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Population density: where is it the highest and what does it mean for housing trends

With Australia's population moving through the fastest rate of growth since the 1950's, our cities and towns are naturally densifying. At a national level, the population density of 3.5 people per square kilometer (sq. km) is among the lowest in the world, highlighting our highly urbanised population where half the populace live in the three largest cities. In fact, 75% of Australia's population resides on just 2.6% of the land mass.

The density of the population, which is simply the number of residents divided by the land area, becomes more relevant at a city level and even more interesting across smaller areas.

Melbourne records the highest population density across the capital cities

At the capital city level, the highest population density may come as a surprise – it's not Sydney. In fact, Sydney comes in third on the population density leagues tables with 441 residents per sq. km. Melbourne (521 people per sq. km) and Adelaide (444 people per sq. km) both show an overall population density that is higher than Sydney's.

Sydney's lower population density relative to Melbourne and Adelaide comes despite Sydney having a larger portion of medium to high density housing stock (units comprise 39.5% of all Sydney dwellings compared with 33.4% in Melbourne), and generally smaller blocks of land (the median land

area for houses sold over the past year, at 569sqm was the second lowest of any capital after Perth).

An important factor contributing to the lower population density across Sydney is the larger land area that comprises the metropolitan region. The Sydney metro area, as defined by the 2021 Greater Capital City Statistical Area (GCCSA) boundary, includes the Central Coast, the Blue Mountains, Penrith and Sutherland covering 12,369 sq. km's.

Every capital city is recording a rise in population density, **however, the way this is occurring is quite different from region to region.**

For example, Perth has recorded the largest increase in population over the past 20 years, with 54.4% more residents, yet it has the highest portion of detached houses of any capital, comprising 85.5% of the housing stock. Rather than 'building higher', Perth has densified via smaller block sizes for detached housing alongside a sprawling urban footprint, where the population has spread to the northern and southern fringes of the city.

A different example of densification can be seen in the ACT, where medium to high density housing stock has risen from a share of 25.1% of all dwellings 10 years ago to 34.2% in 2024, while the median block size for houses sold over the past 12 months remains among the highest of any capital at 750sqm.
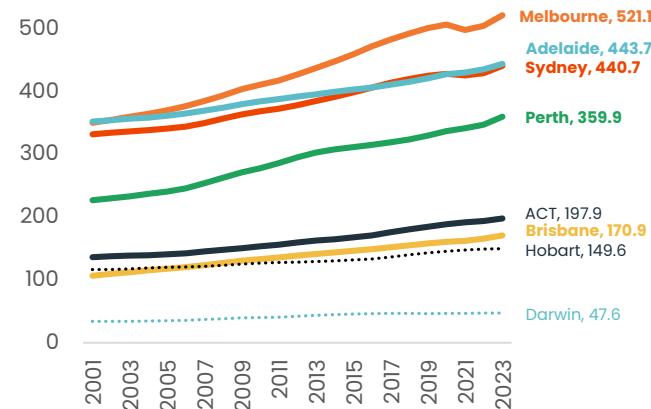
Summary of population density over the past 20 years

GCCSA name	Land area (sq km)	Estimated residential population			Population density (residents/sq. km.)		
		2003	2013	2023	2003	2013	2023
Melbourne	9,993	3,594,031	4,370,067	5,207,145	359.7	437.3	521.1
Adelaide	3,260	1,162,250	1,289,696	1,446,380	356.5	395.6	443.7
Sydney	12,369	4,162,593	4,757,364	5,450,496	336.5	384.6	440.7
Perth	6,417	1,496,016	1,943,855	2,309,338	233.1	302.9	359.9
ACT	2,358	327,357	383,257	466,566	138.8	162.5	197.9
Brisbane	15,842	1,780,650	2,241,944	2,706,966	112.4	141.5	170.9
Hobart	1,695	199,788	219,315	253,654	117.8	129.4	149.6
Darwin	3,168	108,433	138,471	150,736	34.2	43.7	47.6
Capitals	55,101	12,831,118	15,343,969	17,991,281	232.9	278.5	326.5
Regional	7,632,738	6,887,283	7,781,198	8,652,627	0.9	1.0	1.1
Total Australia	**7,687,839**	**19,718,401**	**23,125,167**	**26,643,908**	**2.6**	**3.0**	**3.5**

Source: CoreLogic, ABS

Population density, Australian capitals
Number of residents per sq. km.

Melbourne, 521.1
Adelaide, 443.7
Sydney, 440.7
Perth, 359.9
ACT, 197.9
Brisbane, 170.9
Hobart, 149.6
Darwin, 47.6

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Analysing population density at a geographically granular level reveals inner city precincts of Melbourne and Sydney dominate the highest density locations nationally, however the rankings of density have changed remarkably over the past 20 years.

In 2003, areas of Sydney comprised 19 of the top 20 SA2's for the highest population density. Melbourne's CBD-East was the only non-Sydney area included in the top 20, ranked 17th.

Fast forward to 2023 and the data shows Sydney now comprises 'only' 13 of the top 20 highest density SA2's, with Melbourne now occupying seven of the top 20, including the top two positions.

Melbourne's CBD-North has topped the list for the highest population density in Australia since 2013. This 0.6 square kilometer area that includes the RMIT campus and Victoria Markets, was home to 21,566 residents in 2023, equating to a population density of 38,401 residents per sq. km. In 2001, this precinct was ranked 187th for population density nationally.

Melbourne's Southbank-East SA2 region has ranked second for population density since 2019, climbing from a ranking of 113th in 2001.

The Sydney (South)-Haymarket SA2 was ranked third for population density, slipping from a consistent number one ranking between 2009 and 2012, followed by Sydney's Chippendale and Melbourne CBD-West rounding out the top five regions for population density.

Outside of the Sydney and Melbourne metro areas, the SA2 regions with highest population density nationally were concentrated in Brisbane (Fortitude Valley was ranked 27th nationally, home to 8,643 residents per sq. km), the Gold Coast (Surfers Paradise – North was ranked 97th) and the ACT's Kingston (107th).

SA2 leagues tables: highest population density in 2023

Top 20 ranked SA2's, Australia

SA2 name	SA4 name	Area sqm km	Estimated residential population			Population density (residents/sq km)			National density rank		
			2003	2013	2023	2003	2013	2023	2003	2013	2023
Melbourne CBD - North	Melbourne - Inner	0.6	2,969	9,591	21,566	5,287	17,078	38,401	46	1	1
Southbank - East	Melbourne - Inner	0.8	4,677	9,873	18,748	5,817	12,280	23,318	33	9	2
Sydney (South) - Haymarket	Sydney - City and Inner South	1.1	11,889	18,142	22,653	10,998	16,783	20,956	3	2	3
Chippendale	Sydney - City and Inner South	0.5	3,461	6,110	9,282	7,456	13,162	19,996	12	7	4
Melbourne CBD - West	Melbourne - Inner	1.0	2,974	10,413	20,027	2,959	10,360	19,925	195	12	5
Wolli Creek	Sydney - Inner South West	0.7	1,978	4,311	11,872	2,911	6,344	17,472	203	49	6
Zetland	Sydney - City and Inner South	0.8	1,524	6,082	13,968	1,894	7,558	17,358	536	32	7
Ultimo	Sydney - City and Inner South	0.6	4,883	8,261	9,316	8,738	14,783	16,671	6	3	8
Waterloo	Sydney - City and Inner South	1.1	7,488	12,380	17,851	6,604	10,918	15,743	20	11	9
Melbourne CBD - East	Melbourne - Inner	0.8	5,457	9,646	12,408	6,804	12,027	15,471	17	10	10
Pyrmont	Sydney - City and Inner South	0.9	9,123	13,155	13,735	9,811	14,147	14,770	5	5	11
Potts Point - Woolloomooloo	Sydney - City and Inner South	1.5	17,289	20,763	19,076	11,813	14,186	13,034	1	4	12
Darlinghurst	Sydney - City and Inner South	0.9	9,093	11,640	11,124	10,612	13,584	12,982	4	6	13
Surry Hills	Sydney - City and Inner South	1.3	14,764	17,103	16,781	11,215	12,992	12,748	2	8	14
Rhodes	Sydney - Inner West	1.0	477	8,666	12,263	474	8,614	12,190	1,245	17	15
Carlton	Melbourne - Inner	1.8	10,611	16,719	21,376	5,834	9,193	11,753	32	14	16
South Yarra - North	Melbourne - Inner	1.2	5,520	8,102	12,938	4,720	6,927	11,062	65	38	17
Hurstville - Central	Sydney - Inner South West	1.2	7,112	9,683	13,413	5,799	7,895	10,937	35	22	18
West Melbourne - Residential	Melbourne - Inner	0.8	2,570	4,461	8,724	3,116	5,409	10,578	169	76	19
Newtown (NSW)	Sydney - City and Inner South	1.6	13,239	15,276	15,397	8,429	9,726	9,803	7	13	20

Top ranked SA2's for each capital outside Sydney and Melbourne

SA2 name	SA4 name	Area sqm km	2003	2013	2023	2003	2013	2023	2003	2013	2023
Fortitude Valley	Brisbane Inner City	1.3	3,873	6,198	11,016	3,039	4,863	8,643	181	92	27
Kingston (ACT)	Australian Capital Territory	1.4	1,929	3,757	7,227	1,374	2,676	5,148	807	344	107
Perth (North) - Highgate	Perth - Inner	3.0	7,566	11,482	12,879	2,553	3,874	4,345	278	145	149
Unley - Parkside	Adelaide - Central and Hills	7.1	19,618	20,583	21,759	2,774	2,910	3,077	223	293	313
Nightcliff	Darwin	1.5	3,574	4,161	4,076	2,463	2,867	2,809	308	299	376
West Moonah	Hobart	1.8	3,883	3,913	4,327	2,172	2,189	2,421	401	521	519

Top 10 ranked SA2's for regional Australia

SA2 name	SA4 name	Area sqm km	2003	2013	2023	2003	2013	2023	2003	2013	2023
Surfers Paradise - North	Gold Coast	2.5	8,042	10,250	13,767	3,273	4,172	5,603	143	125	97
Mermaid Beach - Broadbeach	Gold Coast	3.0	9,794	11,720	15,313	3,266	3,908	5,107	144	141	110
Surfers Paradise - South	Gold Coast	3.3	9,735	12,190	16,065	2,915	3,651	4,811	202	174	118
Labrador	Gold Coast	5.0	15,542	17,918	19,367	3,111	3,587	3,877	171	179	190
Coolangatta	Gold Coast	1.9	4,688	5,813	6,906	2,465	3,057	3,632	306	256	223
Newcastle - Cooks Hill	Newcastle & Lake Macquarie	4.0	8,998	10,991	13,764	2,262	2,764	3,461	364	329	249
Biggera Waters	Gold Coast	3.2	5,036	7,617	10,654	1,586	2,399	3,356	689	431	266
Wollongong - East	Illawarra	5.5	10,155	13,656	17,078	1,845	2,481	3,103	564	402	307
Wollongong - West	Illawarra	5.7	15,051	16,633	17,039	2,660	2,939	3,011	249	282	328
Varsity Lakes	Gold Coast	6.0	9,185	15,322	17,688	1,544	2,575	2,972	711	363	339

Source: CoreLogic, ABS

The relationship between population density and housing trends

The relationship between population density and rental growth is weak. Population density across the *unit* sector provides little explanatory value about unit rental growth over the past 12 months or the past 10 years. Areas with a high population density have shown slightly stronger rental appreciation over the past 12 months relative to lower population density areas, but slightly weaker growth over the past decade.

The relationship between density and appreciation in *house* rents is even weaker than seen across the unit sector, but the weak relationship runs opposite to that of units, where higher population densities have been associated with slightly weaker rental appreciation than areas with a lower population density over the past 12 months and slightly stronger over the past decade.

Of the 20 highest density SA2 locations nationally, only two recorded a larger rise in unit rents over the past 12 months than the capital city benchmark. Both were in Sydney: Chippendale (+9.4%) and Hurstville-Central (+11.7%).

The relationship between unit *values* and population density is more significant, with high density unit markets generally showing a lower level of value growth over both the past 12 months, and past 10 years – although the longer-term relationship is more significant, potentially reflecting periods of higher unit supply that weighed on value appreciation.
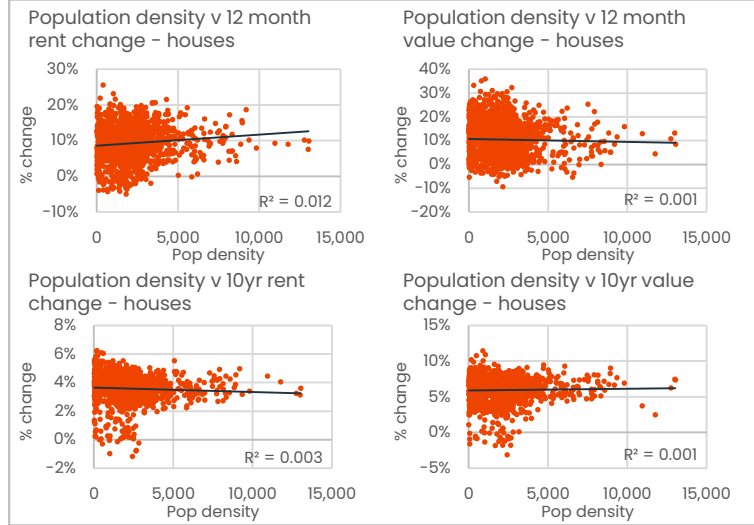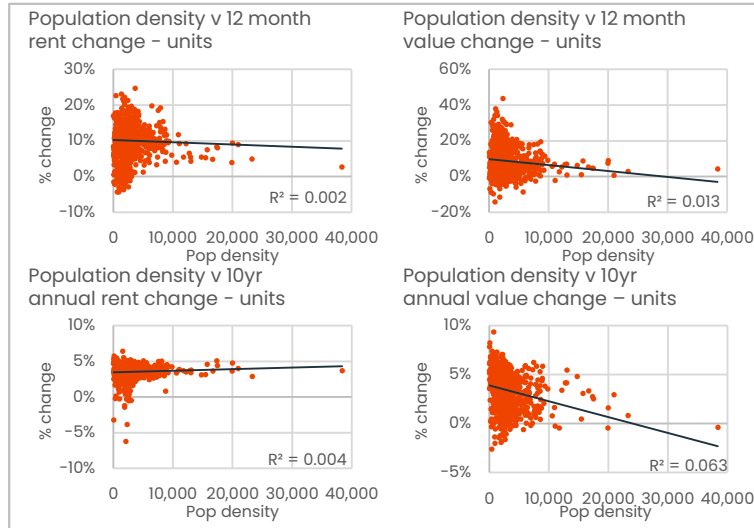
Sixteen of the top 20 have recorded a lower annual rate of unit value growth over the past decade relative to the broader capital city trend. Over the past 12 months, nine of the top 20 have underperformed.

On the other hand, high population densities provide virtually no explanatory power for house values with the coefficient of determination just .001 over the past 12 months and over the past decade.

Over the long term, precincts with a high population density tend to show slightly stronger growth in unit rents, but softer rates of capital appreciation across the unit sector, while for houses there is hardly any relationship between population density and trends in rental or value appreciation.

Stronger rental growth for units is unsurprising given the high level of amenity along with proximity to major employment nodes and academic facilities that is typical for high density precincts. They are likely to be popular across a broad range of cohorts including students, inner city professionals, service workers and migrants.

Softer value growth despite generally high levels of population growth and strong rental demand may be attributable to the propensity for higher levels of new housing supply in these same precincts. New supply, especially across the high rise sector, can be 'bulky' with the potential to deliver hundreds, if not thousands of new dwellings to a market in a relatively short space of time.

Population density v 12 month rent change - units ($R^2 = 0.002$)

Population density v 12 month value change - units ($R^2 = 0.013$)

Population density v 10yr annual rent change - units ($R^2 = 0.004$)

Population density v 10yr annual value change – units ($R^2 = 0.063$)

Population density v 12 month rent change - houses ($R^2 = 0.012$)

Population density v 12 month value change - houses ($R^2 = 0.001$)

Population density v 10yr rent change - houses ($R^2 = 0.003$)

Population density v 10yr value change - houses ($R^2 = 0.001$)

Change in rents and values
Unit markets within the top 20 highest population density SA2's

SA2 Name	City	Population density	Median value	Change in rents		Change in values	
				Annual 10yrs	Past 12 months	Annual over 10yrs	Past 12 months
Melbourne CBD - North	Melbourne	38,401.0	$451,058	3.7%	2.7%	-0.4%	4.3%
Southbank - East	Melbourne	23,318.4	$601,658	2.9%	4.9%	0.8%	2.9%
Sydney (South) - Haymarket	Sydney	20,955.6	$1,107,889	4.0%	9.0%	2.9%	0.8%
Chippendale	Sydney	19,995.7	$823,243	4.8%	9.4%	1.6%	8.9%
Melbourne CBD - West	Melbourne	19,925.4	$448,958	3.7%	3.9%	-0.4%	7.6%
Wolli Creek	Sydney	17,471.6	$789,644	4.4%	8.1%	2.5%	4.7%
Zetland	Sydney	17,358.0	$1,025,993	5.1%	8.4%	2.8%	4.8%
Ultimo	Sydney	16,671.4	$746,784	3.6%	4.9%	3.3%	5.4%
Waterloo	Sydney	15,743.0	$980,300	4.6%	7.6%	3.1%	8.8%
Melbourne CBD - East	Melbourne	15,471.3	$513,402	3.2%	5.3%	0.5%	1.0%
Pyrmont	Sydney	14,770.4	$1,345,444	3.1%	5.5%	4.8%	6.3%
Potts Point - Woolloomooloo	Sydney	13,033.6	$1,116,408	3.8%	4.3%	5.5%	0.9%
Darlinghurst	Sydney	12,981.7	$1,133,127	3.4%	5.5%	4.1%	7.1%
Surry Hills	Sydney	12,747.6	$975,033	3.7%	6.5%	4.2%	6.9%
Rhodes	Sydney	12,189.9	$993,579	3.5%	9.2%	3.4%	5.5%
Carlton	Melbourne	11,753.5	$363,302	3.7%	5.5%	-0.4%	2.7%
South Yarra - North	Melbourne	11,061.9	$582,762	3.8%	9.3%	-0.3%	-2.2%
Hurstville - Central	Sydney	10,936.9	$711,859	3.8%	11.7%	1.7%	7.1%
West Melbourne - Residential	Melbourne	10,578.4	$551,101	3.4%	4.0%	0.8%	5.8%
Newtown (NSW)	Sydney	9,802.6	$838,744	4.2%	6.0%	3.5%	9.2%
Greater Sydney	Sydney	440.7	$839,344	3.6%	9.4%	3.8%	6.9%
Greater Melbourne	Melbourne	521.1	$612,906	3.7%	9.4%	2.4%	3.0%

Source: CoreLogic, ABS