Understanding Regional Data: Population

Population

This fact sheet provides a high-level guide to finding and using regional population data.

Businesses, governments and communities use population data to understand the size and growth of their region.

More than just knowing how many people live in a particular area, population can be used as an important indicator of local outcomes. For example, population data can help to look at:

- how a region fared in the last ten years
- how a region's population changed in the years following a natural disaster
- the impact of a major firm closure on the local area's population.

It can also be helpful to put population change and component figures into context by comparing a region to others of the same geographical classification, its state/ territory, or Australia.

Data source

The Australian Bureau of Statistics (ABS) Estimated Resident Population (ERP) is the official annual estimate of Australia's population at the regional level. This includes all people who usually live in Australia, regardless of nationality, citizenship or visa status, with the exception of people present for foreign military, consular or diplomatic reasons. There are three components of ERP: births and deaths, internal migration and overseas migration.

The ABS also publishes State and Territory population estimates quarterly.

Investigating regional population

Quantitative (numerical) data can be used to get a snapshot of what is happening in a particular location or region. However, often qualitative (descriptive) data is required to help explain what is occurring and why.

The following describes different elements of population data and ways to consider and analyse it.

Geographical scale

The geographic lens through which to investigate a region strongly influences the analysis and results.

For greater detail on geographical classifications refer to BCARR fact sheet: *Understanding statistical geography.*

Commonly used geographical scales of interest for regional population data include:

- Local Government Areas (LGA)
- Remoteness Areas (RA)
- Significant Urban Areas (SUA)
- Statistical Areas Levels 2 to 4
- Greater Capital City Statistical Areas (GCCSA)

Population estimates can also be constructed for custom geographies, such as Working Zones.

For most geographies, population estimates are readily available from 2001; estimates for other geographies may only be available as a consultancy – so this may influence which geographical scale you choose for your analysis.

Population size

Population size provides context to interpret the outcomes of a region. Larger population sizes (e.g. over 100,000 persons) are generally associated with population growth and a greater ability to adapt to economic shocks.

As data describing large regions can hide variation within them, it can help to analyse smaller regions within larger areas to form a complete picture. For example, when looking at Statistical Areas 4 (SA4s), consider whether they reflect a single large centre, or several smaller towns and cities. In the latter case, it can be useful to examine the population size and growth for these separately, depending on the aim of the analysis.

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Components of population change

Births, deaths and migration provide insight into the drivers of population change. For example, population growth may be due to strong internal migration from other areas, or it may be primarily due to births.

Components of population change, 2019–2020 (%)

Legend: Natural increase | Net internal migration | Net overseas migration | Total population change
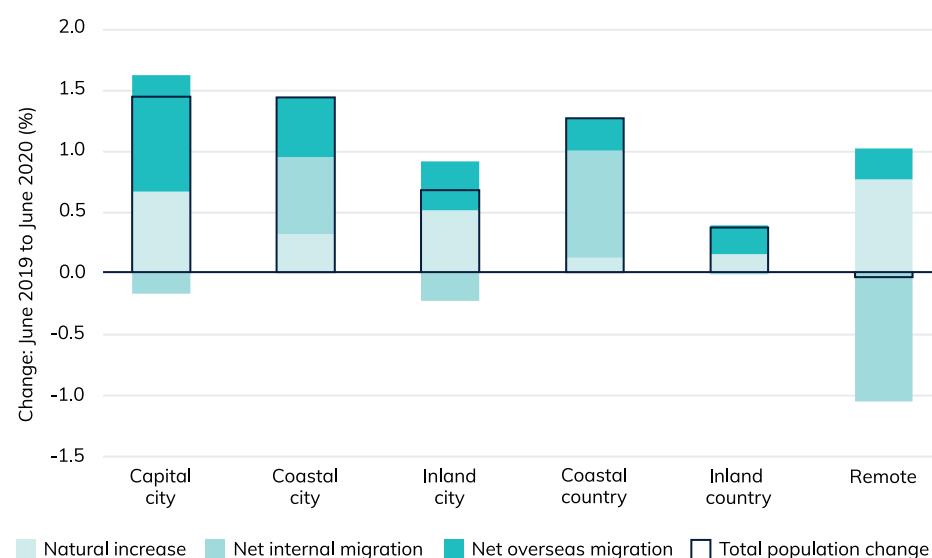
Population change

Population growth provides an indication of how the region of interest is tracking year on year. For example, analysing the number of years for which a region is experiencing population decline – particularly continuous decline – is a useful indicator of whether decline is persistent or temporary. Factors to consider for a region could be the number of years of population decline in the last decade or the number of consecutive years of population decline. Alternatively, regions can experience rapid population growth from people being attracted to move into the area.

Presentation tip: Comparing the growth rates in a summary table

A table is useful for presenting exact values, especially when there are many regions. For example, it enables a comparison of changes in population in the past year during COVID with long term population trends.

Significant Urban Area	2020 Population	10 Year: AAC 2010 to 2020 (%)	5 Year: AAC 2015 to 2020 (%)	1 Year: AAC 2019 to 2020 (%)
Bairnsdale VIC	15,592	1.6	1.4	0.2
Sale VIC	15,302	0.7	0.7	1.1
Port Hedland WA	14,804	0.6	0.3	2.2
Broome WA	14,403	1.0	-0.3	0.2
Port Pirie SA	14,086	-0.2	-0.5	-0.5
AUSTRALIA	25,697,298	1.6	1.5	1.3

AAC: Average Annual Change

How to calculate

Average annual population growth rates can be calculated by a simple formula using programs such as Excel. The average annual growth as a percentage is calculated as:

$$\left(\frac{Ending\ balance}{Beginning\ balance} \right)^{\wedge} \left(\frac{1}{Number\ of\ years} \right) - 1$$

Note that calculating a change will be determined by the two years chosen, so it is helpful to be aware of when a year with a peak or a trough is part of the calculation. For example, Broome's population beginning period in 2010 would create a very different result to taking a beginning period after 2013.

A chart is useful to understand how population changes are occurring each year across regions over longer periods of time. Charts are also helpful in identifying at what point a trend changes.


Presentation tip: Comparing one or more regions' population growth compared to the state or national growth (using an index approach)

Indexing is setting the starting year at 100 (the base year) and measuring the change from that year. This is useful for two reasons: it enables the comparison of different regions with different population sizes from a chosen starting point (the base year) so that they can be displayed on a graph together, and it allows comparison on the basis of percentage change.

For example, the year on year change allows us to see that Broome had a strong population growth rate until 2013 followed by gradual population decline. The indexing reveals how its change in percentage terms from the base year compares to that of other regions. If you see an interesting pattern (here Broome) the next step would be to look at other data including qualitative information to explain the pattern.

Population index for Significant Urban Areas

Legend: Bairnsdale VIC | Sale VIC | Port Hedland WA | Broome WA | Port Pirie SA | Australia
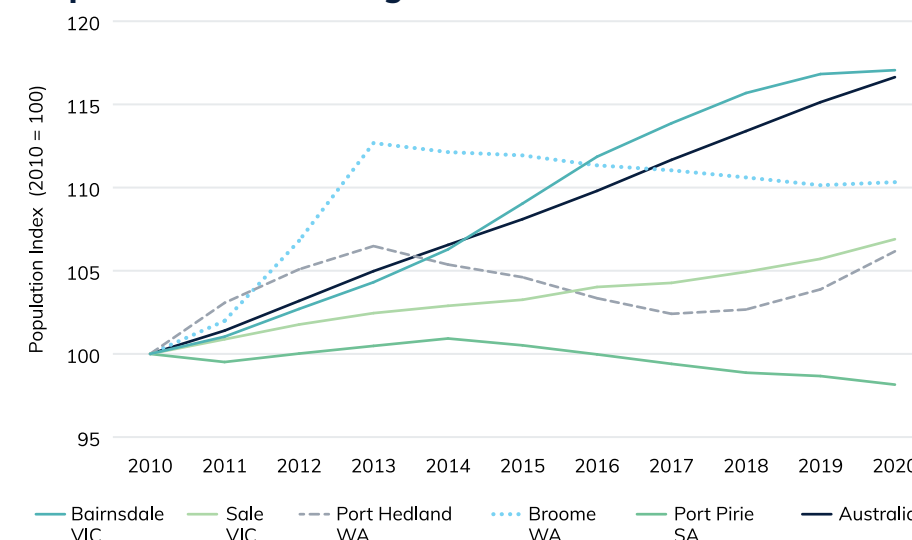
How to calculate

The formula is: given year/base year *100.

For example, an index of 120 (or 80) for a given year shows that the region's population has grown by 20 per cent (declined by 20 per cent) since the base year.

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