APRIL 2023

# SGS Cities & Regions Wellbeing Index

Socio-economic insights to inform policy and investment decisions.

# Acknowledgment of Country

SGS Economics and Planning acknowledges the First Nations Peoples of Australia and on whose Country we live and work.

SGS Economics and Planning acknowledges that the Aboriginal and Torres Strait Islander peoples of Australia are one of the oldest continuing living cultures on Earth, have one of the oldest continuing land tenure systems in the World, and have one of the oldest continuing land use planning and management systems in the World.

We pay our respects to the First Nations Peoples, past and present, and acknowledge their stewardship of Country over thousands of years.



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OFFICES IN CANBERRA, HOBART, MELBOURNE, AND SYDNEY ON THE COUNTRY OF THE NGAMBRI/NGUNNAWAL/NGARIGO, MUWININA, WURUNDJERI, AND GADIGAL PEOPLES.

# Foreword

For over 10 years, SGS Economics and Planning has reported on the state of the economy and the economic performance of Australia's cities and regions. As leading public policy advisors, we are serious about shaping more sustainable places, communities, and economies. We want to contribute to building an economy that works for people and the planet.

The COVID-19 pandemic starkly showed how communities' physical health, mental wellbeing and the economy are fundamentally interlinked. It also showed that where people live strongly influences their level of wellbeing and how they experience society, the economy and climate change.

Now, more than ever, we need to consider the spatial impacts of public policy decisions and how they will improve people's lives.

Previous releases of this publication focused on creating and tracking economic data at a regional scale. This research highlighted that our cities and regions are not homogenous economic masses. While some cities and regions are growing rapidly, others are falling behind.

However, we believe that sound economics does not simply measure output and growth alone. It should also measure if this is distributed equitably, if people are safer, healthy and happier as a result, if are they satisfied with their work, feeling connected to others, and have access to nature.

The SGS Cities and Regions Wellbeing Index (CRWI) expands on the story of our cities and regions. For the first time, our economists, planners and data scientists have carefully assembled a wide range of available information to go beyond small area economic data and track several key indicators that influence wellbeing at a regional scale.

It's highlighted that the story of Australia's cities and regions is one of spatial inequality – where you live strongly influences your experiences. This can be felt within our cities, but also between our cities and regions. Understanding these spatial differences is vital for a stronger economy, and stronger communities. It is our hope that the SGS CRWI is a tool for better decisions, policymaking and investment.

Over time we hope to bring more data to better understand and track Australia's wellbeing progress, and where more effort is needed.

Whether you are in academia, education, health care, private industry, or a concerned citizen, I hope you find The SGS CRWI valuable as we collectively push towards a brighter future for all Australians.

**Alison Holloway**
Chief Executive Officer,
SGS Economics and Planning

# Contents

# Introduction

SGS Economics and Planning (SGS) is an employee-owned public policy advisory and certified B Corp. Our evidence-based insights help government, business and community leaders understand how places and economies function, assess what projects and programs work, and plan future places and precincts. Beyond advisory services, we hold workshops and courses to share knowledge collaboratively.

## The purpose of the report – filling a gap in socio-economic research

Since 2020, Australia has experienced significant disruptions to its national economy and social fabric. Events like the COVID-19 pandemic affected the entire nation. The socio-economic impact of lockdowns and trade restrictions are far reaching. However, these impacts have not affected Australian cities and regions equally. Where people live shapes how communities experience these socio-economic shifts. While existing data tracks these changes to the Gross Domestic Product (GDP) at a national and state level, there is little work that illustrates how these historic events have affected the economic wellbeing of specific regions and communities in Australia.

This report does exactly that- illuminating the socio-economic wellbeing of Australian's regions. We take the familiar Gross Domestic Product (GDP) and break it down to economic activity in the local region (GRP- Gross Regional Product).

We then supplement that economic story with six other wellbeing indicators to create a more nuanced understanding of what people are experiencing.

## The importance of tracking data region by region

GDP data that tracks economic activity and growth at a national and state level, hides key differences between specific regions. SGS started synthesising small area estimates over 10 years ago to show that growth across our cities and regions differs significantly.

The data highlighted that our cities and regions are not homogenous economic masses. They are thriving economic hearts with distinct goods and services. Each region showcases a unique economic and social precinct contributing to Australia in its own way.

By spatially grounding economic, and now broader wellbeing data, we can better understand how the economy functions and how external shocks, policy and investment affect places. Extreme weather events clearly impact the economy and wellbeing of particular places, but lockdowns, major infrastructure projects and even national tax policy also have acute and important impacts on a place and a community. This needs to be clearly understood and considered for policy to be effectively developed and implemented.

**GEOGRAPHIES**

Australia's social and economic wellbeing has been analysed at several geographic levels:

- Australia, which represents the entire national economy and population
- The eight states and territories which make up Australia
- Capital Cities represents each state's capital city greater metropolitan area (i.e. Greater Sydney) and the Rest of State balance includes the many other regional centres and rural areas.
- Regions which are defined by ABS Statistical Area 3 (SA3s) and are broadly similar in size to a Local Government Area (LGA).

## Measuring the wellbeing of Australia's regions

We believe in economies that work for people and the planet. So, this year's report showcases our ground-breaking regional scale Wellbeing Index, which can be further explored in the interactive dashboard.

Economic output is just one aspect of progress and what matters to people and their communities. It is (partly) a means to an end, and not an end in of itself. Growth that doesn't improve lives, or which hurts the planet, does not necessarily represent positive progress for society. Therefore, at SGS, we believe a true measure of progress must account for the array of factors that shape the level of wellbeing in society.

Measuring society's wellbeing is no easy feat and can subjectively change depending on a citizen's context and personal beliefs. It is a complex, multifaceted, and nuanced concept and no standard definition or widely accepted measure exists. Wellbeing concepts include welfare, quality of life and life satisfaction. Often, these terms are used interchangeably. All attempt to capture the outcomes of physical, mental, emotional, social, and economic health.

There are a range of frameworks and several measures that capture wellbeing at the national level. While these can be useful, they don't capture how wellbeing varies across regions.

But we know there are many important location-specific drivers of wellbeing. For example, the availability and quality of green space, community resilience and social connections, environmental hazards, and the level of access to jobs, services, education and health, all differ across regions. Living in an area with high GRP is usually beneficial, but without a sense of community, green space in which to be active or relax, or access to quality education and health care, life can be very difficult.

The CRWI offers a view of our cities and regions based on seven objective wellbeing indicators:

- **Economy** – a region's economic output, productivity and diversity shows how well the local economy is performing
- **Income and Wealth** – communities with higher incomes and greater levels of wealth provide greater levels of security, stability and opportunities
- **Employment, Knowledge & Skills** – includes levels of education and engagement in the workforce which can contribute to financial and broader personal satisfaction
- **Housing** – includes rates of homelessness, affordability and overcrowding. Shelter is a basic human need and issues around access to housing impact wellbeing
- **Health** – considers life expectancy and rates of illness which can be linked a range of access to healthcare and cultural factors
- **Equality** – considers how things are balanced in a community. Including volunteer rates, work-life balance, income equality, gender and First Nations employment.
- **Environment** – assesses a location's risk to environmental hazards versus their access to national parks, reserves or protected areas.

A key feature, enabled via the online dashboard, is the ability for users to select and weight each of the 7 dimensions in a way that aligns with what matters most to them or their community (See Part C: Appendix for a detailed methodology).

Our approach allows policymakers to understand how regions are performing in relation to each other. As mentioned before, recent economic events have not affected the regions of Australia equally. Policy needs to account for these disparities. Our place-based research provides unique insight that allows policymakers to invest in regions in ways that responds to their local needs or strengths.

Many of these indicators interact, or are positively or negatively correlated. For example, regional Australians are more likely to have chronic health conditions, own their homes outright and are less likely to participate in the labour force on average compared to city dwellers. Part of this is simply because regional Australians are older (median age of 41.8 years compared to 37.1 years for city dwellers). However, many local factors relating to industry, geography, demography and policy within cities and regions result in significant variations in these indicators, from Townsville residents having fewer chronic health conditions than Brisbane residents; and Surf Coast – Bellarine Peninsula residents have higher labour force participation and employment rates than Greater Melbourne residents.

## Key insights from 2022

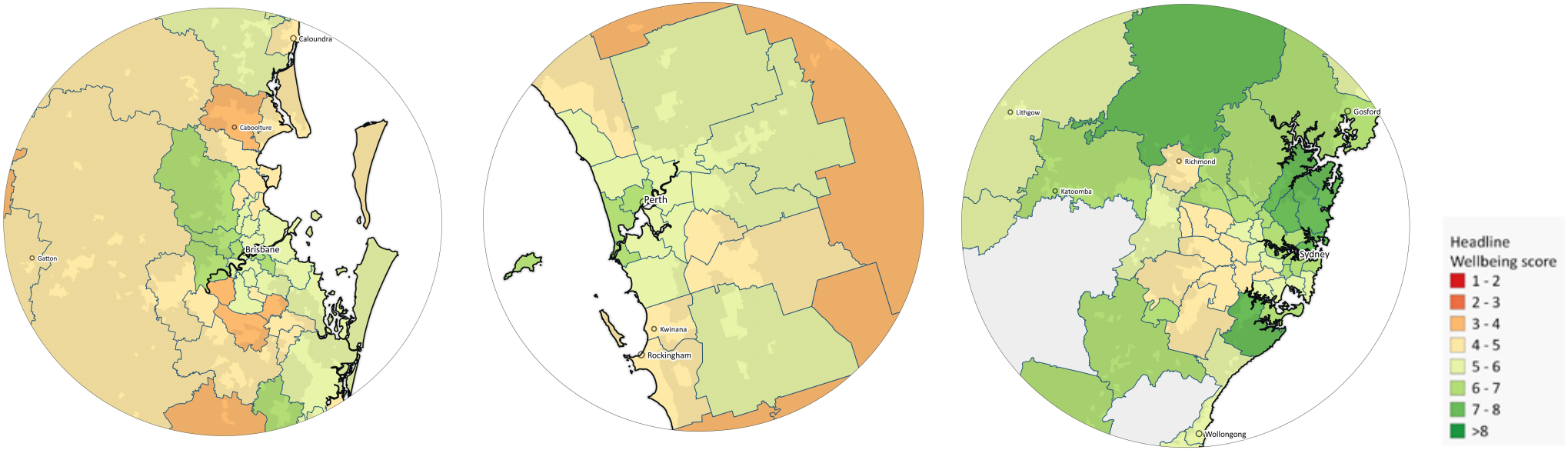
The data in this report clearly show that while across many measures Australia is doing well, it is also facing socio-economic challenges. Furthermore, how these achievements and challenges play out at a regional scale varies greatly, with some places thriving, while others are struggling with a combination of long running structural issues combined by recent shocks.

The hopes of a consumer-led recovery from the pandemic have not been fully realised – inflation started spiralling, real wages have fallen, savings are dwindling, and there are increasing labour shortages and supply chain issues, signalling that the economy is tipped to slow in 2023.

Our findings reinforce that Australia's economic performance continues to be heavily reliant on international trade and migration. Alongside this, there have been dramatically different rates of economic recovery between cities and regions. This disparity carries over to measures of wellbeing – with many regional areas experiencing significantly lower levels of wellbeing than capital cities, in part due to lower access to education and jobs.

Despite this divide, regional areas score similarly to metropolitan areas when it comes to metrics of Environment, Equality, and Housing. This is due in part to higher housing costs and lower access to open space in capital cities.

**WELLBEING IN SELECT CAPITAL CITY REGIONS: GREATER BRISBANE, PERTH AND SYDNEY**



# Part A: Overview

# Part A: Overview

## National Snapshot

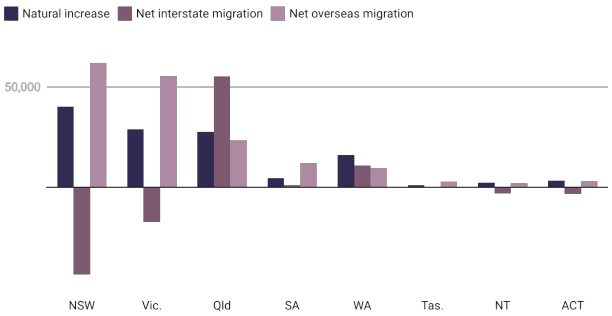
In many ways, the Australian economy in the financial year to June 2022 was even more volatile and uncertain than in previous years. Early in 2022, the Australian and global economy started to re-open and we began to learn to live with COVID-19. This created a range of supply chain issues and labour shortages which were further exacerbated by the war in Ukraine and surging energy prices globally. Further, the increasing impacts of climate change and more extreme weather events impacted key parts of the country and segments of the economy.

We saw a huge upswing in household consumption and tourism as people wanted to get back to 'normal', and in some respects, even make up for lost time. However, while population growth has recovered somewhat, it has not been able keep up with the huge surge in demand for skilled workers, resulting in record low unemployment.

Increased core costs (i.e. high energy prices), combined with high consumer demand and labour shortages have resulted in the recent surge in inflation, which the RBA is now attempting to tame through increasing interest rates.

**Components of annual population growth**

Year to June 2022

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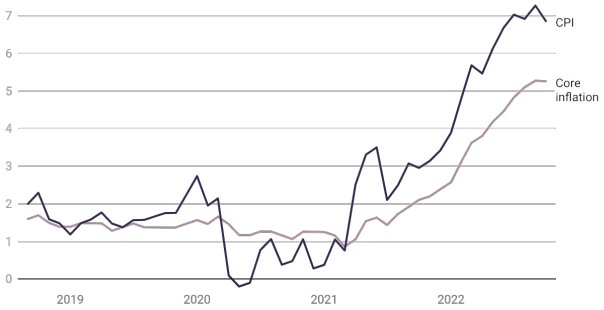
**Inflation**

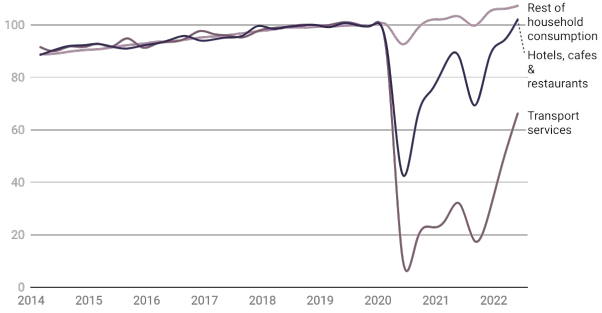
Annual inflation growth




Source: RBA • Created with Datawrapper

**Household consumption has rebounded**

Indexed to Dec-2019

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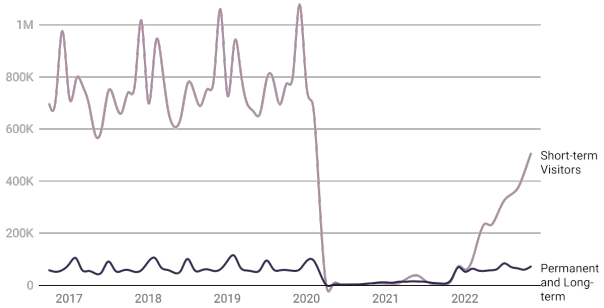
**Tourism is rebounding**

Monthly arrivals

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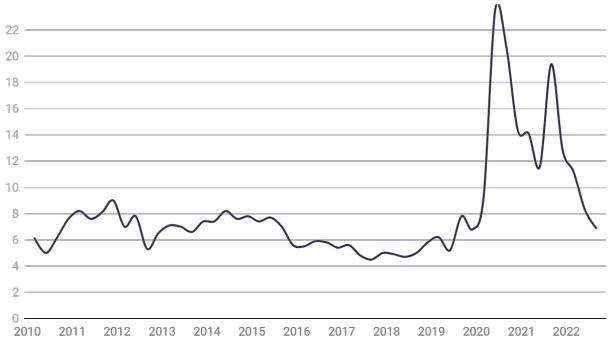
Record-low unemployment in July 2022 was not enough to improve our national standard of living, with real wages falling 4.5 per cent in the year to December 2022 despite prevailing labour shortages.

Households were also dipping into savings at rapid rates; a fall-out of increasing cash rates and costs of living pressures.

While GDP per capita showed positive growth again in 2022, this was not evenly shared or felt by all people across the economy.

The outlook is also increasingly uncertain, with the RBA and economists across the board signalling a narrowing path for Australia avoiding a recession in the coming year.

**Household savings rate**

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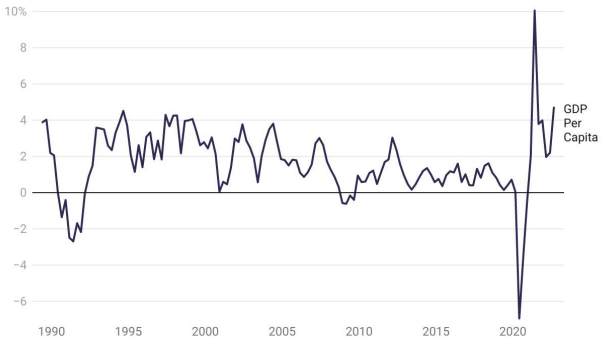
**Real GDP Per Capita**

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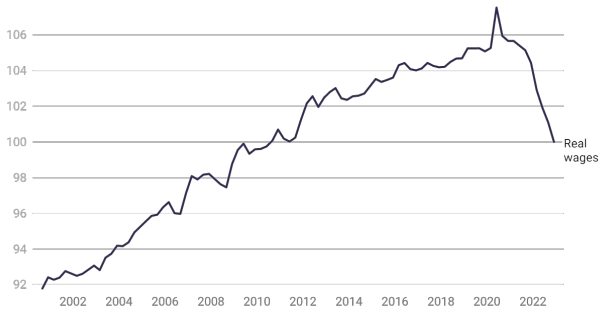
**Real wages**

Index of real wages, Dec 2022 = 100




Source: ABS 6401.0, 6345.0, RBA • Created with Datawrapper

# States & Territories Snapshot

### Cities and regions – a two speed economic recovery

Once we break down the national GDP story into States, Territories, Capital Cities and the Rest of States we begin to understand the diversity of economic experiences felt across the country.

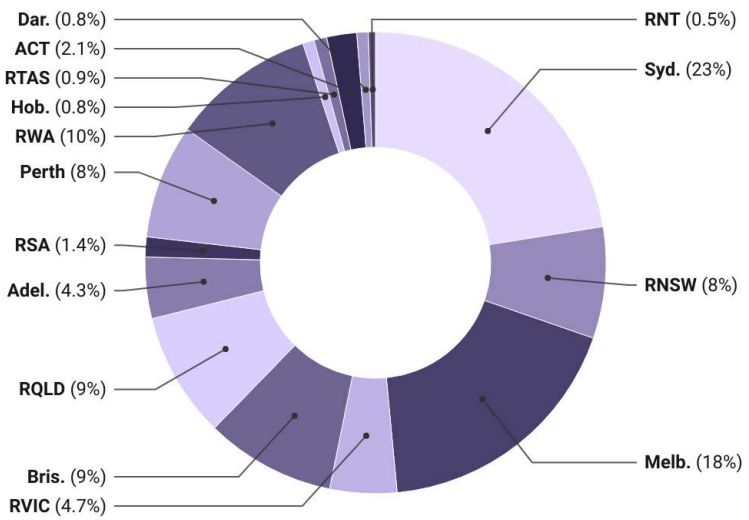
Combined, Melbourne and Sydney represent 40 per cent of Australia's economy.  A further 21 per cent comes from Brisbane, Perth and Adelaide. Western Australia is the only State where the regional areas contribute more than the capital, with regional WA represents 10 per cent of the national economy.

This current distribution largely reflects the distribution of economic growth of cities and regions over the last 10 years. The five largest capital cities have contributed 62 per cent of the nation's economic growth. Regional WA and Regional Qld have also been key to the economic success of the nation, adding 17 and 8 per cent respectively.

Our analysis suggests that between 2021 and 2022, the significantly differing rates of recovery seen in the sub-national economies was largely determined by two factors:

- exposure to pandemic restrictions, and
- the strength of regional economies, driven largely by Mining and Agriculture.

**Composition of Australia's economy**

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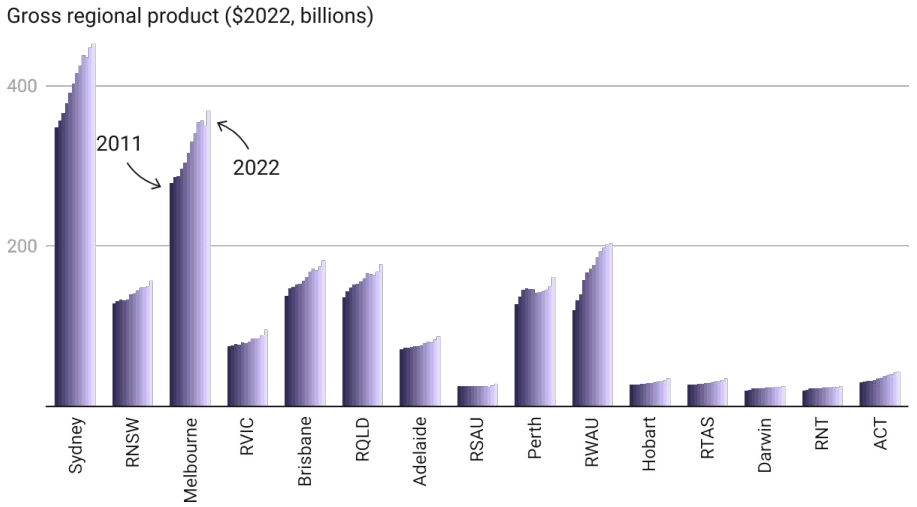
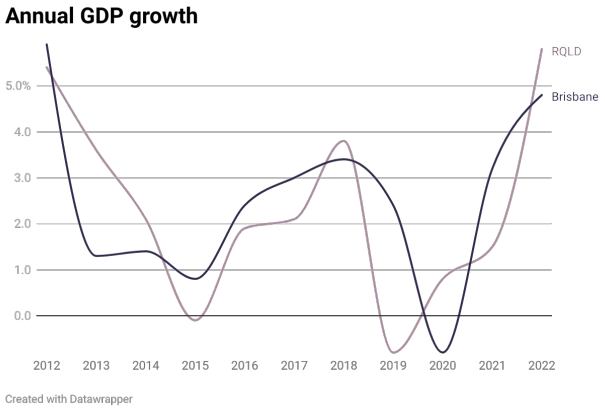
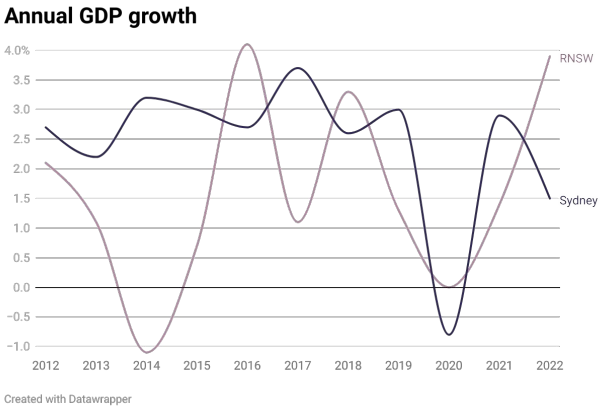
**Economies of Australia's Cities and Regions**

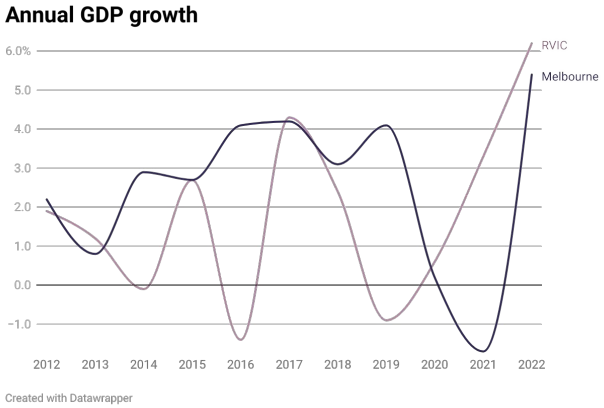



Source: SGS Economics & Planning, ABS • Created with Datawrapper

BRISBANE, SYDNEY AND MELBOURNE VS REST OF STATE GDP GROWTH, TEN YEARS TO 2021-22




Brisbane and Regional Queensland's GRP growth 2021-22 outperformed the traditional economic powerhouses of Sydney and Melbourne. A rise in interstate migration to Queensland boosted the demand for goods and services and expanded the workforce. Agriculture, Construction and Tourism have been strong despite the disruption of trade and a tight labour market in the Sunshine State.

Perth's GRP growth also experienced strong performance during this period, as the decline in Mining from falling iron ore prices was offset by strength in the rest of the economy. South Australia's performance held steady, Adelaide was more exposed to the pandemic than the rest of the state, given the concentration of services and parts of the manufacturing sector.

In comparison, Sydney's GRP grew marginally due to Delta and Omicron outbreaks, with the effects of restricted economic activity felt throughout 2022. The capital city retail and hospitality sectors weathered a 7.5 per cent decrease from 2021.

Melbourne, which experienced some of the longest lockdowns and direct impacts from the pandemic saw economic activity bounce back strongly (5.6 per cent), largely off the back of the construction sector.

ACT charted a steady recovery as its economy is based around service delivery and public administration less impacted by the pandemic. Outbreaks of Delta variant led to a public health response that involved lockdowns in late 2021-22, causing a fall in consumer services and hospitality sector. However, this was partially offset by a pick-up in Health Care output.

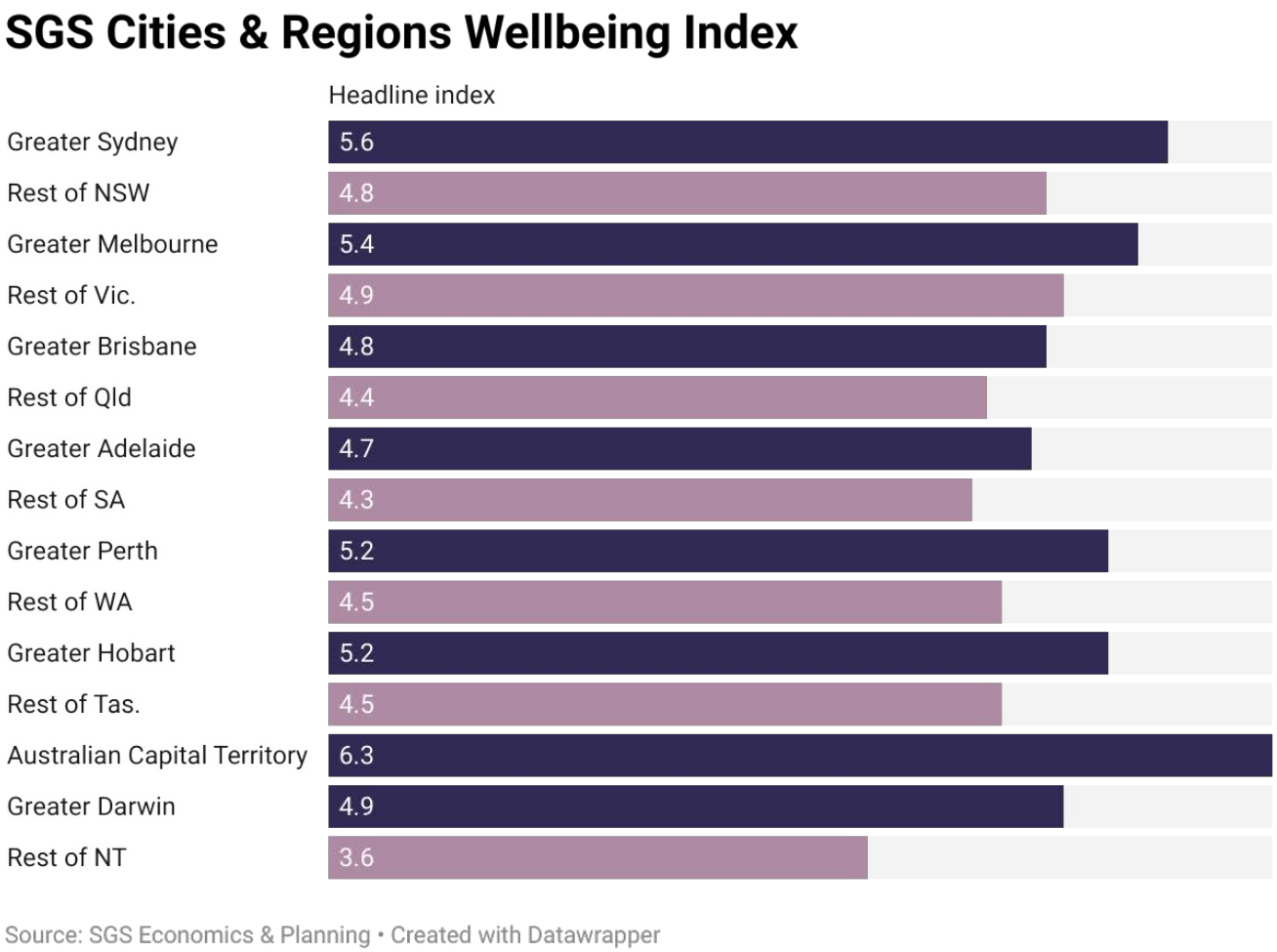
Tasmania and Northern Territory grew sharply in 2021-22, with GDP increasing by 4.3 per cent and 4.7 per cent respectively. Strong agricultural and mining outputs were major growth drivers, followed by health related industries.

# Going beyond GDP to understand the Wellbeing gap

If we move beyond GDP and take a more holistic view of what creates happier, healthier, more sustainable and resilient lives we see a slightly different picture. Clear wellbeing gaps continue to characterise experiences felt in our cities and regions, and more must be done to improve the wellbeing of rural and regional Australians. The ACT was the region that experienced the highest wellbeing overall, followed by Sydney and Melbourne. The Rest of NT experienced the lowest levels of wellbeing on the index.

As shown in the graph to the right, there is a clear divide between those 17.3 million living in greater Capital Cities, compared to the 8.4 million in Rest of State regions. All Capital Cities performed better than their respective Rest of State.

COMPARING CAPITAL CITY AND REGIONAL WELLBEING IN 2022: ALL WELLBEING DIMENSIONS



The greatest disparity between regional and metro areas nationally were in Health, Employment, Knowledge and Skills, and Income and Wealth outcomes.

- **Health**: Life expectancy is higher in Capital Cities than regional areas, at 84 years compared to 82. Those within Capital Cities are less likely to have two or more chronic illnesses (8 per cent versus 12 per cent).
- **Employment, Knowledge & Skills:** Labour force participation rates are higher in Capital Cities, which is in part driven by age. Rest of NT clearly lacked institutional access to education, employment and labour force opportunities.
- **Income and Wealth:** Rest of State regions have significantly lower median household incomes, and lower wealth, but more own their dwellings outright. Rest of SA and Rest of NT also performed lower compared to other regional areas in terms of wealth and income.

The regional wellbeing divide was narrower for Equality, Environment and Housing outcomes.

- **Equality, community & work-life balance:** Rest of State residents have greater work life balance, and slightly lower level of income inequality. There are similar rates of volunteering but greater gaps between First Nation and non-indigenous employment. Inner Capital City regions had similar rates of female and male labour force participation. In outer suburbs of Capital Cities and Rest of State regions, the differences in female and male labour force participation were more noticeable.
- **Environment:** Rest of State regions performed slightly better, or the same as respective Capital City regions.
- **Housing:** Sydney, Melbourne, Hobart all performed below their interstate counterparts, with low rental affordability, and higher rates of homelessness. Darwin and the Rest of NT were clear outliers when it came to housing with very high rates of overcrowding, marginal housing and homelessness.

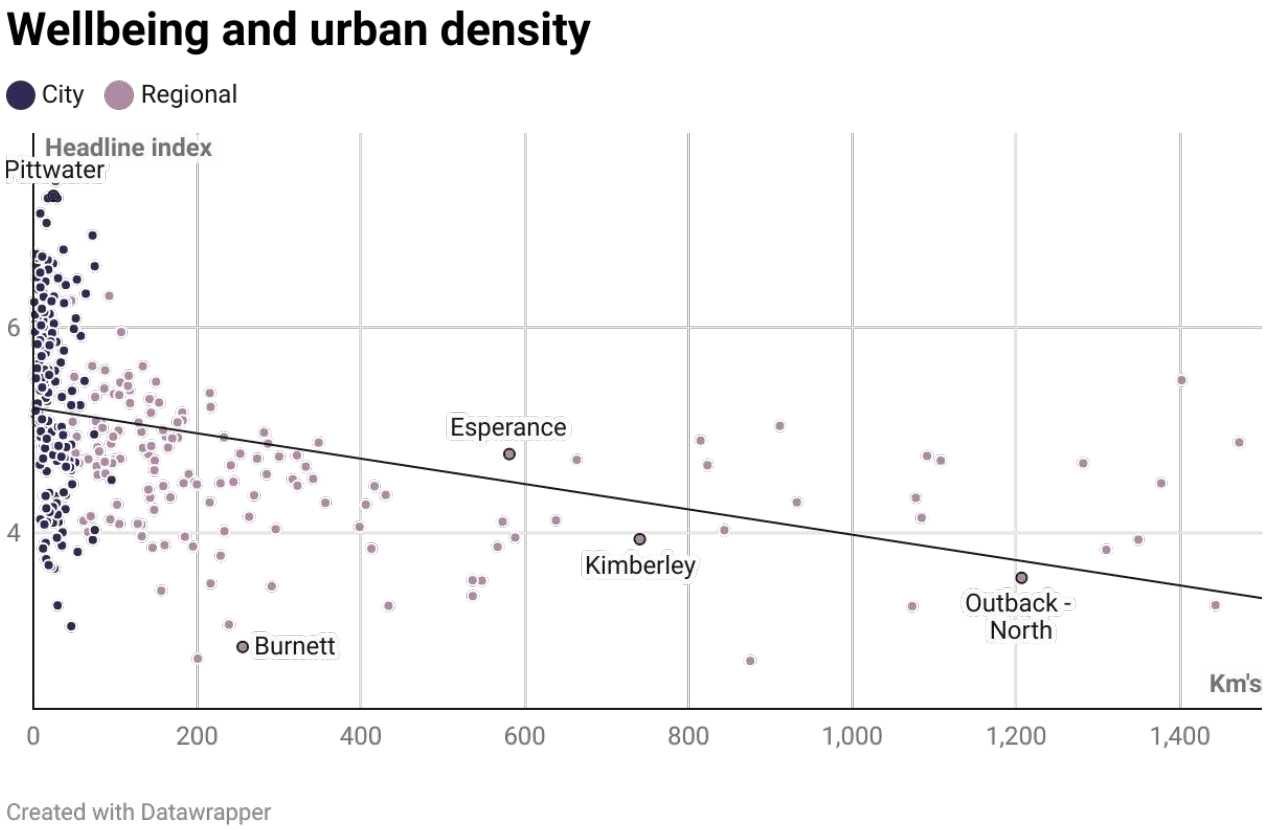
Nonetheless, Australia's housing crisis remains one of the greatest challenges in both metropolitan and regional areas. Poor housing affordability has serious implications for our wellbeing: secure housing is a basic human right and a key determinant of education and employment outcomes, social inclusion and life opportunity.

# The draw of the city, but good community makes for a happier life

Stepping below the Capital City and Rest of State level sheds even more light on the spatial divides, similarities and general trends across the Australia's many cities and regions.

Our city economies are powered by an established and growing concentration of knowledge-based capital, while Australia's regional economies are dominated by Mining, Agriculture, and Manufacturing. This is increasingly being supplemented by population-based services (i.e. retail, education and health).

Historically, the major Capital Cities of Australia have always had a strong influence on the outcomes of surrounding area, providing access to markets along with higher order education, services and employment opportunities. However, while regions located closer to capital cities typically score higher on The CRWI, this is not always the case. Some far-flung regions score higher than regions within the heart of our major cities. This picture can rapidly change when the weighting of the seven wellbeing dimensions is tweaked in the interactive dashboard – increased weight put on Housing can expose some of the key challenges facing our biggest cities, while increased weight places on Economy can highlight urban strengths compared to the challenge of rural areas.



# Choose your own adventure

Granular insights matter for pinpointing what is needed, and where. The SGS regional scale Wellbeing Index fills an important gap in socio-economic research, providing greater visibility of how wellbeing varies nationally. This can inform a greater understanding of where policy and investment decisions should be focused, and a baseline to measure their success.

The CRWI Interactive Dashboard enables users to further explore the headline index, along with its individual data components. It also enables the weightings to be adjusted across the seven Wellbeing Dimensions: Economy, Income and Wealth, Employment, Knowledge and Skills, Housing, Health, Equality, and Environment.

This provides a platform from which thousands of local stories can be uncovered and the basis for creating a future local economy that works for people and the planet.

**What does wellbeing mean to you?**

Head to our interactive dashboard to explore wellbeing outcomes where you live and to customise a comparison with other Australian regions.

# How can this inform a brighter future?

While understanding the relative wellbeing levels of our cities and regions is interesting, the Wellbeing Index is grounded in data and designed as a tool for policy makers to improve decisions.

Rather than focusing on a simple jobs and economic growth narrative, the Wellbeing Index can shed light on the locations and aspects of society that need our attention the most, it can also serve as a baseline from which we can measure success to ensure we invest in growth that improves people's lives and the planet.

### Understanding place, communities and economies

The CRWI provides a baseline understanding of any location across Australia. Importantly, it enables users to compare and contextualise a given location with other regions to understand similarities, differences, and opportunities to improve.  Over time, it can show the progress of our communities against various policy initiatives.

The Headline Wellbeing framework, developed by SGS, also links with broad international frameworks such as the OECD Wellbeing measure and the UN Sustainable Development Goals (SDGs). It can also act as a framework or starting point for additional location specific research into additional metrics or subjective measures.

### Shaping the future

The CRWI can inform or be integrated into local, regional and state plans and strategies. It can highlight the true economic and societal issues that matter and expose key challenges and opportunities that should be addressed through future strategic policy and major investment.

This could include: local housing strategies, activity centre plans, industry plan and targeting of for purpose investment.

### Assessing what works

Rather than assessing the jobs and output of a project, let's start measuring if it improves people's lives and the planet. The CRWI, provides a baseline and framework from which future policy programs and infrastructure investment can be assessed. Its data driven approach means it can be integrated alongside established evaluation approaches such as business cases and multi-criteria assessments.

It also highlights the complex, and often forgotten, interdependencies in wellbeing outcomes which is critical when assessing what works. Areas of increased climate risk can often be associated with areas of housing affordability and other economic challenges. An understanding of these complex relationships can result in more balanced and effectively targeted policy.

# We've only just started...

Measuring societies wellbeing is no easy feat, particularly at a regional scale. This is SGS' first edition of the CRWI, and the first regional scale wellbeing index developed in Australia. There were challenges, choices and data limitations that arose along the way.

SGS want to measure what matters. We are committed to the ongoing refinement and update the index on an annual basis and are looking for feedback, collaborators, and case studies of its practical use. If you have ideas or are interested collaborating with us, please get in contact.

One of the strengths of GDP, and why it's endured as the core measure of progress, is its simplicity and comparability across regions. When developing the CRWI, we wanted to balance exposing a more nuanced understanding of progress and wellbeing with a data driven measure that was both simple and comparable across any region in all of Australia.

This approach created a range of challenges and limitations for our first edition. These will be improved for future releases:

- **Refining the data.** We experienced a range of data availability challenges, particularly for Environmental, Wealth, Health and Equality dimensions. We want to continue to investigate new sources and refine data metrics. We also want to advocate to government and data custodians to openly share key datasets and establish consistent definitions and formats.
- **Refining the framework.** We will continue to refine the composition of the CRWI, having regard to additional data inputs and the issues that matter the most to society. For example, future editions may consider dimensions such as crime and safety (including prevalence of domestic violence), regional differentiation in access to public services (e.g. education and health care), and additional environmental factors (such as air quality).
- **Linking Subjective with the Objective.** The CRWI is an objective (i.e. data indicator led) measure of Wellbeing. We want to compare and refine it against subjective (i.e. survey or personal experience led) measures to understand how the data indicators reflect people's lived experiences  For example, the longstanding Australian Unity Wellbeing Index that focuses on seven domains of wellbeing to build individual picture of life satisfaction, as well as the Australian Institute of Health and Welfare's indicator.
- **Ensure it's a useful tool for policy decision making.** SGS wants to promote a cultural shift among all levels of government that considers the importance of wellbeing in all policy decisions. The Australian Government was particularly active in the early years of wellbeing thought leadership, releasing the 'Measures of Australia's Progress' in 2002 and the Australian Treasury's Well-being Framework in 2004. The Commonwealth also led indicators across the performance of cities. We also hope to inform, over the longer term, best practice program evaluation, such that wellbeing is considered alongside the economic value of policy initiatives and investment decisions.

# Part B: State and Cities Profiles

# State and Territory Profiles

The following section profiles each state and territory, highlight key trends and drivers from the SGS CRWI.

| | Economic Overview (GRP $m and 3yr average annual growth) | | | | Wellbeing Overview | | | |
|---|---|---|---|---|---|---|---|---|
| | **State** | **Capital City** | **Rest of State** | **Summary** | **Capital City** | **Rest of State** | **Highest Wellbeing levels** | **Lowest Wellbeing Levels** |
| NSW | $609.9 (1.3%) | $452.8 (1.1%) | $157.2 (1.9%) | Buoyed by regional recovery and concentrated economic growth in the professional services and agricultural sectors | 5.6 | 4.9 | Warringah, North Sydney, and Hills District | Broken Hill, Bourke, Cobar and Kempsey |
| VIC | $467.0 (1.9%) | $371.1 (1.3%) | $95.9 (4.4%) | Strong recovery across main sectors, with Regional Victoria leading the way | 5.4 | 4.9 | Port Phillip, Boroondara, and Yara | Maryborough–Pyrenees Loddon–Elmore and Shepparton |
| Qld | $359.8 (2.2%) | $182.6 (2.1%) | $177.2 (2.4%) | Strong agricultural production and sustained resilience of the tourism sectors | 4.8 | 4.4 | inner Brisbane | Caboolture, Gympie, the Far North, Charter Towers, Browns Plain and Beaudesert |
| SA | $115.5 (3.0%) | $87.3 (2.7%) | $28.1 (3.8%) | Construction sector resilience and strong agricultural growth | 4.9 | 4.3 | Central and Hills | Outback – North and East, Playford and Salisbury |
| WA | $365.0 (2.6%) | $161.5 (3.9%) | $203.6 (1.6%) | Growth supported by as strong construction sector and net interstate migration | 5.2 | 4.5 | Cottesloe – Claremont, Fremantle, and Perth City | Kimberley region, Mid West, and Wheat Belt |
| Tas | $25.1 (2.6%) | - | - | Momentum has slowed but the state remains in a strong position | 5.2 | 4.6 | Hobart – South and West, and Hobart Inner | Brighton and Hobart – North West, Burnie – Ulverstone and Devonport |
| NT | $34.5 (3.3%) | - | - | Mining and manufacturing growth | 4.9 | 3.6 | Greater Darwin | Rest of NT |
| ACT | $43.3 (3.9%) | - | - | A short slowdown but fundamentals remain strong | 6.3 | | South Canberra and Gungahlin | Canberra East |

# New South Wales

# Buoyed by regional recovery and concentrated economic growth in the professional services and agricultural sectors.

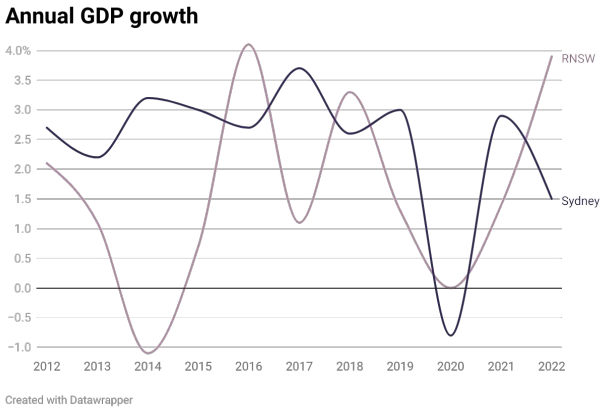
Lockdowns across NSW in response to Delta and Omicron variants led to a patchy recovery in the state. Restrictions on mobility and household consumption in the first quarters of 2021-22 financial year delayed the recovery until the end of this period. With the easing of restrictions allowing the release of pent-up demand, GRP increased by 1.8 per cent.

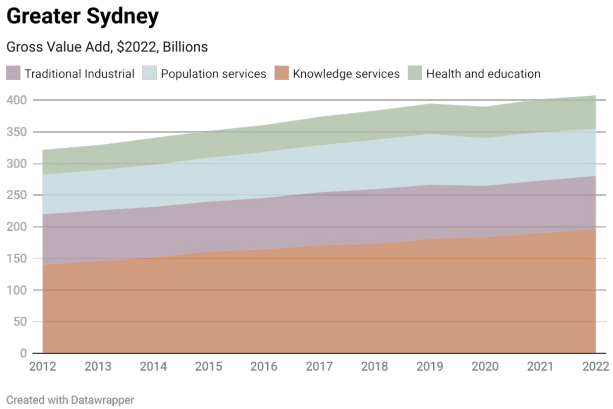
Sydney faced stricter lockdowns in late 2021 than Regional NSW. As a result, Sydney's GRP grew 1.5 per cent during this period. Retail and hospitality sectors struggled with a decrease of 7.5 per cent from the prior year, due to lagging visitor numbers.

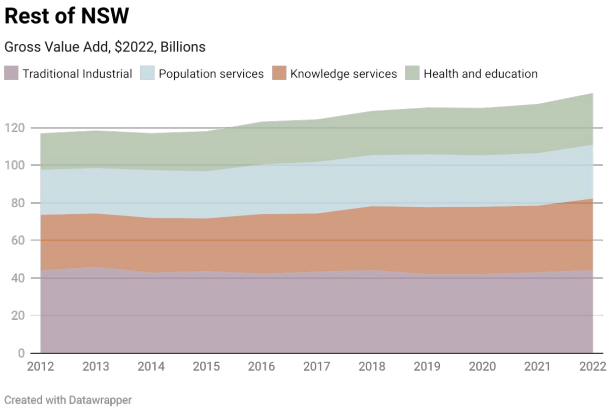
The main drivers of Sydney's GRP were Professional services (+6.2 per cent) and Health services (+2.2 per cent). Professional services rose with increased demand for consulting, digital and engineering services.

Construction activity contracted (-2.3 per cent) in Sydney due to restrictions in the residential building sector and construction demand from regional NSW. Overall, construction output in the state grew marginally despite these challenges as well as material and labour shortages in the sector.

Regional NSW grew 3.9 per cent in 2021-22. Major growth drivers were agriculture production (+19 per cent), driven by strong cereal and grain harvests and other rural goods, helping offset the adverse impacts of floods on vegetable growing, and health care services (+8.9 per cent). The increase in health services was partially due to the COVID-19 response and vaccine rollout.



The areas with the highest levels of wellbeing in NSW were within the Greater Sydney area, particularly in the north of the city such as the Warringah, North Sydney, and Hills District areas.

The areas will the lowest levels of wellbeing in NSW were in the far west of the state, including Broken Hill, Bourke, and Cobar, as well as some spots along the north coast, such as the Kempsey region.

A large distinction exists between Greater Sydney and the Rest of NSW in the Health sub-index. The average life expectancy for the 2.8 million residents outside the Capital City is 81.5 years, compared to 84.6 years for the 5.3 million that reside within Greater Sydney. Residents in the Rest of NSW area are also more likely to have two or more chronic illnesses.

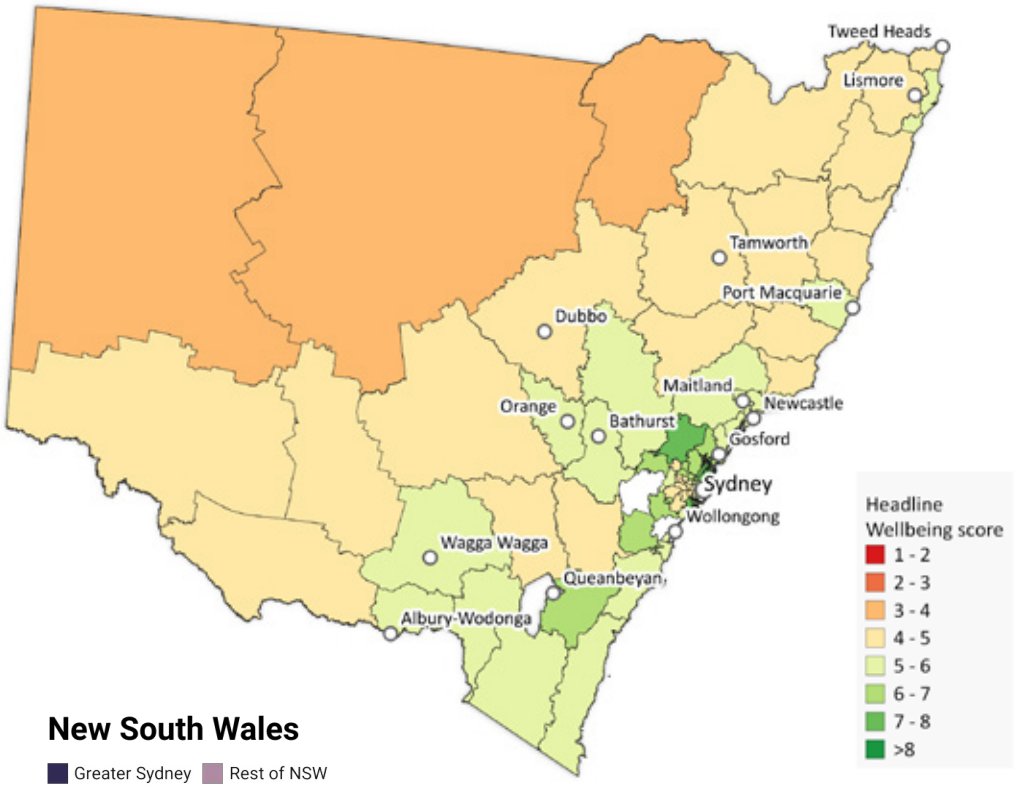
A significant difference between Capital City and Rest of NSW is also found in the Income & Wealth sub- index. Average household incomes were over a third higher in Greater Sydney, and house values (which are households' main store of wealth) were also over a third higher, although a lower share owned their property outright.

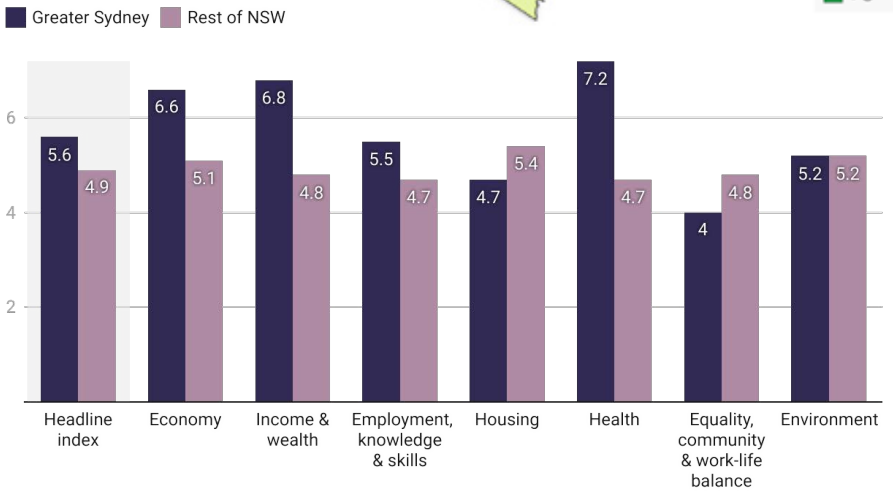
A smaller distinction is observed between the Capital City and Rest of NSW region in the Employment, Knowledge and Skills sub-index. On average, Greater Sydney had slightly higher education and participation rates, but a similar unemployment rate. The overall result masks the fact that the 5 lowest-performing regions were in Western Sydney, which highlights the disparity in outcomes within Greater Sydney.

On average, the Rest of NSW performed better than Greater Sydney in the Housing sub-index. This is largely due to Greater Sydney's higher rates of homelessness, overcrowding, and lower rental affordability.

Greater Sydney and Rest of NSW scored similarly in the Economy, Equality, Community & Work-life Balance, and Environment sub-indices.

See the interactive dashboard for a detailed breakdown.




Source: SGS Economics & Planning • Created with Datawrapper

# Victoria

# Strong recovery across main sectors, with Regional Victoria leading the way.

Victoria recorded an increase in GRP of 5.6 per cent in 2021-22, the strongest of any state and territory and a rebound from the declines incurred from the longest pandemic lockdowns in the country. The increase follows a fall of 0.3 per cent in 2020-21 and small rise of 0.1 per cent in 2019-20 when economic activity was constrained by pandemic containment measures. Industries leading the recovery were Construction (+7.6 per cent), Health Care and Social Assistance (+6.6 per cent) and Professional services (+5.9 per cent).

Melbourne GRP grew 5.4 per cent in 2021-22 financial year. Construction activity rose across both residential and non-residential construction with strong demand from both private and public sectors. Dwelling investment was a major driver as the construction industry worked through its backlogged pipeline from the previous year.

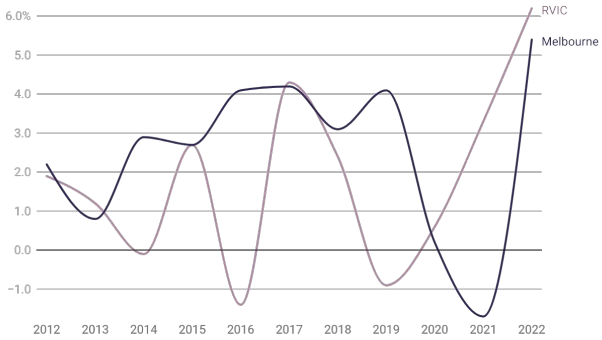
Health Care and Social Assistance continued to grow in Melbourne as output increased in response to COVID-19 challenges. The Delta and Omicron waves saw increased hospitalisations, testing programs and the vaccine rollout, which drove public and private health services.

Transport Services rose in response to the removal of lockdowns and travel restrictions on Victorian households and business. Post-lockdown returns to the office and recreation increased public transport and toll road usage.

Strong growth was recorded in Retail Trade (8.8 per cent), Accommodation and Food Services (10.6 per cent) and Arts and Recreation Services (15.7 per cent) in Melbourne and

Regional Victoria, as households hit the shops, the pub, the footy and the theatre to celebrate the end of lockdowns. Regional Victoria grew 6.2 per cent with agriculture and construction output supporting the region's recovery.

**Annual GDP growth**

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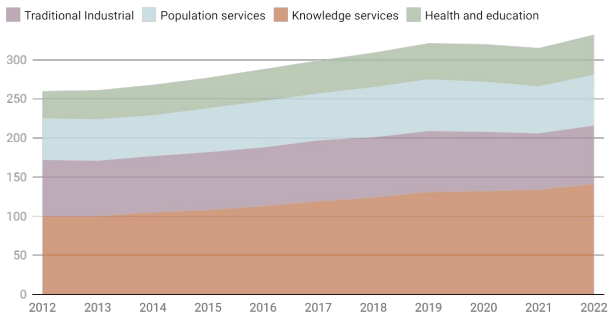
**Greater Melbourne**

Gross Value Add, $2022, Billions

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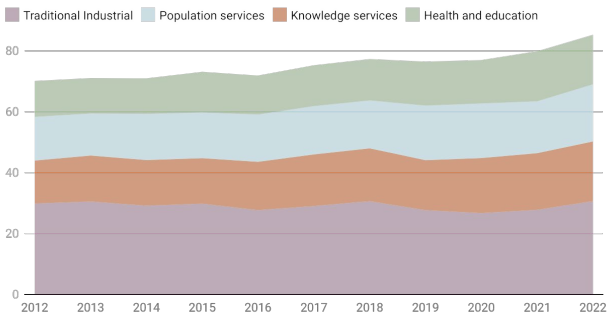
**Rest of Vic.**

Gross Value Add, $2022, Billions

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Overall, the regions of Victoria with the highest wellbeing were in Greater Melbourne, and within Greater Melbourne, the highest scoring regions were in the inner city (Port Phillip, Boroondara, and Yarra) and Bayside.

The areas with the lowest wellbeing were inland, such as Maryborough, Pyrenees Loddon, Elmore and Shepparton regions. A significant difference between Greater Melbourne and Rest of Victoria is also found in the Income and Wealth sub- index. Average household incomes were over a third higher in Greater Melbourne, and house values (which are households' main store of wealth) were also over a third higher, however a lower share owned their property outright.

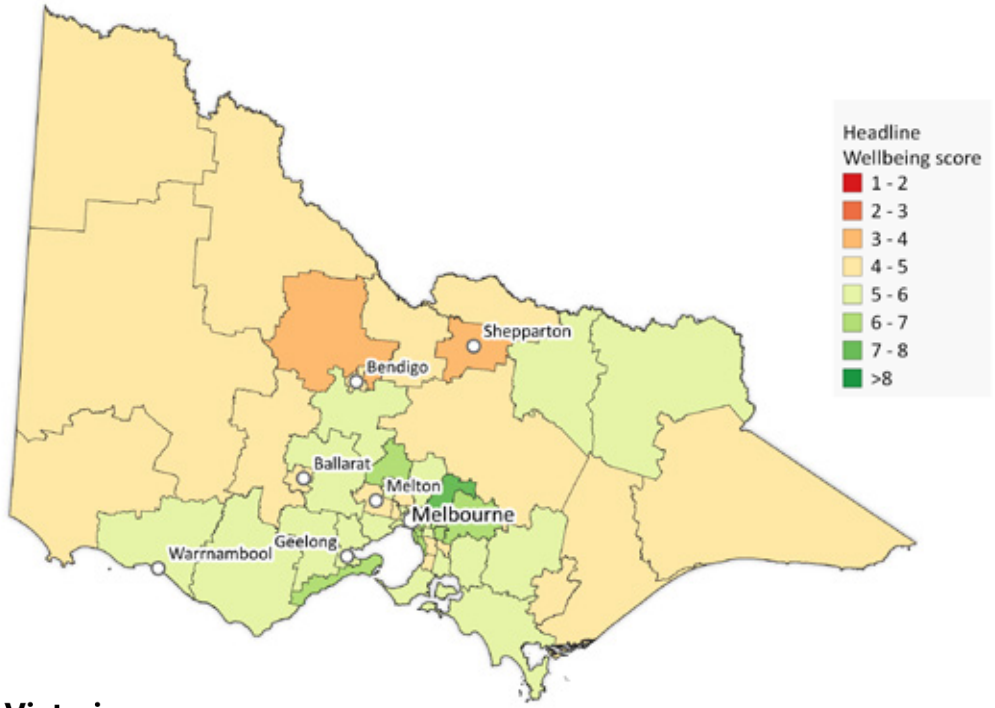
A smaller distinction is observed between the Capital City and Rest of Victoria region in the Employment, Knowledge and Skills sub- index. On average, Greater Melbourne had a participation rate five percentage points higher than the Rest of Victoria and higher rates of education, although the unemployment rate was similar across both the capital city and regional areas. The overall result masks the fact that many of the lowest-performing regions were on the outskirts of Melbourne, highlighting the disparity in outcomes within Greater Melbourne.

Like NSW, a large distinction is observed between Greater Melbourne and the Rest of Victoria in the Health sub-index. The average life expectancy for the 1.6 million residents that live outside the capital city is 81.5, compared to 84 for the 5.0 million that reside within Greater Melbourne. People living in regional areas are also more likely to have two or more chronic illnesses.

Like NSW, the Rest of Victoria performed better than the Greater Melbourne in the Housing sub-index. Greater Melbourne had higher rates of homelessness and overcrowding, and lower rental affordability.

A similar score in the Equality, Community & Work-life balance and Environment sub-indices was observed between Greater Melbourne and Rest of Victoria.

See the interactive dashboard for a detailed breakdown.




## Victoria


Source: SGS Economics & Planning • Created with Datawrapper


Queensland

# Strong agricultural production and sustained resilience of the tourism sectors.

The Sunshine State's GRP grew 4.4 per cent, following growth of 2.9 per cent in 2020-21 financial year. Compared to other States and Territories, Queensland experienced fewer disruptions from COVID-19 with no prolonged lockdowns.

Brisbane GRP continued to grow (+4.8 per cent) in this period as interstate migration boosted economic activity. Major drivers of growth in Queensland's capital were Construction (+5.9 per cent), Transport (+9.9 per cent) and Professional services (4.7 per cent).

Construction output remains above pre-pandemic levels despite materials and labour shortages, particularly due to repair work of flood affected areas.

Health care services grew strongly in Brisbane (6.3 per cent) and it is now a major industry in the city's economy (10 per cent of Brisbane's GRP).

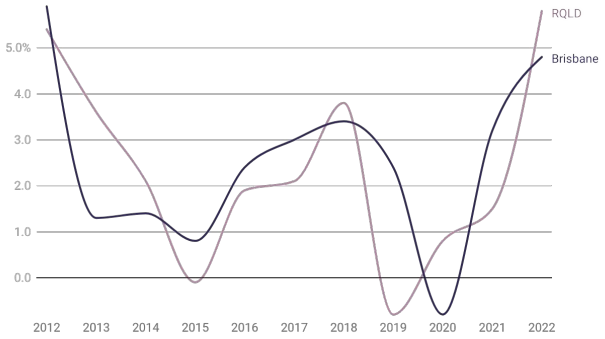
Tourism related services have recovered to pre- pandemic levels, although they slowed in the last year. Transport services continue below pre-pandemic levels but have shown a strong rebound as domestic and international tourism continue to accelerate.

High levels of business investment drove Professional Services growth in Queensland with increased demand for engineering, consulting and software services.

Regional Queensland outperformed Greater Brisbane, growing 5.8 per cent. Strong agricultural production across livestock products, cotton and grains was helped by favourable weather conditions and support high levels of rural goods exports from Queensland in 2021-22. The impacts from floods in February and March 2022 were localised and did not significantly affect overall production.

Mining output grew marginally (+4.1 per cent) in Regional Queensland. The outlook for the industry remains positive as firms replace existing capital and expand capacity. Higher commodity prices, particularly for gas, will support this expenditure.

**Annual GDP growth**

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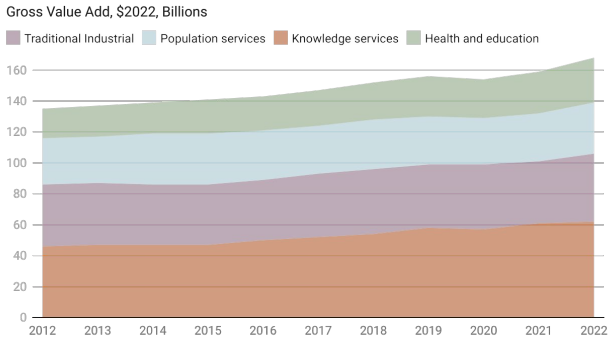
**Greater Brisbane**

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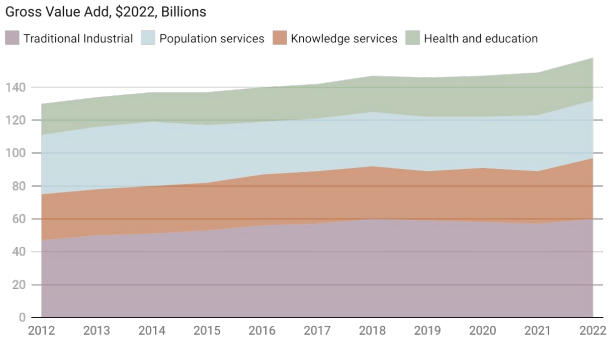
**Rest of Qld.**

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Overall, the best-performing regions in Queensland were in Greater Brisbane, and within the capital city, the highest scoring regions were in inner Brisbane.

The lowest performing parts of Queensland were in the inland and North, such as Caboolture, Gympie, the Far North & Charter Towers. However, some low performing regions were within Greater Brisbane, such as Browns Plains and Beaudesert.

A gap is observed between Greater Brisbane and the Rest of Queensland in the Health sub- index, although to a lesser extent than in NSW and Victoria. For the 2.6 million residents that live outside the capital city average life expectancy is an age of 82.4 years, compared to an age of 83.5 for the 2.6 million that reside within Greater Brisbane.

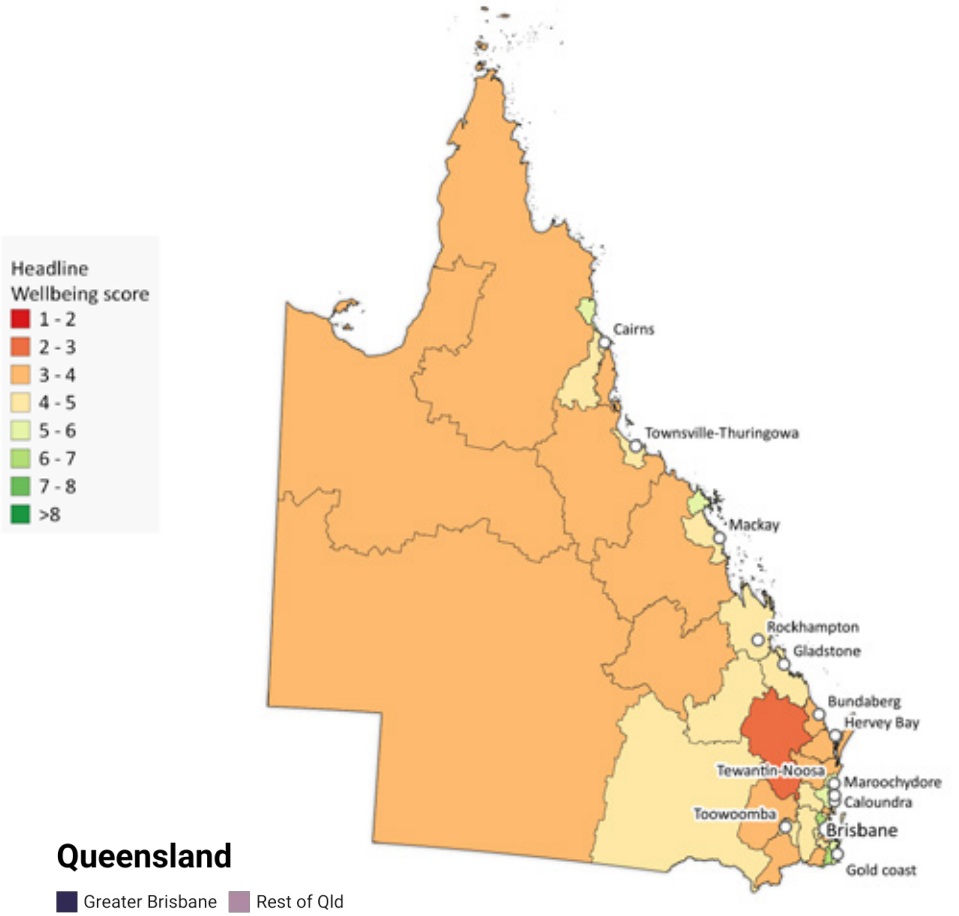
The Income and Wealth sub- index also diverges. Average household incomes were over a fifth higher in Greater Brisbane, and house values were also over a fifth higher, however a lower share owned their property outright.

Greater Brisbane was ranked higher than Rest of Queensland in the Employment, Knowledge and Skills sub-index. On average, Greater Brisbane had slightly higher education and participation rates, but a similar unemployment rate.

Unlike Sydney and Melbourne, Greater Brisbane performed better than the Rest of Queensland region in the Housing sub-index. Greater Brisbane had lower rates of homelessness and overcrowding and a similar level of rental affordability to the Rest of Queensland.

A similar score of Equality, Community & Work-life Balance sub-index was observed between Greater Brisbane and Rest of Queensland, while the Rest of Queensland performed slightly better in the environment.

See the interactive dashboard for a detailed breakdown.




Source: SGS Economics & Planning • Created with Datawrapper

# South Australia

# Construction sector resilience and strong agricultural growth.

South Australia's GRP increased by 5.1 per cent in 2022, following a rise of 4.7 per cent in 2021. The increase was driven by Agriculture (+26 per cent), Construction (9.8 per cent) and Manufacturing industries (10 per cent).

Adelaide's GRP grew by 4.7 per cent during this financial year. Health Care and Social Assistance is the largest industry in South Australia's capital (6per cent). The sector grew 6.1 per cent due to COVID-19 vaccine rollout and the NDIS program.

Construction in Adelaide has benefitted from a strong pipeline of work stemming from the Home Builder program with less acute supply shortages impacting the state.

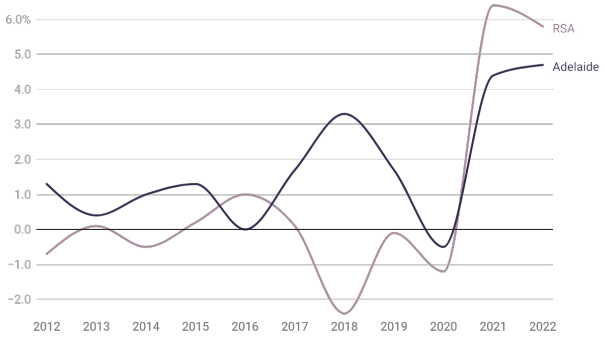
The public sector remains a significant direct and indirect consumer, with several defence programs in Adelaide and the Space agency, mitigating the softer economic performance in the private business services sector.

Regional SA grew 5.8 per cent outperforming Greater Adelaide. Strong construction output was seen in non-dwelling construction, driven by new engineering construction in the mining and utilities industries.

Agriculture output rose 26.2 per cent in the regions, following a rise of 26.3 per cent in 2020-21. The increases in the past two years reflect the rebound from three consecutive years of falls. Favourable weather conditions once again resulted in another strong grain harvest.

Hospitality and tourism related services have fallen from high growth levels seen in the previous year, as the return of international travel did not make up for the loss of domestic tourism during  interstate lockdowns in late 2021.

**Annual GDP growth**

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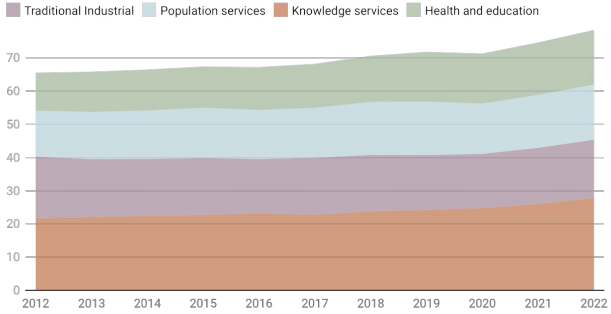
**Greater Adelaide**

Gross Value Add, $2022, Billions

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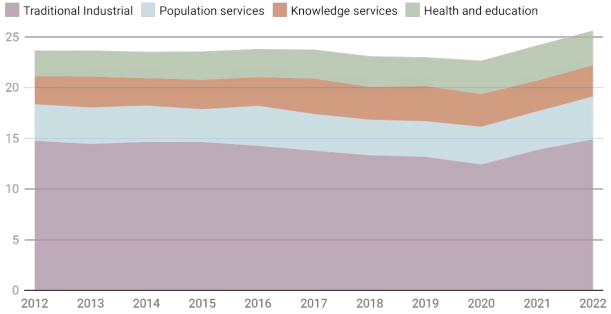
**Rest of SA**

Gross Value Add, $2022, Billions

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The best-performing regions in South Australia were in Greater Adelaide, particularly the Central and Hills area.

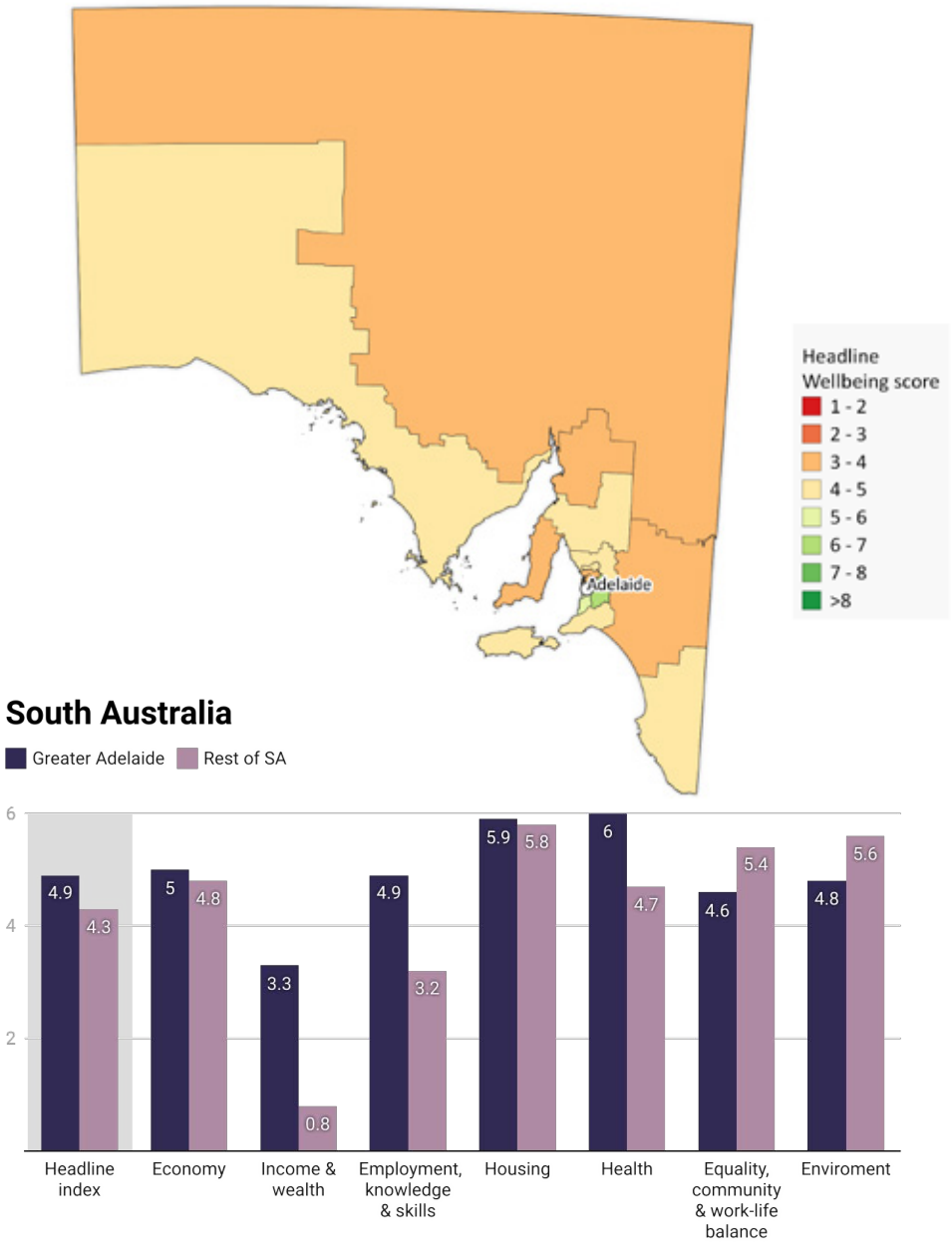
The lowest performing regions were the Outback – North and East, as well as some parts of Adelaide North, such as Playford and Salisbury.

A notable gap exists between Greater Adelaide and the Rest of SA in the Income and Wealth sub-index. Average household incomes were over a third higher in Greater Adelaide than the Rest of SA, and house values were also about 50 per cent higher, however a lower share owned their property outright. Across both the Capital City area and regions, South Australia scored lower than other states in Income and Wealth, with Rest of SA the lowest performing region in Australia.

As with other states, a gap exists between Greater Adelaide and the Rest of SA in the Health sub-index. The average life expectancy is higher in Greater Adelaide at 83.8, compared to 82 for regional South Australia.

Rest of South Australia ranks highly in the environment index, much higher than Adelaide, due to a high share of land area dedicated to national parks, reserves or protected land including the Nullabor, Yellabinna, Munga-Thirri – Simpson Desert and Kati Thanda – Lake Eyre. Unlike Sydney and Melbourne, Greater Adelaide performed better than the Rest of SA region in the Housing sub- index.

See the interactive dashboard for a detailed breakdown.




Source: SGS Economics & Planning • Created with Datawrapper

# Western Australia

# Growth supported by a strong construction sector and net interstate migration.

Western Australia GRP grew 3.1 per cent following a rise of 3.3 per cent in 2020-21. Agriculture (+30.3 per cent) and Construction (+9.6 per cent) were the major drivers of growth in 2022.

Greater Perth GRP grew 7.3 per cent, a level of growth not seen since the mining boom in 2012. Health care services continues to expand in Perth with an average annual growth rate of 6.7 per cent. The main drivers of growth in the capital were Professional services (+8.9 per cent) and Construction (+9.6 per cent).

The increase in construction output follows a rise of 5.2 per cent statewide in the previous year. Home building continued to increase in 2021-22 despite labour and supply shortages impacting the industry. Non-residential construction was supported by high levels of public investment in infrastructure and buildings and drove the increase in construction output.

Professional services and Administration and Support services increased in Perth (+8.9 per cent and +22 per cent respectively), due strong demand for consulting and employment services.

Mining GVA fell by 1.8 per cent in 2022. The fall was driven due to a fall in the quality adjusted volume of iron ore production. This was partly offset by increases in oil and gas production, capitalising on increased global demand and high prices for liquefied natural gas.

Due to the contraction in mining output, Regional WA GRP fell by 0.3 per cent. Its high concentration of mining activity (mining represent 80 per cent of economic output in the region) exposes the regional economy to some industry volatility.

**Annual GDP growth**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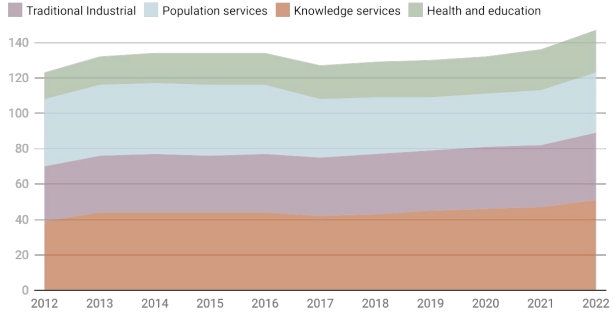
**Greater Perth**

Gross Value Add, $2022, Billions

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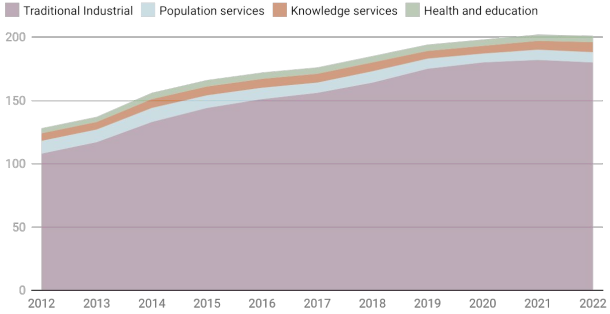
**Rest of WA**

Gross Value Add, $2022, Billions

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Overall, the best-performing regions in Western Australia were in Greater Perth, particularly Cottesloe – Claremont, Fremantle, and Perth City.

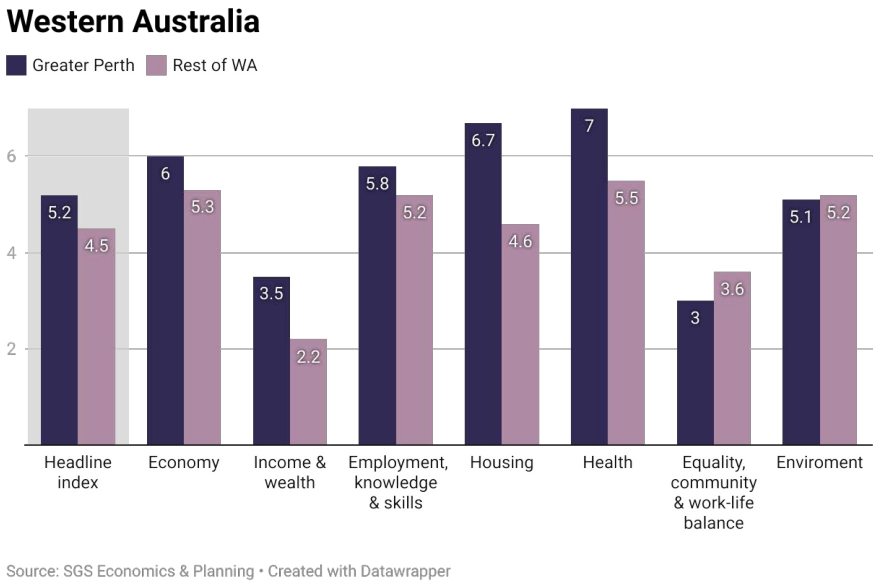
The lowest performing regions were in outback Western Australia and the outer suburbs of Perth, such as Mid West, Wheat Belt North and Mandurah.

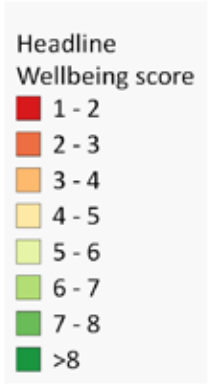
A sizable gap exists between the Greater Perth region and the Rest of WA in the Housing sub-index, with Greater Perth performing better than regional Western Australia. Greater Perth had lower rates of homelessness and overcrowding, and a similar level of rental affordability to the Rest of WA region.

As with other states, a sizable gap exists between Greater Perth and the Rest of WA in the Health sub- index. The average life expectancy for the 560,000 regional Western Australia residents is 81.2, compared to 84.5 for the 2.2 million within Greater Perth.

There is also a large disparity in the Income and Wealth sub-index between Greater Perth and Rest of WA. Like South Australia, Western Australia scored low on this sub-index across both the capital city and regional areas, compared to other states.

See the interactive dashboard for a detailed breakdown.




# Tasmania

# Momentum has slowed but the state remains in a strong position.

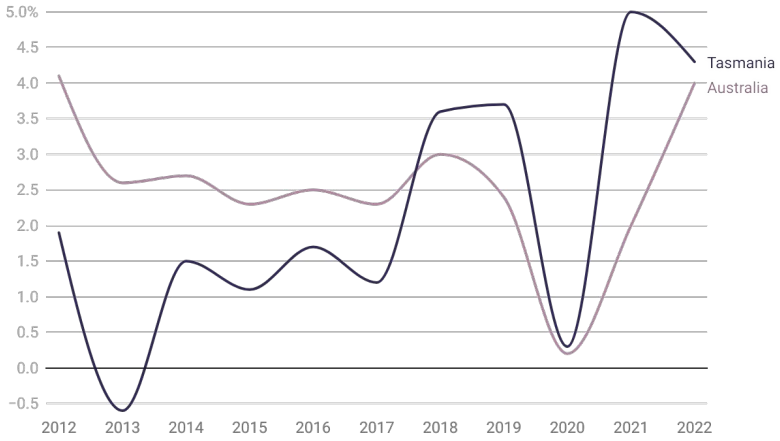
Tasmania's GRP grew 4.3 per cent following a rise of 5.1 per cent in 2020-21. Agriculture rose 15.9 per cent, representing 1.6 percentage points contribution of total Tasmanian GRP growth. Forestry, livestock, dairy products and other agriculture were the drivers of the increase.

Health Care and Social Assistance continued to display strong growth of 5.0 per cent due to increased demand for health care services in response to the pandemic.

Construction increased 5.2 per cent following subdued growth in the previous year. Construction activity increased in line with strong public investment in roads, education and health building as well as utilities. Public Administration and Safety showed modest growth relative to 2020 high levels.

Note: Capital city and rest of state GRP breakdown is not available for Tasmania as the state represents less than 5 per cent of Australia's economic output.

**Annual GDP growth**

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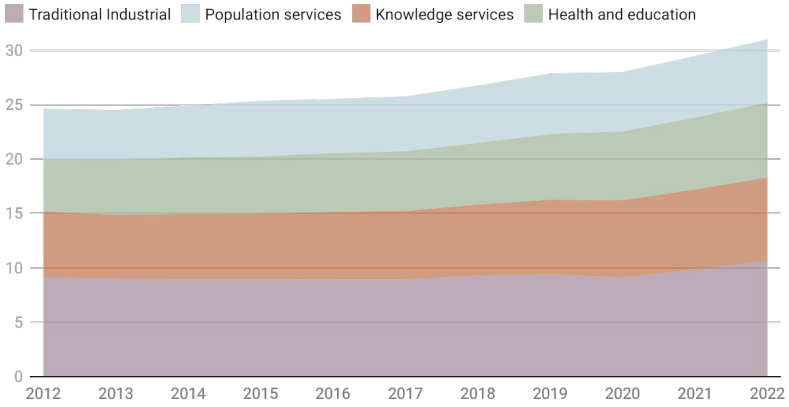
**Tasmania**

Gross Value Add, $2022, Billions

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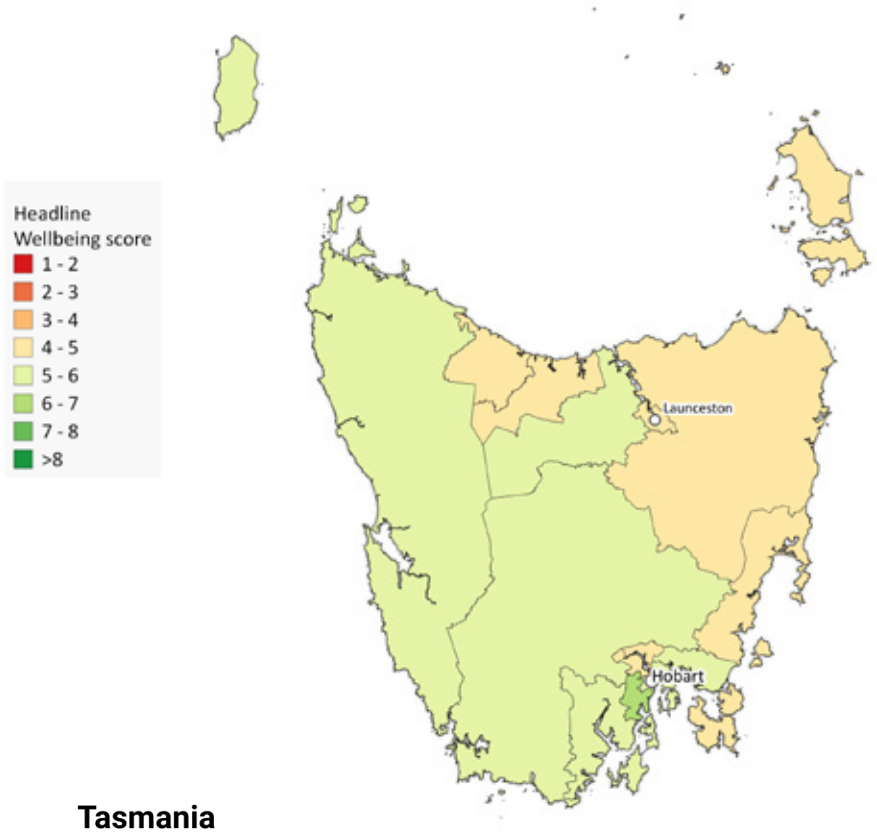
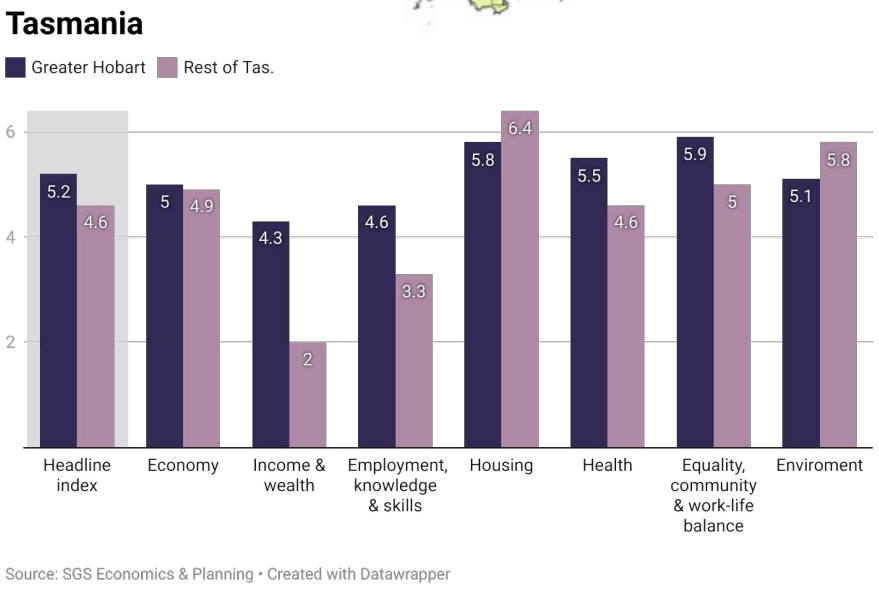
Overall, the best-performing regions in Tasmania were in Greater Hobart, particularly Hobart – South and West, and Hobart Inner. The lowest scoring regions were also in Hobart, namely Brighton and Hobart – North West. Outside of Hobart, Burnie – Ulverstone and Devonport were among the poorest performing regions.

Compared to other states, the disparity between the Greater Hobart and Rest of Tasmania region is less apparent. However, a notable gap is present in the Income & Wealth sub-index, with Greater Hobart recording higher household incomes and greater house values than regional Tasmania, although fewer own their home outright.

Health, education, and labour force participation are also higher in Greater Hobart, while the Rest of Tasmanian region rates higher in Housing and Environment. Greater Hobart records low rental affordability, the lowest of all Capital Cities, which contributes to a lower score in this index.

See the interactive dashboard for a detailed breakdown.




Source: SGS Economics & Planning • Created with Datawrapper

# Northern Territory

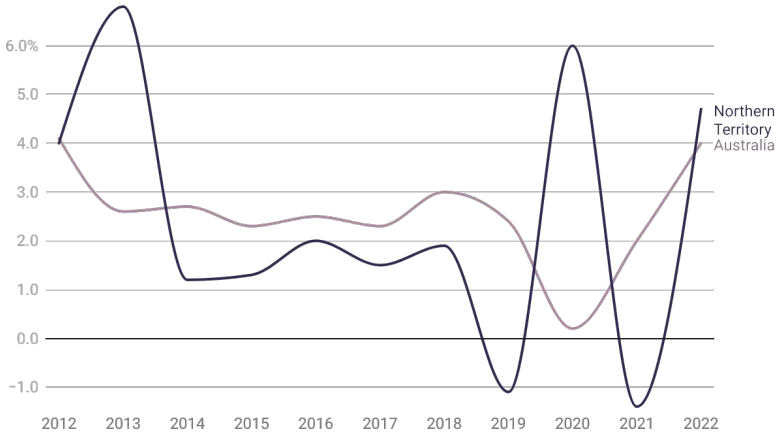
# Mining and manufacturing growth.

Northern Territory's GRP rose 4.7 per cent in 2021-22 following a fall of 1.4 per cent in the previous year. GRP growth was driven by a 13.4 per cent increase in mining output. Oil and gas extraction drove the increase in mining where production volumes increased in response to rising commodity prices. Manufacturing rose 12.6 per cent following a fall of 4.9 per cent in the previous year. Chemical product and Food product manufacturing both experienced strong rises, driving the increase. Health Care and Social Assistance (4.1 per cent) rose due to increased resourcing in response to managing COVID-19 outbreaks.

Partly offsetting the increase was hospitality services which fell 6.2 per cent as COVID-19 restrictions reduced demand for these services.

Note: Capital City and Rest of State GRP breakdown is not available for Northern Territory as the territory represents less than 5 per cent of Australia's economic output.

**Annual GDP growth**

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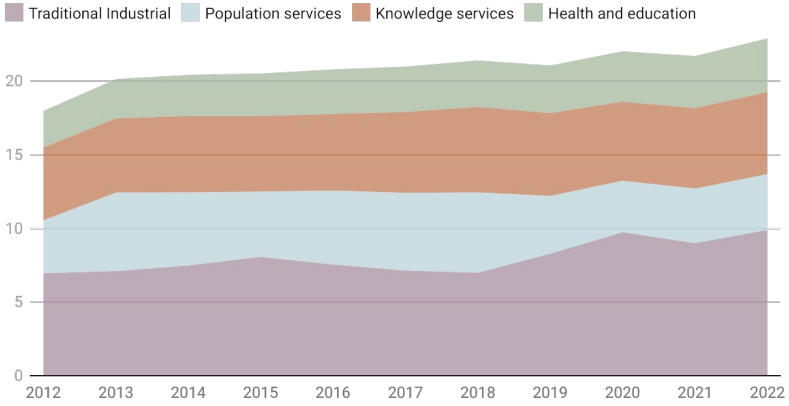
**Northern Territory**

Gross Value Add, $2022, Billions

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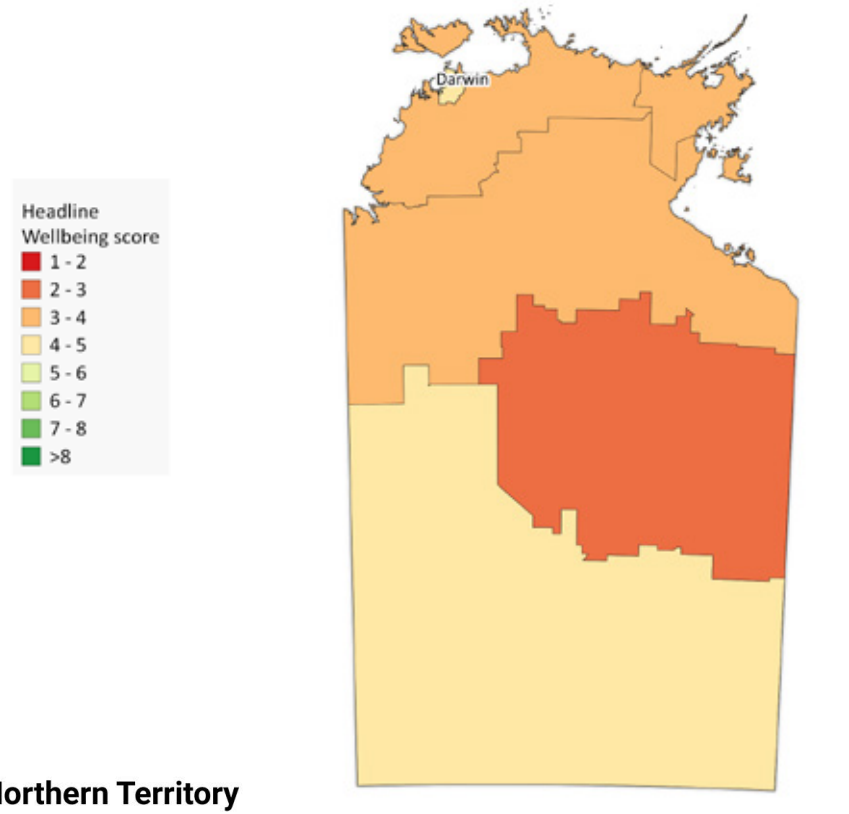
There is significant disparity between Greater Darwin and the Rest of NT across most sub-indices, but most notably in Employment, Knowledge and Skills.

Greater Darwin has among the highest rates of employment, participation, and educational attainment in Australia, leading to the second highest median household income (after the ACT). In contrast, regional Northern Territory is the lowest performing region for educational attainment, employment, and labour force participation.

Greater Darwin also performs notably better than the Rest of NT in the Health sub-index. The life expectancy of the 150,000 Darwin residents is 81.5, compared to 74.4 for the 100,000 that live in regional Northern Territory. This is the largest difference between a Capital City and its Rest of State region, with regional Northern Territory also recording the lowest life expectancy of all regions. The Northern Territory scores poorly in the Housing sub-index across both Greater Darwin and Rest of NT. High rates of homelessness and overcrowding outweigh a relatively affordable rental market in both regions.

Regional Northern Territory scores higher than Greater Darwin in the Environment sub- index, driven by the presence of several national parks and protected land. Thes Rest of NT region is ranked only slightly below Darwin in the Economy sub- index, largely due to strong mining outputs in regional areas.

See the interactive dashboard for a detailed breakdown.




Source: SGS Economics & Planning • Created with Datawrapper

# Australian Capital Territory

# A short slowdown by fundamentals remain strong.

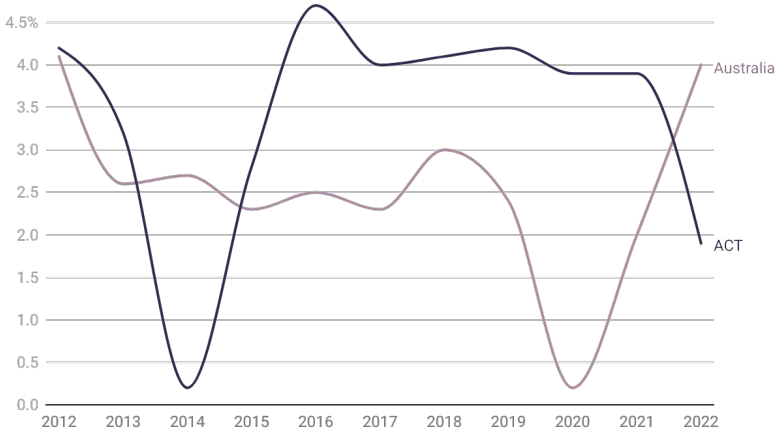
Australia's capital GRP increased by 2.0 per cent following a rise of 3.9 per cent in 2021-22 financial year. ACT avoided most restrictions in 2020 and 2021 but Delta and Omicron variants in late 2022 disrupted the ongoing growth.

Growth in ACT was driven by Professional services (7.0 per cent) and Health related services (5.6 per cent). Continued demand for digital, cyber security and consultancy services by the public sector, has been a major driver behind the increased output in the professional industry. Health care and social services rose as a result of the COVID-19 vaccine roll-out and overall management of the pandemic.

Economic activity in Retail and Public Administration and Safety both fell, by 8.8 per cent and 1.0 per cent respectively. The fall in retail was a consequence of the territory trading restrictions placed on business in late 2021. The fall in public sector was due to high levels of leave across the year and a reduction in the administration of COVID-19 measures by the federal government.

The ACT is yet to completely recover from the lockdowns experienced in 2021-22. ACT enjoys a structurally lower unemployment rate than the national average so this may correct relatively quickly.

**Annual GDP growth**

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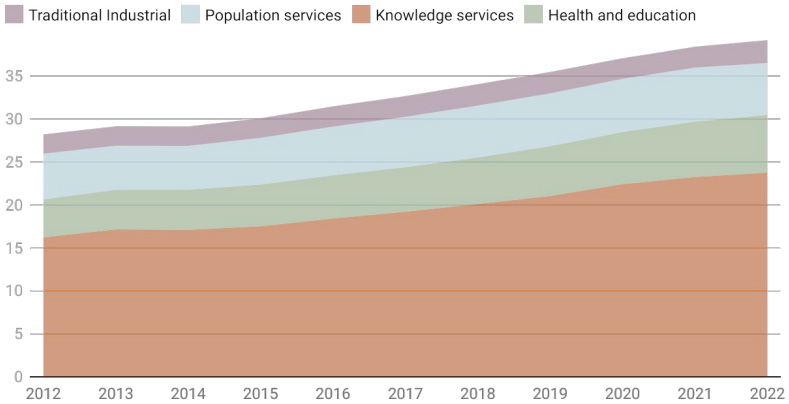
**Australian Capital Territory**

Gross Value Add, $2022, Billions

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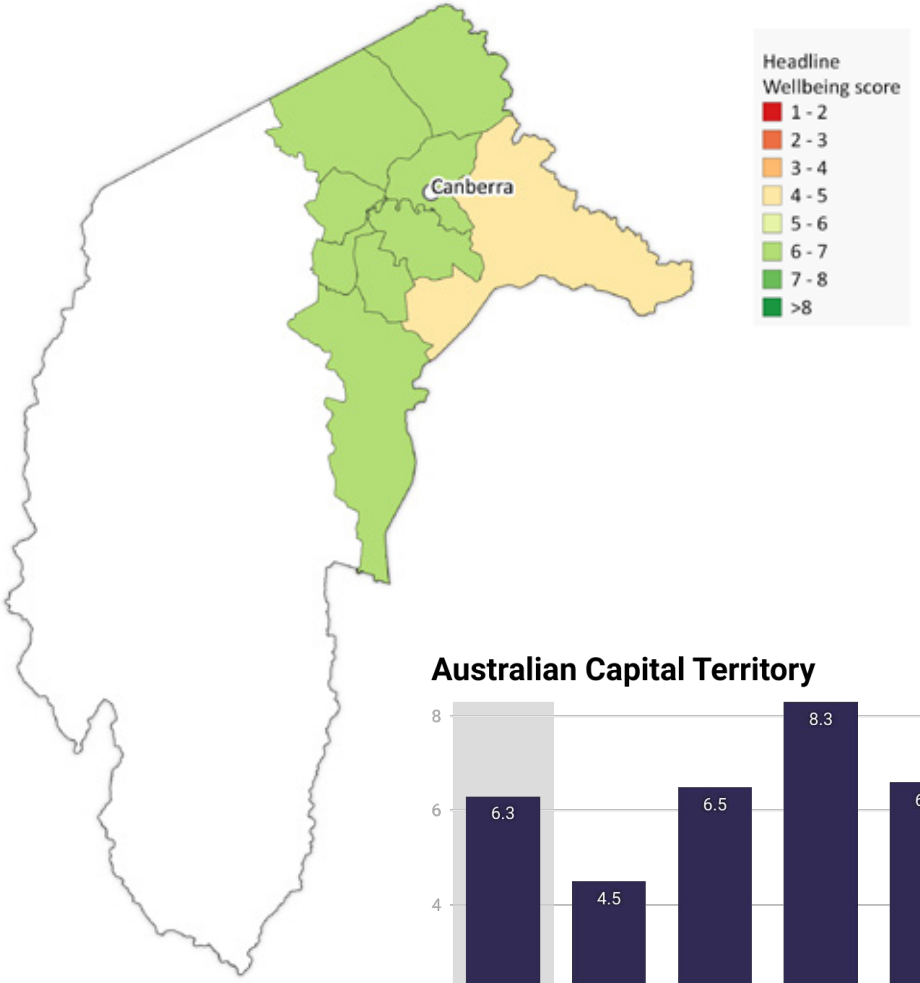
Overall, the ACT is the best performing region in Australia, scoring well across all wellbeing dimensions, particularly Employment, Knowledge and Skills sub-index.

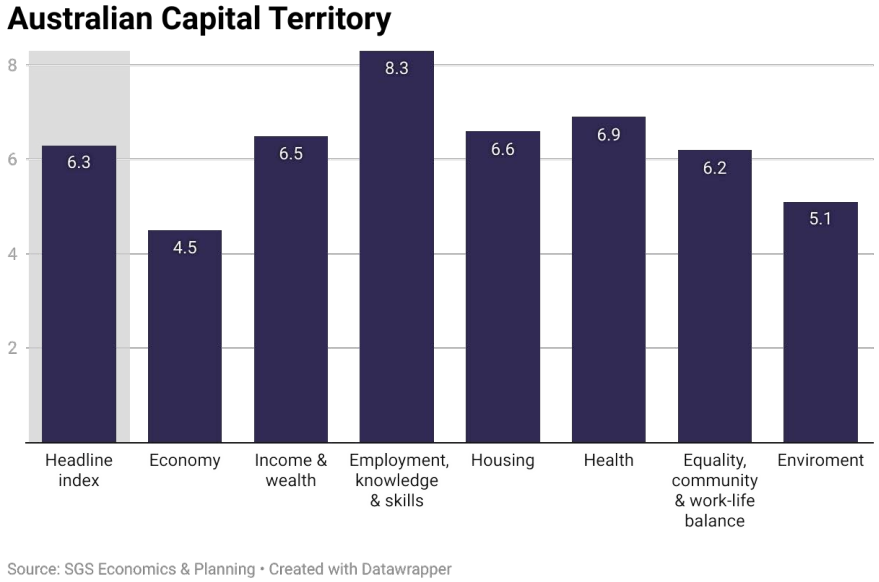
The ACT had the highest rate of educational attainment of all regions, as well as the highest median household income.

Of the indices, the ACT scored poorest in the Economy sub-index, due to lower, and less diversified, economic activity resulting from a higher-than-average proportion of public administration jobs in the area.

The best performing regions within the ACT were South Canberra and Gungahlin, while the lowest performing was Canberra East.

See the interactive dashboard for a detailed breakdown.



# Part C: Technical Appendix

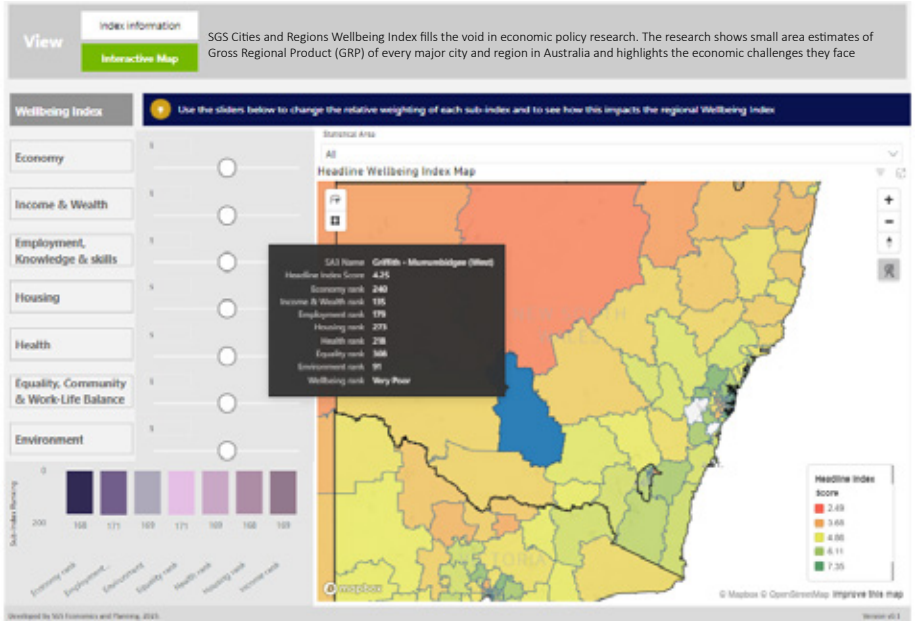
# Using the SGS Cities & Regions Wellbeing Index dashboard

## Overview

SGS's interactive dashboard allows you to assess wellbeing in your region and compare it with 334 other regions across Australia based on seven dimensions central to the quality of our lives.

The dashboard includes two views.

**Map View** – using the drop down or map users can explore the headline Wellbeing Index and seven Dimensions. You can also adjust Dimension weights and see the impact on the headline Index.

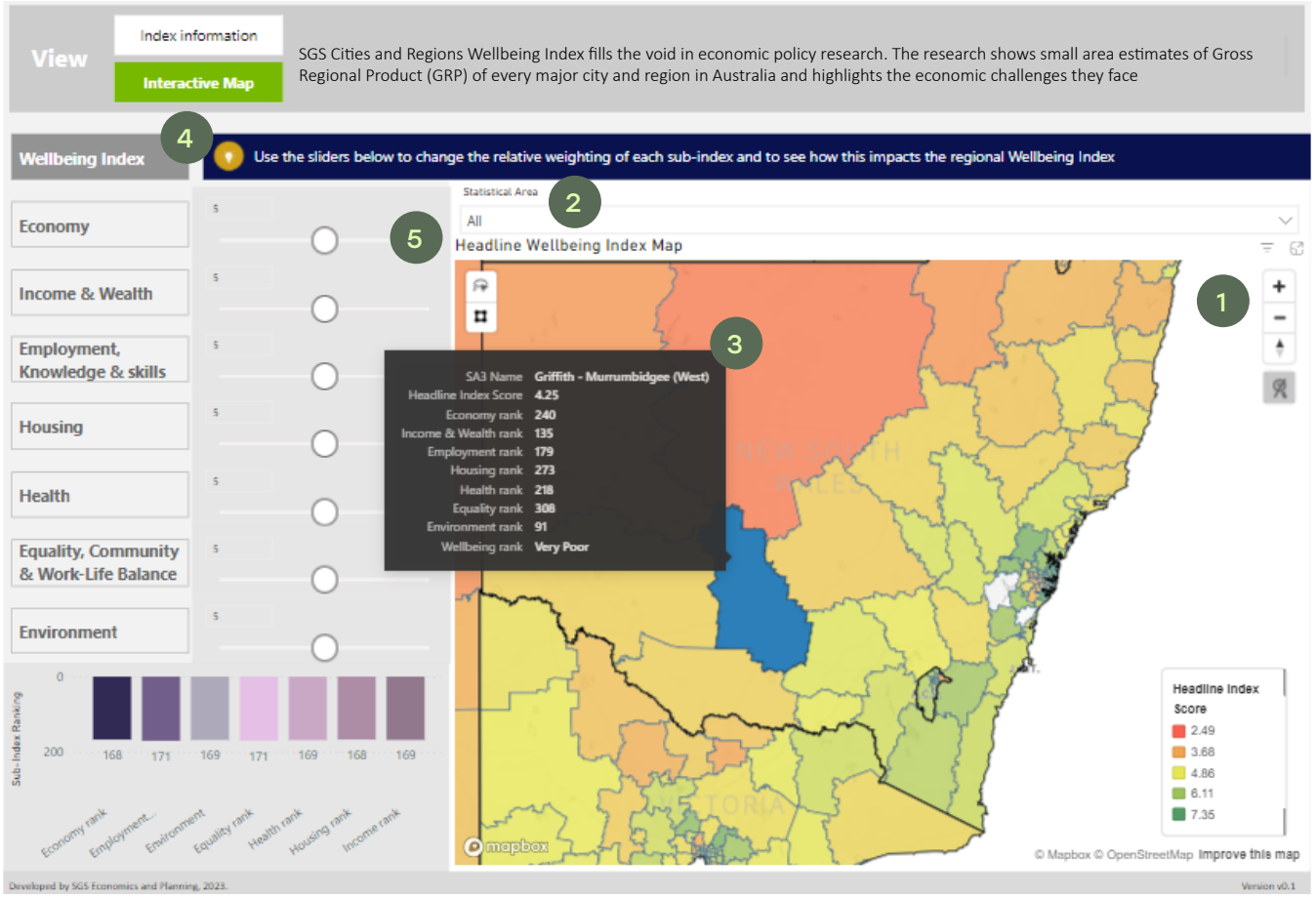



**Index Information** – provides a deep dive into the all the data and metrics used to create the Wellbeing Index. Find a region (SA3) and compare it to another across any of the seven Dimensions.

# Map View

In Map view you can:

1. Scroll and zoom around the map to find your location of choice
2. Use the drop down menu to jump straight to your location of choice
3. Hover over a location to see the Wellbeing Index and seven Dimensions
4. Click through the seven Wellbeing Dimensions to see them on the map
5. Adjust the weightings for the seven Dimensions to see how that impacts the headline wellbeing score.

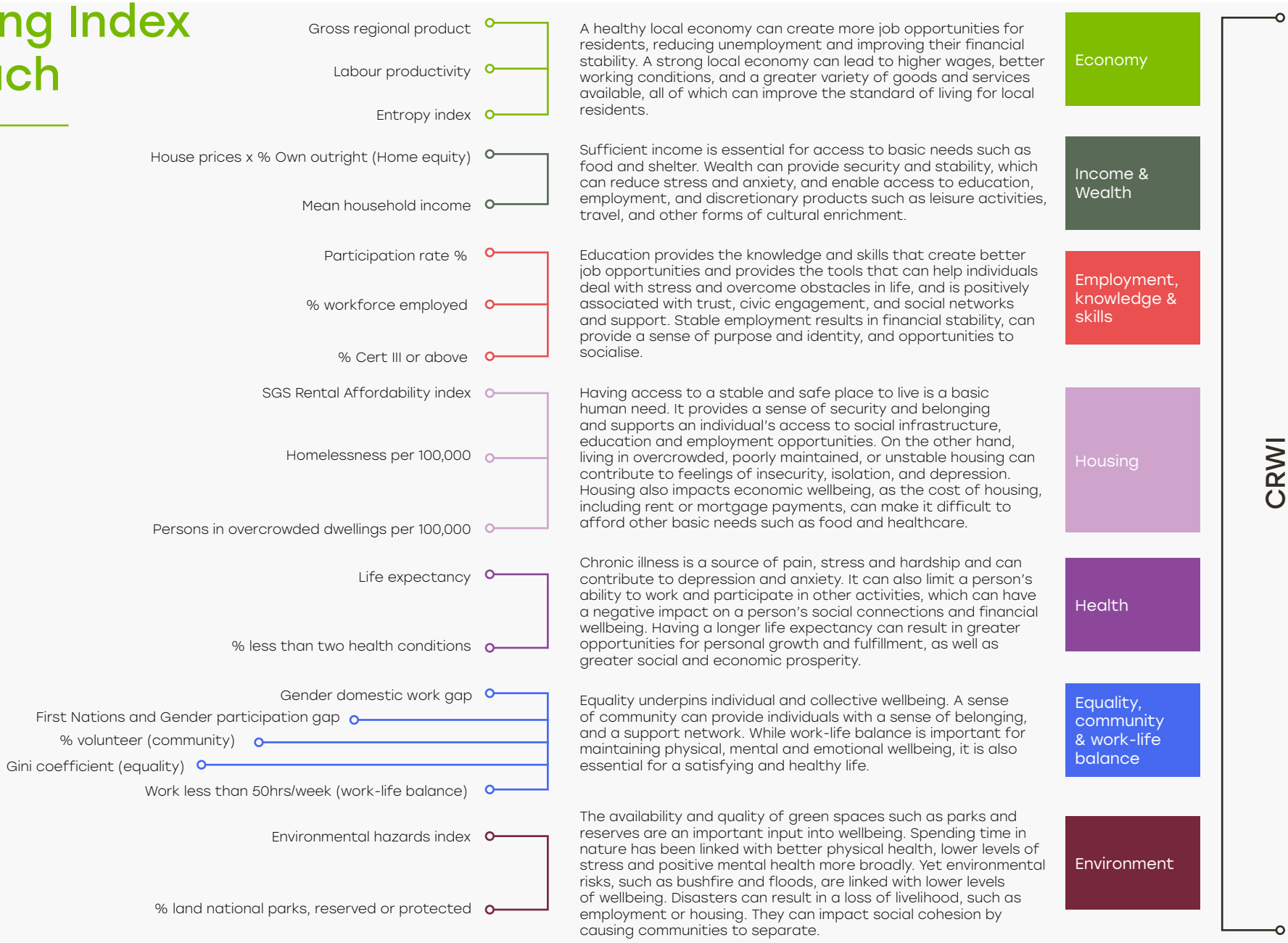


# Information View

In information view you can:

1. Use the drop down menu to jump straight to your location of choice. Then select a comparison region to compare with
2. Click through the seven Wellbeing Dimensions to see the data metrics and trends which make up each Index.

# Wellbeing Index Approach



| Category | Indicator | Description | Method | Source |
|---|---|---|---|---|
| Health | Life expectancy | Life expectancy refers to the average number of additional years a person of a given age and sex could be expected to live, assuming current age-sex specific death rates are experienced throughout their lifetime. | ABS life tables at the SA4 level are spatially allocated down to SA3 based on local demographics to determine average life expectancy | ABS Cat. No. 3302.0.55.001 |
| Health | % 1 or no health condition | Percentage of persons reporting at most one health condition and no selected long-term conditions (arthritis, asthma, cancer (including remission), dementia (including Alzheimer's), diabetes (excluding gestational diabetes), heart disease (including heart attack or angina), kidney disease, lung, condition (including COPD or emphysema), mental health condition (including depression or anxiety) and stroke). | Calculated as the number of people with one or no health condition divided by that total population of each SA3 | ABS Census 2021, place of usual residence |
| Employment, and skills | % cert III or higher | Percentage of person's with overall highest level of educational attainment, whether it be a certificate III or higher. | Calculated as the number of people with a postgraduate, graduate, bachelor, advanced diploma, or certificate III or IV divided by the total population of each SA3 | ABS Census 2021, place of usual residence |
| Employment, and skills | Employment | Persons aged 15 years and over employed as a percentage of the total labour force. Labour force constitutes persons employed and unemployed but looking for work. | Calculated as the number of people employed divided by the total labour force (i.e. people employed plus unemployed) of each SA3 | ABS Census 2021, place of usual residence |
| Employment, and skills | Participation | Persons aged 15 years and over employed and unemployed but looking for work as a percentage of the working age population. | Calculated as the number of people employed and unemployed divided by the population aged 15 and over of each SA3 | ABS Census 2021, place of usual residence |
| Income and wealth | Median household income | Households income where household members aged 15 years and over state their income. Incomes are collected in ranges in Census, medians are then calculated using information from the Survey of Income and Housing. | Sourced directly | ABS Census 2021, place of usual residence |
| Income and wealth | Owner occupier | Dwellings owned outright as a percentage of all dwellings. | Dwellings owned outright divided by total private dwellings of each SA3 | ABS Census 2021, place of enumeration |
| Income and wealth | House prices (thousands) | Annual median price for residential transfers. | Moving average of the quarterly median price for houses and attached dwellings. Then estimate the weighted sum by the moving average of the number of transfers made in the same period. | ABS Total Value of Dwellings 2021 |
| Income and wealth | House equity (thousands) | Value of properties owned outright. | Percentage of dwellings owned outright times the annual median price for residential transfers | ABS Total Value of Dwellings 2021 and ABS Census 2021, place of enumeration |

| | | | | |
|---|---|---|---|---|
| Equality | % volunteer | Percentage of persons providing voluntary work for an organisation or group. | Sourced directly | ABS Census 2021, place of usual residence |
| Equality | % pop Less than 50 hours of work per week | Percentage of persons working less than 50 hours a week. | Sourced directly | ABS Census 2021, place of usual residence |
| Equality | Gini coefficient of income | Indicates the degree of inequality among total incomes in a region. | Sourced directly | ABS Cat. No. 6524.0.55.002. |
| Equality | Male-female participation gap | Difference in labour force participation between males and females in a region. | As per participation indicator further split by gender. | ABS Census 2021, place of usual residence |
| Equality | First nations employment gap ratio | First Nations persons in employment as a percentage of the First Nation labour force relative to Non-indigenous persons in employment as a percentage of the Non-indigenous labour force in a region. | As per employment indictor further split by first nations status | ABS Census 2021, place of usual residence |
| Equality | Gender domestic work disparity | Ratio of total number of hours male persons spent in the week doing domestic work without pay relative to female persons. | Hours of domestic work for a male divided by hours of domestic work for a female. | ABS Census 2021, place of usual residence |
| Housing | Homelessness per 100,000 | Number of persons experiencing homelessness as defined by ABS per 100,000 residents. | All homeless persons divided by estimated resident population in 100,000 | Census of Population and Housing: Estimating homelessness, 2016 |
| Housing | Marginal housing per 100,000 | Number of persons experiencing marginal housing as defined by ABS per 100,000 residents. | All persons in marginal housing divided by estimated resident population in 100,000 | Census of Population and Housing: Estimating homelessness, 2016 |
| Housing | SGS rental affordability index | Indicator of rental affordability relative to household incomes. A score of 150 or more indicates that a person needs 25 per cent or less of their weekly income on rent (an affordable level). Below this threshold, rental stress can occur. | The RAI is calculated using the following equation, where 'qualifying income' refers to the household income required to pay rent where rent is equal to 30% of income. RAI = (Median income ⁄ Qualifying Income) x 100. We use a population weighted sum of the RAI postcode to estimate RAI SA3. | SGS Economics and Planning, 2022 |
| Environment | % land national park, reserve or protected | Percentage of total protected land areas in a region. Protected land areas refer to Indigenous protected land area, national parks, nature reserves and all other protected land areas. | Sourced directly | ABS Data by Region 2022 |
| Environment | Index of environmental hazards | A score derived from a region's historical exposure to a variety of natural hazards including bushfire, flooding, earthquake, and storm. | Insurance Council of Australia methodology | ICA iLead 2016 |

| | | | | |
|---|---|---|---|---|
| Economy | Economic diversity score | The Entropy index defines diversity as the same proportion of economic activity in each industry. If employment in a region were equally distributed among industries, the Entropy index would achieve its maximum value. On the other hand, if a region's employment was concentrated in a single industry, the value of the Entropy index would be zero, indicating a lack of industrial diversity. | $EI_j = -\sum_{i=1}^{19} x_{ij} ln(x_{ij})$<br>Where:<br>xi= the industry share of employment<br>i = the industry division<br>ln = the natural logarithm operator. | ABS Census 2021, place of work |
| Economy | GDP per total hours worked | Productivity describes the quantity of products that can be generated (output) from the resources (inputs) used in the production process. | | |
| Economy | GRP | Gross Regional Product. A measure for the production process whereby labour, capital, land, knowledge and other resources are combined for the provision of goods and services. | See further detail in following section. | |

# Method to estimating Gross Regional Product

### GRP estimation approach overview

There are three approaches to measuring GRP:

- **The Production Approach:** the sum of the Gross value added for each of the industries and taxes, less subsidies on products;
- **The Expenditure Approach:** measures final expenditure on goods and services; and
- **The Income Approach:** sum of income generated by all factors of production.

At the Australian level, the Production, Expenditure and Income approaches are averaged by the ABS to produce and estimate of GDP. However, at the State level, a lack of data on trade between the states results in the Expenditure and Income approaches being combined and averaged with the Production approach. The hybrid Expenditure and Income estimates of Gross State Product (GSP) have been published since the 1990s. The Production approach has only been estimated and published as part of the Australian National Accounts: State Accounts (Cat. No. 5220.0) since 2007.

In developing GRP estimates for each region, as defined by ABS Statistical Area 3 (SA3), the Production approach is used by SGS. This is used firstly because of the lack of data on interstate trade, and secondly because the data available to calculate the Production approach is more robust (and hence requires fewer assumptions to be made) than that available for the Expenditure or Income approaches. For each industry, wherever possible, the same data sources that have been used to produce industry gross value added at the state level are used to produce industry gross value added at the city level. Some of these data sources include:

- Agricultural Commodities: Small Area Data, Australia (Cat. No. 7125.0);
- Manufacturing Industry, Australia (Cat. No. 8221.0);
- Regional Population Growth, Australia (Cat. No. 3218.0);
- Household Expenditure Survey, Australia (Cat No. 6530.0);
- Education and Training Experience (Cat. No. 6278.0); and
- Labour Force, Australia, Detailed, Quarterly (Cat. No. 6291.0.55.003).

Via the use of the implicit price deflation technique, the Chain Volume Measures of the industry gross value added are converted into current prices. This method overcomes the non-additivity issue with the Chain volume measure and allows the aggregation of industry estimates of GVA to overall GDP. In order to maintain consistency with the wider National Accounts, the Production Approach estimate of city GDP is benchmarked to the state GDP.

For deriving labour productivity, the estimates of hours worked are taken from Information Paper: Implementing New Estimates of Hours Worked into the Australian National Accounts, 2006 (Cat. No. 5204.0.55.003) which provides the total hours worked within the economy for 2004-05. The index of total hours worked from the Australian System of National Accounts, 2018-19 (Cat. No. 5204.0) has been used to advance the 2004-05 estimate for the years between 2005-06 and the most recent year. This Australian total hours worked figure has then been allocated for each industry in each capital city and SA3 based on its share of total hours worked from the Labour Force, Australia, Detailed, Quarterly (Cat. No. 6291.0.55.003).

## Industry methods

The gross value added for each industry for Australia is derived in the annual supply and use tables using the double deflation technique. That is, subtracting estimates of intermediate input from estimates of output. Where possible the same data has been used in estimating State level industry gross value added.

The details of this estimation method are outlined in "Information paper: Gross State Product using the Production approach GSP(P)". In estimating the Capital City and SA3 level industry gross value added, where possible, the same data sources have been used. The following section provides a summary of the data sources used to estimate gross value added for each industry.

### Agriculture, forestry and fishing

*Method:*

Australian National Accounts: State Account (cat. no. 5220.0) provides a measure of Gross value added for the Agriculture, forestry & fishing industry in State. Data from the Agricultural Commodities: Small Area Data, Australia, 2006-07 (cat. no. 7225.0) provides information on the gross value of agricultural production within Capital City and Balance of the State.

The share of the gross value of agricultural production within Capital City is used to allocate the State Gross value added figure to Capital City for 2006-07. The Capital City share is altered in every other year using the hours worked from the Labour Force, Australia, Detailed, Quarterly (cat. no. 6291.0.55.003).

*Quality note:*

The most reliable estimate would be for 2006-07, with the estimates based on the labour force survey being a slightly lower quality. The 2006-07 share based on the Agricultural Commodities: Small Area Data, Australia publication is 8.5 per cent and the Labour Force, Australia, Detailed, Quarterly estimate is 8.3 per cent. This indicates that the labour force survey is a good proxy of economic activity in the Agriculture, forestry & fishing industry.

This method would be unlikely to capture head office operations of Agriculture, forestry & fishing firms located in Capital Cities. This would have a very small downward bias on the estimates. Due to the relatively small size of the industry in the Capital City (0.2 per cent in 2006-07), it would have little impact on the quality of Capital City's GDP.

### Mining

The gross value added per hour worked (labour productivity) for the Professional, scientific & technical services industry is multiplied by the total hours worked in the Mining industry in the Capital City. This is done as much of the Mining activity in the Capital City is often related to head office operations. The Professional, scientific & technical services Gross value added per hour worked is thought to reflect the type of activities carried out by head office operations.

*Quality note:*

Due to the conceptual issues with measuring mining production associated with city based workers and lack of data the Mining estimates of Gross value added are considered to be of a very low quality. The method would not account for direct mining operations (quarries, sands etc) which take place in the Capital City. This could have a very small downward bias on the estimates.

Due to the relatively small size of the industry in Capital Cities (between 0.1 per cent and 0.4 per cent) it would have little impact on the quality of the Capital City's gross domestic product.

### Manufacturing

*Method:*

Data from the Manufacturing Industry, State and Australian Capital Territory (cat. no. 8221.1.55.001) publication provides information on the sales income share between Capital City and the Balance of State for 2001-02. Manufacturing Industry, Australia, 2006-07 (cat. no. 8221.0) provides the sales income split for 2006-07.

The share of the income within Capital City and the Balance of State is used to allocate the State Gross value added figure to Capital City for 2001-02 and 2006-07. The Capital City share is altered in every other year using the movements in hours worked from the Labour Force, Australia, Detailed, Quarterly (cat. no. 6291.0.55.003) publication.

*Quality note:*

The most reliable estimate would be for 2001-02 and 2006-07 with the estimates based on the labour force survey of a slightly lower quality. The 2001-02 income share for the Capital City is 69.8 per cent and the labour force hours worked is 72.8 per cent. The 2006-07 income share for the Capital City is 68.6 per cent and the labour force hours worked is 70.3 per cent. This indicates that the labour force survey is a reasonably good proxy of economic activity in the Manufacturing industry. The availability of detailed Manufacturing industry statistics data for 2001-02 and 2006-07 makes the estimates of Capital City's industry Gross value added of a good quality.

**Electricity, gas, water and waste services**

*Method:*

National Gross value added for the two digit industry subdivisions from Australian System of National Accounts (cat .no. 5204.0) and the Census two digit industry subdivision place of work data is used to estimate an average Gross value added per worker.

The Census place of work data for Capital City and the Balance of State is then applied to these averages. The share of the total estimated gross valued added is applied to the Australian National Accounts: State Account (cat. no. 5220.0) Gross value added for the Electricity, gas, water & waste services for State. This produces an estimate for 2005-06 for Capital City and Balance of State Gross value added for this industry. Population growth is then used to create a time series for industry Gross value added.

*Quality note:*

The quality for the Electricity, gas, water & waste services industry estimates would have to be seen as low. The lack of data is the key issue. The conceptual issue of splitting Gross value added between generators / water treatment plants and distribution networks is also challenging. The industry is estimated to represent around 2.0 per cent of a city's gross domestic product.

**Education and training**

*Method:*

The Australian Bureau of Statistics publication, Australian National Accounts: National Income, Expenditure and Product (cat. no. 5206.0) provides a measure of Gross value added for the Education industry in Australia. Government Finance Statistics, Education, Australia (cat. no. 5518.0.55.001) is used to split the national estimates of Education Gross value added into School & Post School Education.

Australian National Accounts: State Account (cat. no. 5220.0) provides a measure of Gross value added for the Education industry in each State. The Survey of Education and Training (cat. no. 6278.0) provides data on people with education qualifications, and estimates of school aged population taken from Population by Age and Sex, Regions of Australia (cat. no. 3235.0) are used to allocate the State estimate of education by level to the capital city.

*Quality note:*

Given the detailed level of data being used and the fairly straightforward nature of the delivery of education and training services (in a spatial sense) lead to the quality of this industry estimated being classed as good.

**Ownership of dwellings**

*Method:*

Average rents in Capital City and Balance of the State are derived from the Housing Occupancy and Costs, Australia, 2005-06 (cat. no. 4130.0) publication and combined with population data to estimate the share of Ownership of dwellings for the two areas. This is then applied to the Ownership of dwellings Gross value added from the Australian National Accounts: State Account (cat. no. 5220.0).

*Quality note:*

The quality of the available data and the clear conceptual boundaries lead to the quality of this industry estimate being classed as good.

**All other industries**

*Method:*

In the absence of any data which would allow the share between the Capital City and Balance of the State to be estimated, the hours worked from the Labour Force, Australia, Detailed, Quarterly (cat. no. 6291.0.55.003) is used. The industries to which this method is applied are:

- Construction
- Wholesale trade
- Retail trade
- Accommodation & food services
- Arts & recreation services
- Other services

For some industries one adjustment is made to the hours worked share. The hours worked are weighted by an average wage rate for Capital City and Balance of the State from the Census. This accounts for different economic structures within each industry in the Capital City and Balance of the State. For example, in Financial & insurance services the type of activities (from basic banking operations up to hedge funds) is much wider than in Balance of the State (where basic banking operations are the most common activities). The industries to which this method is applied to are:

- Information media & telecommunications
- Financial & insurance services
- Rental, hiring & real estate services
- Professional, scientific & technical services
- Public administration and safety
- Health care and social assistance

*Quality note:*

The quality of the various industry estimates would vary and should be treated with some caution but in aggregate the method should be provide a good estimate of a Capital City's gross domestic product.

**Taxes less subsidies on products**

*Method:*

Australian National Accounts: State Account (cat. no. 5220.0) provides a measure of Taxes less subsidies on products for the Agriculture, forestry & fishing industry in each State. The Capital City share of Agriculture, forestry & fishing industry Gross value added is used to split the value of Taxes less subsidies on products this industry. The residual of the State Taxes less subsidies on products is then split using the total industry value added (excluding Ownership of dwellings) for Capital City and the Balance of State.

*Quality note:*

This method should produce reasonable estimates of the split between Capital City and Balance of the State for Taxes less subsidies on products.

Aggregation of industry estimates to Gross Domestic Product Via the use of the implicit price deflation technique, the chain volume measures of industry Gross value added are converted into current prices. This method overcomes the non-additivity issue with the Chain volume measure and allows the aggregation of industry estimates of Gross value added to overall gross domestic product. In order to maintain consistency with the wider National Accounts, the Production approach estimate of Capital City gross domestic product is benchmarked to Gross State Product. An industry weighted GDP implicit price deflator is created to for the Capital City and Balance of State.

# Broad industry categories

| ANZSIC Industry Division | Broad Industry Category |
|---|---|
| Information Media and Telecommunications | Knowledge Intensive |
| Financial and Insurance Services | Knowledge Intensive |
| Rental, Hiring and Real Estate Services | Knowledge Intensive |
| Professional, Scientific and Technical Services | Knowledge Intensive |
| Administrative and Support Services | Knowledge Intensive |
| Public Administration and Safety | Knowledge Intensive |
| Education and Training | Health and Education |
| Health Care and Social Assistance | Health and Education |
| Construction | Population Serving |
| Retail Trade | Population Serving |
| Accommodation and Food Services | Population Serving |
| Arts and Recreation Services | Population Serving |
| Other Services | Population Serving |
| Agriculture, Forestry and Fishing | Industrial |
| Mining | Industrial |
| Manufacturing | Industrial |
| Electricity, Gas, Water and Waste Services | Industrial |
| Wholesale Trade | Industrial |
| Transport, Postal and Warehousing | Industrial |

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