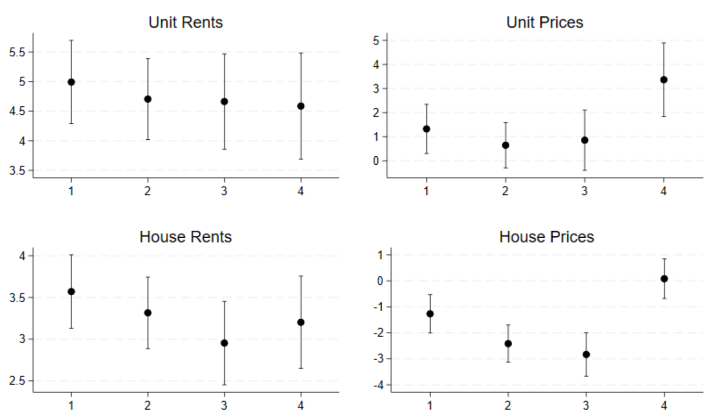


Figure 3: Dynamic Effects of Net Overseas Migration

Notes: Bands represent 95% confidence intervals based on standard errors clustered at the SA2 level. All models include SA2 and state-year fixed effects, and controls include log population, population density, median age, apartment share, and university education rates. Regression replicates specification (1), but the variable $\left(\frac{immigrants_{gs,t}}{population_{gs,t-1}}\right)$ is replaced by , i.e., the cumulative immigration over the last J periods. The instrumental variable is adjusted accordingly.

[16] The results are also unchanged if we include only the lag on either the dependent or the independent variable. They are available upon request.

[17] Standard errors become large in the fifth year due to the short length of our panel.

5 Heterogeneous Effects and Mechanisms

In this section, we investigate the heterogeneous impacts of immigration based on neighborhood characteristics and attempt to shed light on some of the mechanisms driving our results.

Heterogeneity. To conduct a heterogeneity analysis, we modify equation 1 to:

$$\Delta \log y_{gst} = \alpha + \sum_{h=1}^{H} \beta_{h,W} \mathbb{I}(W \in \mathcal{Q}_h) \left(\frac{immigrants_{gs,t}}{population_{gs,t-1}} \right) + \delta \mathbf{X}_{gs,t-1} + \gamma_{st} + \lambda_g + \varepsilon_{gst}, \quad (3)$$

where $\mathbb{I}$ represents the indicator function, Q_h represents groups of a certain characteristics (for instance, quartiles), and W is the variable along which heterogeneity is analyzed.

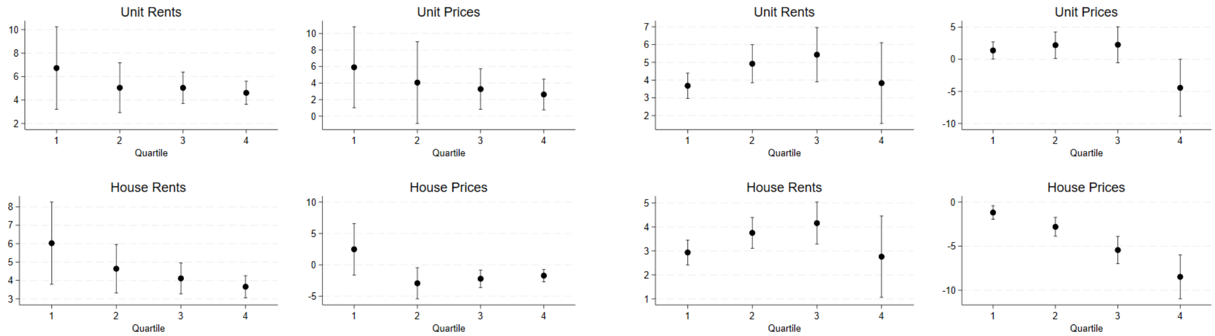
Figure 4 displays the results. Panel A (top-left) displays the coefficients β_h for quartiles of the distribution of average number of dwellings approved for construction (henceforth "building approvals") per square kilometer over the prior three years.[18] This variable can be considered a proxy – albeit imperfect – for the elasticity of housing supply, with neighborhoods with historically high building approvals likely being more prone to the construction of new dwelling units.[19] Overall, point estimates are smaller (or negative, for house prices) for high-building-approvals neighborhoods for all four variables considered. For rents, moving from the first to the fourth quartile reduces point estimates by roughly a third, while for prices the reduction is even larger. This result suggests that encouraging construction can mitigate the impact of immigration on residential prices and rents.

Panel B (top-right) presents the heterogeneous effects across neighborhoods grouped by median age. For rents, the pattern resembles an inverted U-shape, with the first and fourth quartiles showing the weakest effects. For prices–particularly house prices – the impact becomes increasingly negative as we move from younger to older neighborhoods. One possible interpretation is that immigrants may be perceived as a negative amenity, especially by older homeowners. This could explain the sharp decline in coefficients observed in the fourth quartile.

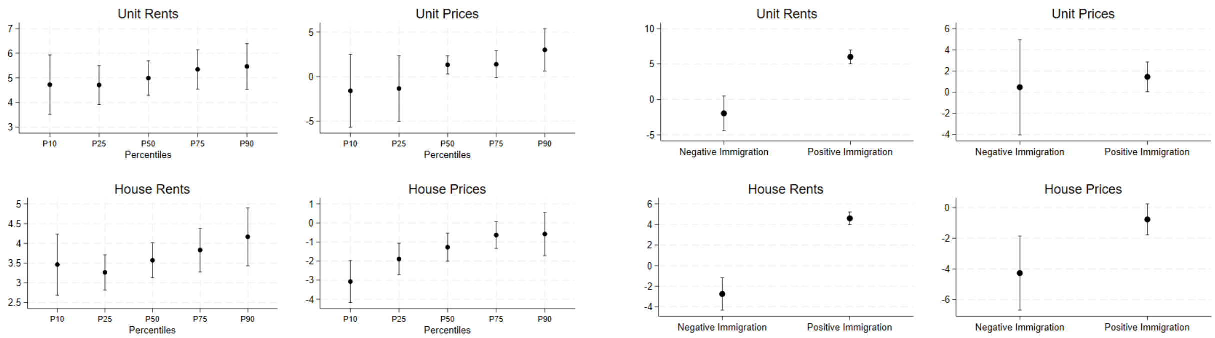
Panel C (bottom-left) replicates our preferred model (IV with controls, equation (1)), using different percentiles of the within-SA2 price or rent distribution as the dependent variable. The estimates corresponding to "P50" match those reported in Table 3. Overall, the impact on unit prices is concentrated in the higher quantiles of the distribution, although estimates for the lower quantiles are imprecise. For house prices, the negative impact is more pronounced in the lower percentiles. This may suggest that immigrants, to the extent that they are homeowners, compete for higher-end properties, particularly houses. Heterogeneity in rents is more limited, though point estimates tend to be higher at the upper end of the distribution.

[18] Building approvals generally take around two years to convert into completed construction (NSW Government, 2022).

[19] We considered two other alternatives: building approvals per resident, or building approvals per dwelling units, and we find no heterogeneous impacts. However, these alternatives are problematic as a proxy for the elasticity of housing supply, since more construction-prone neighborhoods will likely feature a higher population and a higher number of dwellings in the first place.



Panel A - Building Approvals per Square km　　　　Panel B - Median Age



Panel C - Moments of Price/Rents Distribution　　　　Panel D - Positive vs. Negative Price/Rent Changes

Figure 4: Heterogeneity Analysis

Notes: Bands represent 95% confidence intervals based on standard errors clustered at the SA2 level. Panel A splits neighborhoods in quartiles of number of dwellings approved for construction per square kilometer in the prior three years; Panel B repeats for median age; Panel C compares effects across different points of the distribution, using specification (1); and Panel D separates price and rent responses into positive and negative net overseas migration flows. All models include SA2 and state-year fixed effects, and controls include log population, population density, median age, apartment share, and university education rates.

Finally, Panel D (bottom-right) presents the heterogeneous impacts of neighborhoods experiencing *positive* and *negative* net overseas migration flows. In particular, we consider the following regression specification:

$$\begin{aligned}\Delta \log y_{gst} = \alpha &+ \beta_{+}\left(\frac{immigrants_{gs,t}}{population_{gs,t-1}}\right)\times\mathbb{I}\left[\left(\frac{immigrants_{gs,t}}{population_{gs,t-1}}\right)\geq 0)\right]\\ &+\beta_{-}\left(\frac{immigrants_{gs,t}}{population_{gs,t-1}}\right)\times\mathbb{I}\left[\left(\frac{immigrants_{gs,t}}{population_{gs,t-1}}\right)< 0)\right]\\ &+\delta\mathbf{X}_{gs,t-1}+\gamma_{st}+\lambda_{g}+\varepsilon_{gst},\end{aligned}$$

where $\mathbb{I}(\cdot)$ is the indicator function.

Since all negative changes occurred during the COVID-19 period, this exercise also serves as a robustness check for our estimates excluding that time.[20] The results are robust: the point estimates for "positive immigration" remain largely unchanged, although the effect on house prices becomes statistically insignificant.

In years of negative migration, the point estimate becomes insignificant for unit prices and more negative for house prices, suggesting that migration outflows are associated with house price increases. The puzzling result is found for rents, where the sign of the coefficient is reversed: larger migration outflows led to higher rents (or smaller rent declines), although the coefficient is insignificant for units. This could reflect, for instance, a desire among residentsor returning Australiansto move into areas previously occupied by immigrants.

Urban vs. Regional Areas. Figure 5 shows the results from modifying expression (1), instrumented and with controls, in which we interact immigration flows with an indicator for the urban status of the SA2 in 2016. The specification is:

$$\begin{aligned}\Delta \log y_{gst} = \alpha &+ \beta_{reg}\left(\frac{immigrants_{gs,t}}{population_{gs,t-1}}\right) \times \mathbb{I}(g \in \text{regional}) \\ &+ \beta_{urb}\left(\frac{immigrants_{gs,t}}{population_{gs,t-1}}\right) \times \mathbb{I}(g \in \text{urban}) \\ &+ \delta \mathbf{X}_{gs,t-1} + \gamma_{st} + \lambda_g + \varepsilon_{gst},\end{aligned}$$

where $\mathbb{I}(\cdot)$ is the indicator function and urban and regional status are mutually exclusive.

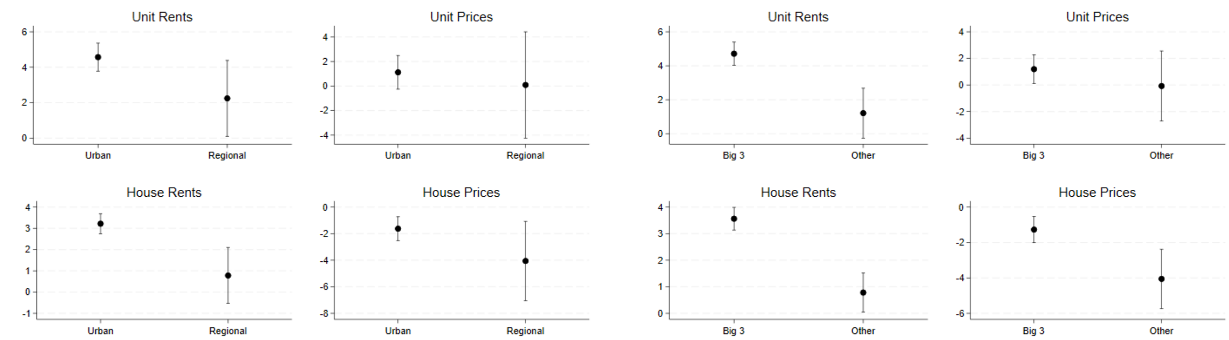
We consider two alternative definitions of urban versus regional status. First, Panel A contrasts SA2s located in urban areas of state capitals and the Australian Capital Territory (Canberra) with those classified as regional. Second, Panel B further distinguishes SA2s within the three largest metropolitan areas – Sydney, Melbourne, and Brisbane ("Big 3") – from all other locations.

The patterns are broadly similar in both analyses. The impact in urban areas is qualitatively similar to those presented in Table 3, with rents and unit prices increasing in response to net migration, while house prices decline. In contrast, regional areas exhibit weaker rental responses for both units and houses, consistent with a greater elasticity of supply. The point estimate regarding the impact on apartment prices is similar across types of SA2s, but standard errors are large in the case of regional areas. Finally, the decline in house prices is more pronounced in regional areas – albeit more imprecisely estimated – , again in line with the interpretation of a more elastic housing supply outside major urban centers.[21]

We also explored heterogeneous effects across other neighborhood characteristics, but found them to be largely irrelevant in shaping the impact of migration. The full set of results is presented in Appendix C.

[20] There are no negative changes outside the years 2020 and 2021 in our sample.

[21] The instrument remains relatively strong if we only include "Regional" or "Other" SA2s (not shown), with K-P Wald statistics always above 12. For the "Urban" and "Big 3" regressions, K-P statistics are similar to those reported in Table 3.



Panel A - Urban vs. Regional Areas

Panel B - Big 3 Urban Conglomerates vs. Others

Figure 5: Heterogeneity Analysis - Urban vs. Regional Areas

Notes: Bands represent 95% confidence intervals based on standard errors clustered at the SA2 level. Panel A compares SA2s located in state capitals and the ACT (urban) with all other SA2s (regional). Panel B separates neighborhoods that are part of the largest three urban conglomerates (Sydney, Melbourne, Brisbane) from the rest of the sample. All models include SA2 and state-year fixed effects, and controls include log population, population density, median age, apartment share, and university education rates.

Displacement. Lastly, we evaluate whether overseas immigrants displace existing residents. To do so, we estimate the specification in equation (1), using net internal migration flows as the dependent variable. Our preferred specification indicates that a 1% net overseas inflow leads to a 0.16% (internal) outflow of residents, relative to the SA2 population. This result is consistent with Braakmann (2019)in our case, observed at the neighborhood leveland offers a plausible explanation for the negative effect of immigration on house prices.

Table 4: Regression Results - Net Internal Migration

	(1)	(2)	(3)	(4)
	OLS	OLS	IV	IV
Immigration Flows	-0.097***	-0.197***	-0.035	-0.158***
	(0.025)	(0.064)	(0.079)	(0.045)
Observations	15,402	14,382	15,402	14,382
Kleibergen-Paap F-statistic			291.658	346.535
Controls	No	Yes	No	Yes

Standard errors in parentheses

* p<0.10, ** p<0.05, *** p<0.01

Notes: Standard errors in parentheses, clustered at the SA2 level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Internal migration and net overseas immigration flows are measured relative to the local SA2 population in the prior year. Control variables include log population, population density, apartment ratio, and university-educated share. All specifications include SA2 and state-year fixed effects.

6 Conclusion

This paper examines the impact of overseas migration flows on residential house prices and rents using annual data for neighborhoods in Australia. A 1% increase in net overseas migration, as a share of the local population, leads to increases in house and unit rents of 3.6% and 5.0%, respectively, while raising unit prices by 1.3% and *reducing* house prices by 1.3%. The latter result is concentrated in neighborhoods with a high median age, suggesting that immigrants may be perceived as a negative amenity, particularly by older homeowners. We further provide evidence that displacement effects driven by overseas migration may contribute to this outcome.

Importantly, we also find that the impact on both rents and prices is smaller in neighborhoods with higher levels of recent building approvals, indicating that promoting housing construction can mitigate the effects of immigration. The impacts are also smaller in areas outside major urban centers.

While overseas immigration has well-documented positive effects on economic growth, innovation, and long-term public finances, among other outcomes (Hernandez, 2024), public concern, especially recently, often focuses on its impact on housing affordability. Our results suggest that rising housing costs – especially rents – can indeed follow increases in migration, which may contribute to political backlash. However, we also find that these effects are reduced in areas with higher levels of recent residential construction. This highlights a clear path for policy response: expanding housing supply can help mitigate price pressures and preserve the broader social and economic benefits of migration.

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Online Appendixes

A Motivation - Additional Figures

Figure A.1 below shows the recent evolution of house prices in selected developed countries.

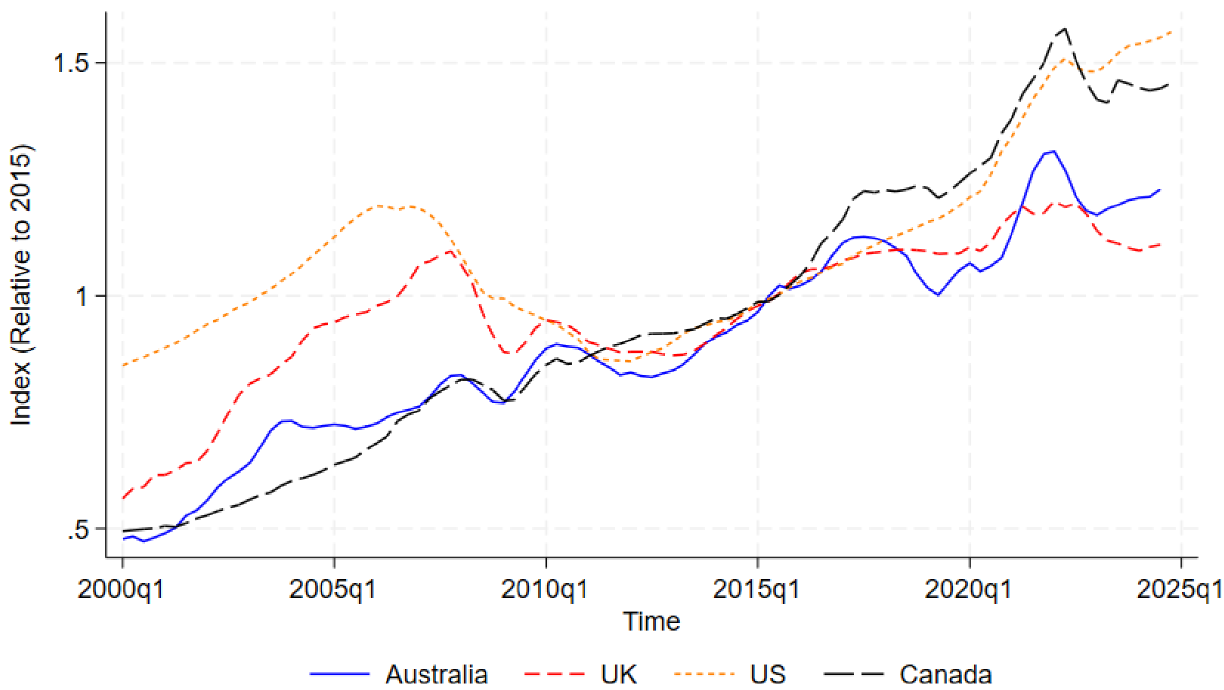


Figure A.1: House Price Indices in Selected Countries - OECD

Notes: The plot represents changes in quarterly **real**, seasonally adjusted, house price indices in selected countries, normalized to unity in each of them. Obtained from OECD Data Explorer.

B Robustness and Additional Results

Table B.1 below reproduces Table 3 with the outcomes representing their *averages* within a neighborhood.

Table B.1: Impact of Immigration on Average Rents and Prices

	Panel A: Unit Rents				**Panel B: Unit Prices**			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
Immigration Flows	1.989***	2.065***	4.180***	4.391***	0.201	0.031	0.712	0.405
	(0.139)	(0.154)	(0.352)	(0.409)	(0.233)	(0.259)	(0.610)	(0.697)
Observations	14041	13058	14041	13058	13064	12090	13064	12090
Kleibergen-Paap F-stat.	-	-	267.889	316.715	-	-	252.468	299.817
Controls	No	Yes	No	Yes	No	Yes	No	Yes
	Panel C: House Rents				**Panel D: House Prices**			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
Immigration Flows	1.441***	1.461***	3.052***	3.454***	-0.656*	-0.799***	-1.630***	-1.847***
	(0.138)	(0.153)	(0.234)	(0.264)	(0.371)	(0.291)	(0.631)	(0.688)
Observations	15023	14033	15023	14033	15078	14088	15078	14088
Kleibergen-Paap F-stat.	-	-	285.572	340.676	-	-	286.529	341.738
Controls	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parentheses, clustered at the SA2 level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Outcomes correspond to their **average** at the SA2 level. Immigration flows are measured relative to the local SA2 population in the prior year. Control variables include log population, population density, apartment ratio, and university-educated share. All specifications include SA2 and state-year fixed effects.

Table B.2 below reproduces Table 3, but instead selecting 2006 as the base year for constructing the instrumental variable.

Table B.2: Impact of Immigration on Rents and Prices - Base IV Year: 2006

	Panel A: Unit Rents				**Panel B: Unit Prices**			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
Immigration Flows	2.006***	2.063***	3.998***	4.434***	0.262**	0.267	1.096***	1.180***
	(0.134)	(0.142)	(0.314)	(0.311)	(0.128)	(0.164)	(0.303)	(0.400)
Observations	10,816	9,885	10,816	9,885	8,933	8,050	8,933	8,050
Kleibergen-Paap F-stat.	-	-	166.366	190.116	-	-	141.439	164.000
Controls	No	Yes	No	Yes	No	Yes	No	Yes
	Panel C: House Rents				**Panel D: House Prices**			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
Immigration Flows	1.557***	1.529***	2.834***	3.210***	-0.197	-0.543***	-0.517	-0.857**
	(0.145)	(0.154)	(0.193)	(0.206)	(0.209)	(0.172)	(0.325)	(0.341)
Observations	14576	13591	14576	13591 14,674	13,699	14,674	13,699	
Kleibergen-Paap F-stat.	-	-	213.361	253.991	-	-	256.899	257.768
Controls	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parentheses, clustered at the SA2 level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Outcomes correspond to their **median** at the SA2 level. Immigration flows are measured relative to the local SA2 population in the prior year. Control variables include log population, population density, apartment ratio, and university-educated share. All specifications include SA2 and state-year fixed effects. Base year for IV construction is 2006.

Table B.3 below reproduces Table 3, this time including one lag for the outcome and one lag the immigration flows variable.[22]

[22]Results are unchanged with other lag specifications and are available upon request.

Table B.3: Impact of Immigration on Rents and Prices - Lags

	Panel A: Unit Rents				**Panel B: Unit Prices**			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
Immigration Flows	2.116***	2.093***	4.760***	5.142***	0.028	0.032	0.750*	0.932*
	(0.142)	(0.155)	(0.353)	(0.392)	(0.134)	(0.170)	(0.407)	(0.557)
Observations	9,040	8,248	9,040	8,248	7,219	6,483	7,219	6,483
Kleibergen-Paap F-stat.	-	-	209.421	232.068	-	-	166.832	190.316
Controls	No	Yes	No	Yes	No	Yes	No	Yes
	Panel C: House Rents				**Panel D: House Prices**			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
Immigration Flows	1.613***	1.558***	3.217***	3.707***	-0.831***	-1.142***	-1.809***	-2.210***
	(0.167)	(0.164)	(0.214)	(0.244)	(0.195)	(0.201)	(0.338)	(0.417)
Observations	12,443	11,600	12,443	11,600	12,495	11,665	12,495	11,665
Kleibergen-Paap F-stat.	-	-	282.072	337.600	-	-	317.560	342.348
Controls	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Standard errors in parentheses, clustered at the SA2 level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Outcomes correspond to their **average** at the SA2 level. Immigration flows are measured relative to the local SA2 population in the prior year. Control variables include log population, population density, apartment ratio, and university-educated share. All specifications include SA2 and state-year fixed effects. One lag included both for the dependent and variable and immigration inflows.

Table B.4 below repeats Table 3, but excludes New Zealanders and immigrants from the Great Britain and nearby Islands from the instrument.

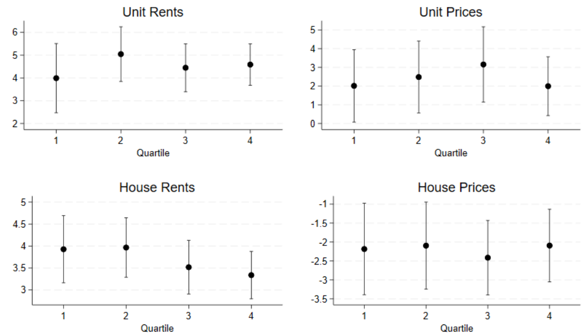
Table B.4: Impact of Immigration on Rents and Prices - Instrument Built Without New Zealanders and Immigrants from Great Britain

	Panel A: Unit Rents				Panel B: Unit Prices			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
Immigration Flows	2.006***	2.063***	4.637***	4.976***	0.262**	0.267	1.358***	1.404***
	(0.134)	(0.142)	(0.339)	(0.356)	(0.128)	(0.164)	(0.386)	(0.511)
Observations	10,816	9,885	10,816	9,885	8,933	8,050	8,933	8,050
Kleibergen-Paap F-stat.	-	-	208.384	233.375	-	-	175.358	204.158
Controls	No	Yes	No	Yes	No	Yes	No	Yes
	Panel C: House Rents				**Panel D: House Prices**			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV
Immigration Flows	1.557***	1.529***	3.175***	3.593***	-0.197	-0.543***	-0.906***	-1.168***
	(0.145)	(0.154)	(0.204)	(0.224)	(0.209)	(0.172)	(0.323)	(0.369)
Observations	14,576	13,591	14,576	13,591	14,674	13,699	14,674	13,699
Kleibergen-Paap F-stat.	-	-	274.771	328.450	-	-	309.631	336.435
Controls	No	Yes	No	Yes	No	Yes	No	Yes

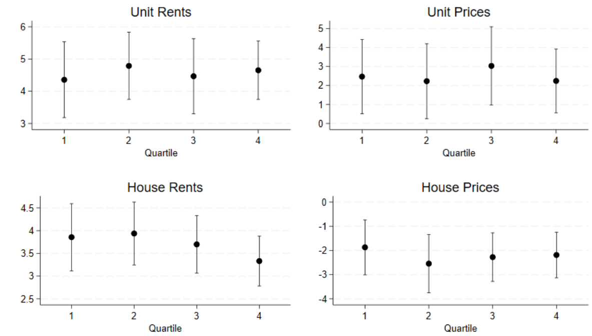
Notes: Standard errors in parentheses, clustered at the SA2 level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Outcomes correspond to their **average** at the SA2 level. Immigration flows are measured relative to the local SA2 population in the prior year. Control variables include log population, population density, apartment ratio, and university-educated share. All specifications include SA2 and state-year fixed effects. Immigrants whose origin is New Zealand, the UK, the Isle of Man, Northern Ireland, Scotland, Wales, Guernsey, Jersey, and Ireland are excluded. One lag included both for the dependent and variable and immigration inflows.

C Robustness and Additional Results - Heterogeneity

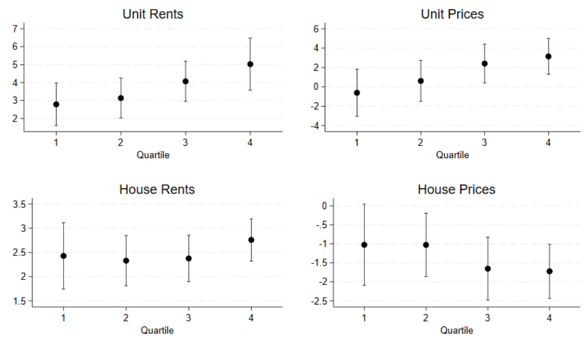
Figure C.1, similar to Figure 4 in the main text, displays the heterogeneous responses (coefficients $\beta_{h,W}$, equation (3)) for dwelling approvals per residents (Panel A) and per existing dwelling (Panel B). As discussed in the main text, there is no indication of heterogeneity in these dimensions.



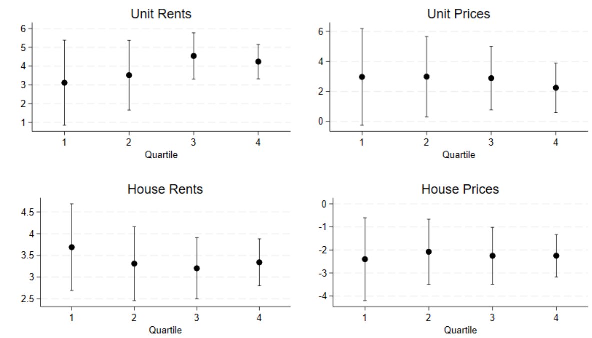
Panel A - Building Approvals per Resident



Panel B - Building Approvals per Existing Dwelling



Panel C - Unit Prices



Panel D - House Prices

Figure C.1: Heterogeneity Analysis

Notes: Bands represent 95% confidence intervals based on standard errors clustered at the SA2 level. Panel A splits neighborhoods in quartiles of the number of dwellings approved for construction per square resident, and Panel B does the same for the number of dwellings approved as a fraction of existing dwellings. Panels C and D show the coefficients by quartile of the distribution of unit and house prices, respectively, after controlling the latter for state-year fixed effects. All models include SA2 and state-year fixed effects, and controls include log population, population density, median age, apartment share, and university education rates.

The bottom two panels illustrate heterogeneity in responses across quartiles of unit and house price levels, based on residuals from regressions that control for state-year fixed effects. We find suggestive evidence that immigration has a stronger effect on rents in high-price neighborhoods - both for units and houses. Additionally, unit prices appear more responsive in areas with already high unit prices. While this certainly does not amount to definitive evidence, they are consistent with a potential supply-side mechanism: high-price areas may face tighter supply constraints, implying lower elasticity of housing supply.