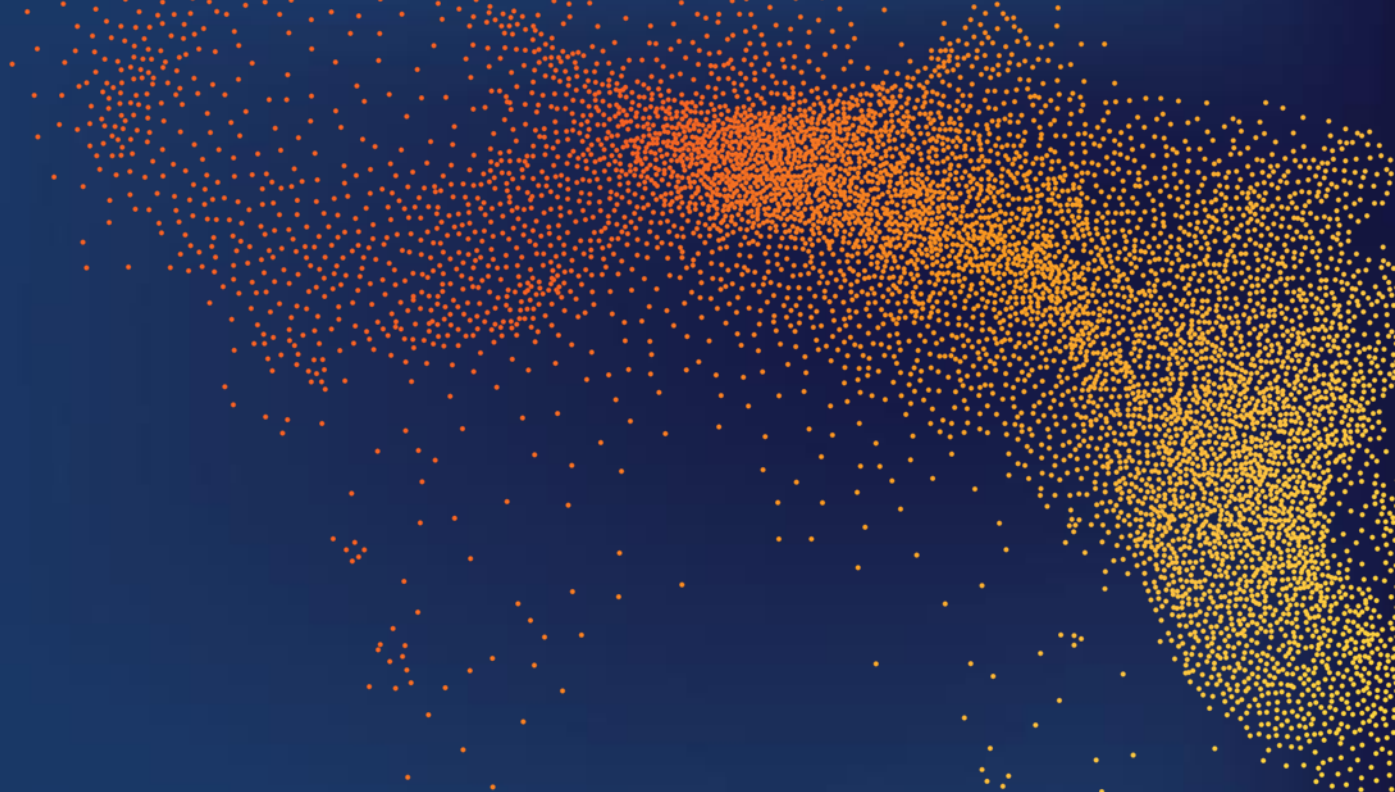




Economic Impact of the Regional Universities Network

September 2020

Disclaimer:

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Executive summary

The Regional Universities Network (RUN) is a network of seven universities based in regional Australia with a shared commitment to playing a transformative role in their regions.

In 2020, the RUN engaged Nous Group (Nous) and Victoria University's Centre of Policy Studies (CoPS) to estimate the economic impact of RUN member universities on regional Australia. The study considers RUN member universities' impact on real GDP, employment and real wage levels, and industry productivity in regional areas. It excludes these universities' metropolitan campuses and vocational education activity, which some RUN members provide.

The study uses Computable General Equilibrium (CGE) modelling, based on 2018 calendar year enrolments and financial data, to produce more robust estimates than input-output analysis. It is also important to note that whilst COVID-19 is currently having a significant impact on the higher education sector, results in this report reflect the economic impacts generated in a normal year of operations. Further detail about the study is available at Appendix A.

KEY FINDINGS



In 2018, RUN member universities contributed **\$2.4bn to real GDP** in their regional campus areas. Total RUN **student expenditure** was \$690m whilst **total university expenditure** was \$2.5bn.



RUN member universities **secure 11,300 jobs** and **increase real wages by 1.3 per cent**, in their regional campus areas. They also act as anchor institutions, drawing **61,500 students** to their regional campus areas each year.



RUN graduates help meet demand for key skills in regional Australia—**69 per cent** of RUN graduates stay to work in **regional Australia**¹.



Attending a RUN member university **increases undergraduates' earnings by \$235,000** over their lifetime.

RUN member universities play an important role bringing research and education to Australia's regions, helping to address the 20 percentage point gap in university education attainment rates between regional and metropolitan young people. However, RUN universities currently receive a less-than-proportional share of research and infrastructure funding than their metropolitan counterparts².

1. If RUN member universities received a more proportional (i.e. \$129 million higher) share of research funding regional GDP would increase by **\$94 million** and an additional **600 jobs** would be created.
2. If 6,000 more students took up higher education places at RUN universities in regional areas, regional GDP would rise by **\$122 million** and **690 more jobs** would be created.
3. If RUN member universities each received an additional \$50m in infrastructure investment regional GDP would rise by **\$140 million** and **900 more ongoing jobs** (not including one-off construction jobs) would be created.
4. RUN's estimated employment impacts could range from a base case of 11,300 jobs **up to 15,700 jobs** if a larger proportion of a region's population is attracted solely by the RUN campus.

¹Regional Australia is defined as any postcode area within a regional RUN campus SA3 region, or any postcode area outside the Australian Bureau of Statistics' Greater Sydney, Greater Melbourne, Greater Brisbane and Greater Perth Statistical Areas.

²Source: National Regional, Rural and Remote Tertiary Education Strategy, available: [here](#).

RUN delivers many economic benefits across regional Australia

2015

\$1.7b
REAL GDP

JOBS
6,200

CSU
joins
RUN

6 RUN
unis
grow

RUN increases
real wages
by

1.3%

\$2.5bn

university expenditure

\$690m

student expenditure



7 of 10

RUN graduates
work in regional
Australia

RUN graduates earn
\$235,000
more in lifetime earnings

Nearly
61,500
students study at RUN's
regional campuses¹



2018

\$2.4b
REAL GDP
+41%

11,300
+82%

JOBS

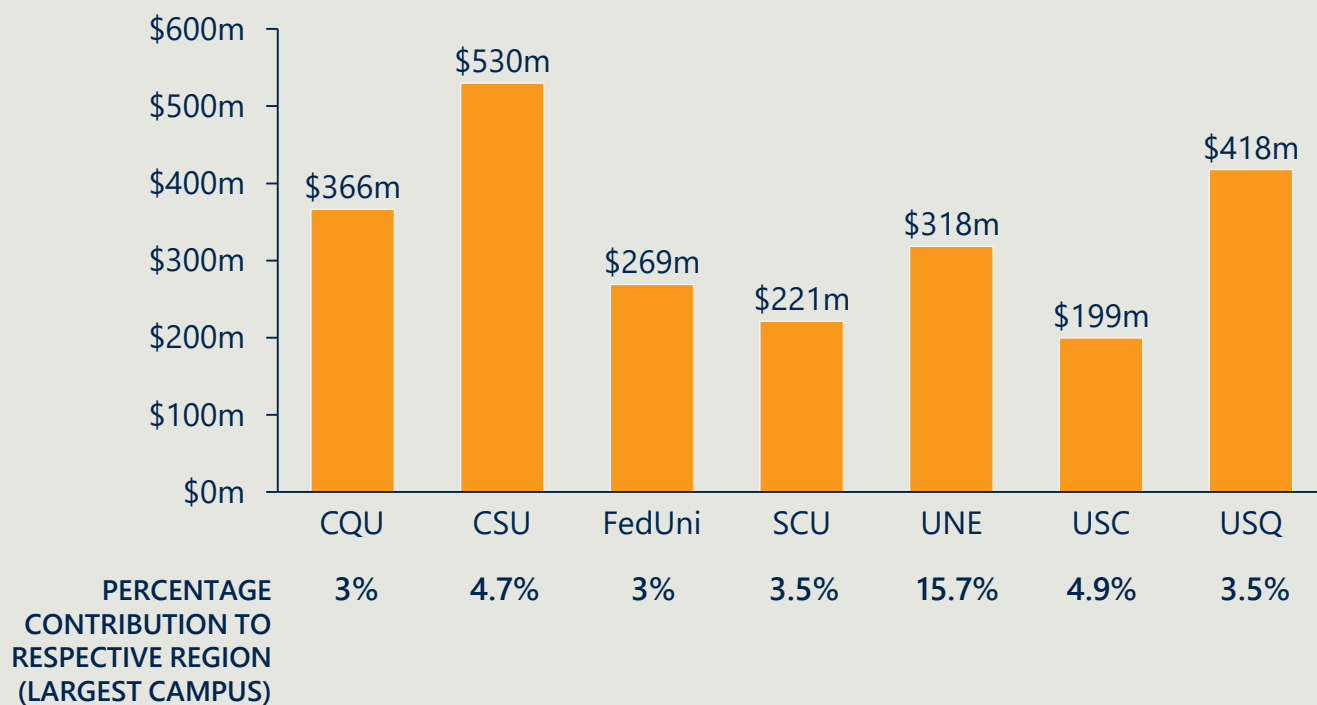
¹This figure only accounts
for students that study
internally or multi-modally
at RUN member
universities' campuses
included in the study

RUN's economic impact

RUN member universities are a major contributor of economic activity in regional Australia

RUN member universities contributed \$2.4bn to real GDP in regional Australia in 2018. This represents an increased contribution to real GDP of nearly \$700m since 2015 (or 41%).

RUN MEMBER UNIVERSITIES' CONTRIBUTION TO REAL GDP IN REGIONAL AUSTRALIA



Note: the GDP contribution in individual campus regions does not sum to the total due to some regional economic impacts accruing in other parts of regional Australia (e.g. to a neighbouring region near the campus location).

In 2018, RUN universities contributed approximately

\$2.4 billion

to **real GDP** in regional Australia.

RUN is an integral part of the economic fabric of regional Australia



RUN member universities have a combined \$2.5bn in university expenditure



RUN member universities are a major source of employment in its local communities

RUN universities create **11,300 jobs** and increase average real wages by **1.3%** across their regional campus areas



RUN delivers world class research



RUN's research excellence has grown significantly and has an estimated economic value of **\$272m** to the Australian economy

RUN member universities attract many students to their regions, increasing local demand for goods and services

In 2018, 135,400 students were enrolled at RUN's regional campuses across all study modes. Of these students, 61,500 students study at RUN's regional campuses¹. These students drive demand for goods and services in their regions. In total, RUN university students spent approximately \$690m in regional areas in 2018, which equates to roughly \$6,800 per student (EFTSL) per annum, that is directly attributable to the presence of RUN universities.² This is an increase of \$210m in student expenditure since 2015.

INTERNAL STUDENTS BY HOME RESIDENCE, 2018

RUN member universities attract **7,800** students from overseas



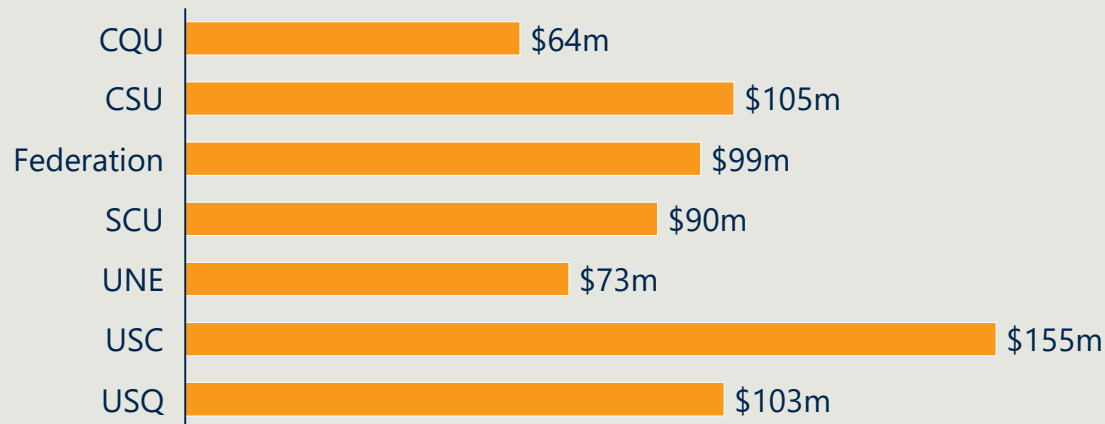
29,700 students relocate from across Australia to study at a RUN member university



24,000 students stay in their local regions to study at RUN member universities



STUDENT EXPENDITURE BY RUN MEMBER UNIVERSITY, 2018



Source: RUN enrolment data 2018, reported to DESE, as supplied by RUN; RUN financial data 2018, from DESE. Enrolment data excludes metropolitan campuses and vocational education. Financial data excludes vocational education operated by RUN members. ¹The number of students attracted to regional campus areas from overseas or other parts of Australia only includes internal and multi-modal students. ²RUN EFTSL data is constructed by the Centre of Policy Studies, Victoria University

135,400
total students
in 2018

61,500 students
study at RUN's regional
campuses in 2018

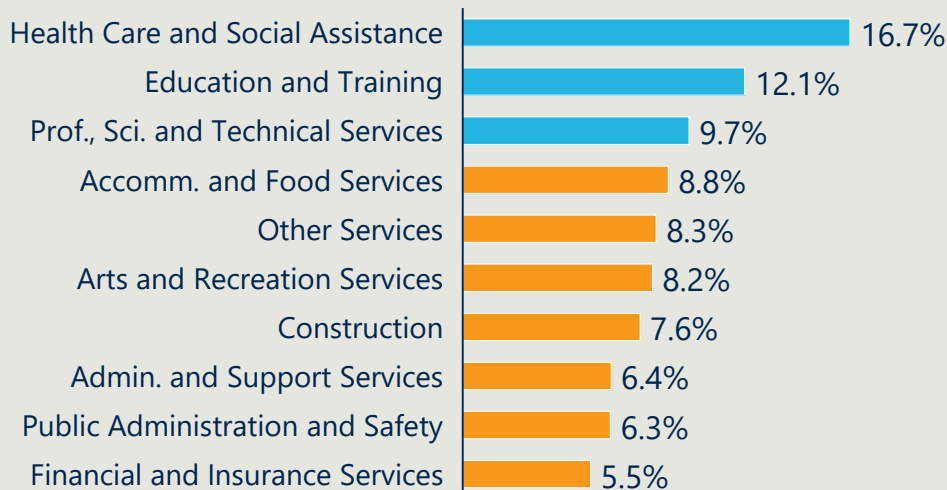
\$690 million
total student
expenditure in 2018

\$6,800
per student
(EFTSL)²

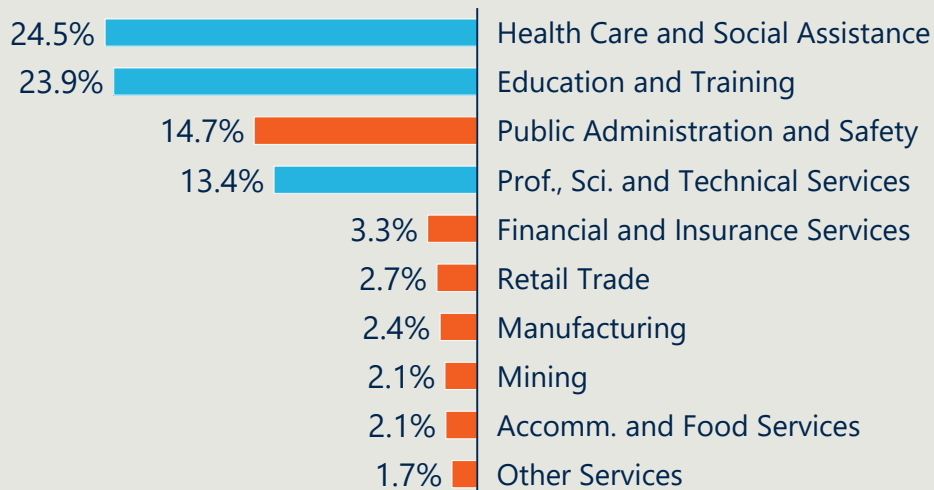
RUN delivers the skills training and qualifications that regional Australia needs to its students

RUN plays an important role in filling the demand pipeline for key industries in regional Australia. In 2019, nearly half of all RUN graduates went on to work in the Health Care and Social Assistance, and Education and Training industries—the two industries expected to experience the greatest employment growth over the next five years in regional Australia. RUN also provides skills training in these industries, with over 40 per cent of students studying Health and Education courses in 2018.

PROJECTED EMPLOYMENT GROWTH IN REGIONAL AUSTRALIA, BY INDUSTRY, 2019-24



MAIN INDUSTRIES OF RUN GRADUATE EMPLOYMENT, 2019



27.6% of undergraduates study **Health** courses



22.2% of undergraduates study **Society & Culture** courses

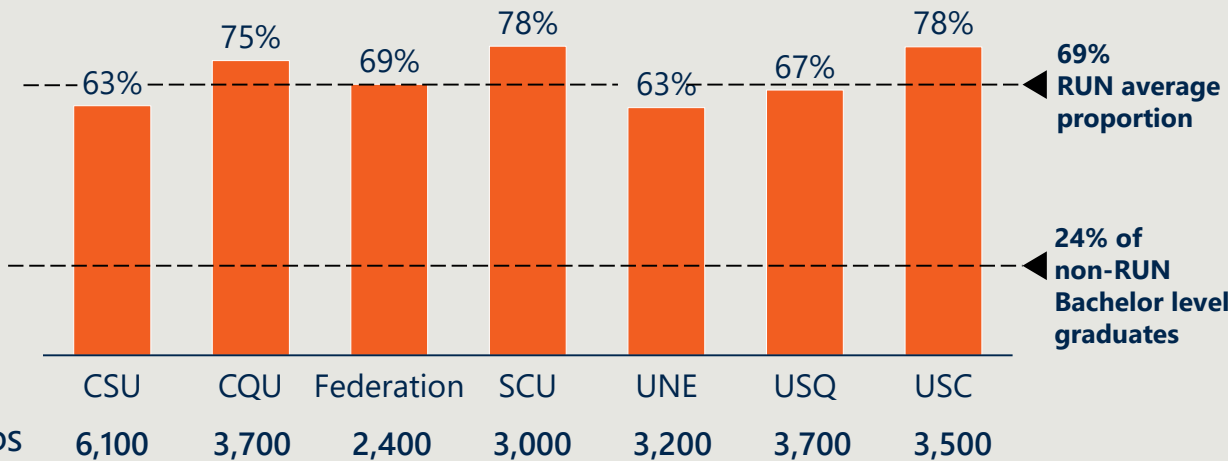


16.8% of undergraduates study **Education** courses

7 out of 10 RUN undergraduates stay in regional Australia for work after graduation

A significant proportion of RUN university graduates go on to work in regional Australia¹. Between 2017 and 2019, 69% of domestic employed RUN bachelor-level graduates stayed in regional Australia after graduation for work. This translates to roughly 26,000 domestic bachelor-level graduates in regional Australia. This is in comparison to 24% of non-RUN bachelor-level graduates working in regional Australia. Due to survey sample sizes, possible non-response bias, and data that is self-reported, these figures are approximate.

PROPORTION OF EMPLOYED DOMESTIC GRADUATES WORKING IN REGIONAL AUSTRALIA, BY LEVEL OF STUDY, 2017 – 2019



GRADS
EMPLOYED IN
REGIONAL AUS.
2017 – 2019²

Source: Graduate Outcomes Survey data, 2017 – 2019, supplied by RUN

¹Regional Australia is defined as any postcode area within a regional RUN campus SA3 region, or outside the major capital cities of Sydney, Melbourne, Brisbane and Perth. ² Estimated based on RUN domestic student completions data, 2016 – 2018.

7 out of 10

domestic bachelor-level **RUN** graduates work in **regional Australia**

2.5 out of 10

non-RUN domestic bachelor-level graduates work in **regional Australia**

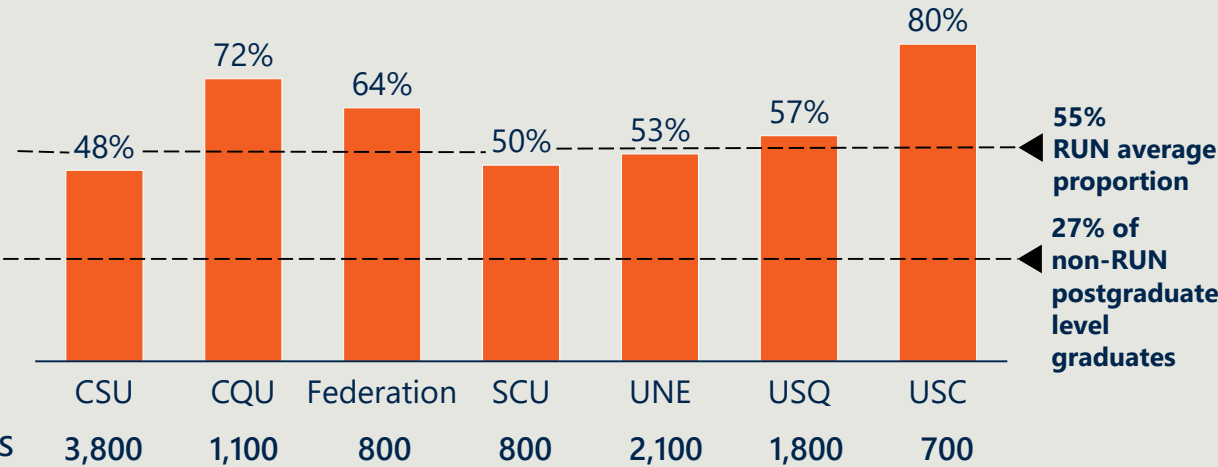
26,000

domestic bachelor-level graduates working in **regional Australia** between 2017 and 2019

55% of RUN postgraduates stay in regional Australia for work after graduation

Between 2017 and 2019, 55% of domestic employed RUN post-graduate level graduates stayed in regional Australia for work¹. This translates to roughly 11,000 domestic postgraduate-level graduates in regional Australia. This is in comparison to 27% of non-RUN bachelor-level graduates working in regional Australia. Due to survey sample sizes, possible non-response bias, and data that is self-reported, these figures are approximate.

PROPORTION OF EMPLOYED DOMESTIC GRADUATES WORKING IN REGIONAL AUSTRALIA, BY LEVEL OF STUDY, 2017 – 2019



GRADS
EMPLOYED IN
REGIONAL AUS.
2017 – 2019²

55%

of domestic
postgraduate-level
graduates work
regional Australia

11,000

domestic
postgraduate-level
graduates working
in regional Australia
between 2017 and
2019

Source: Graduate Outcomes Survey data, 2017 – 2019, supplied by RUN

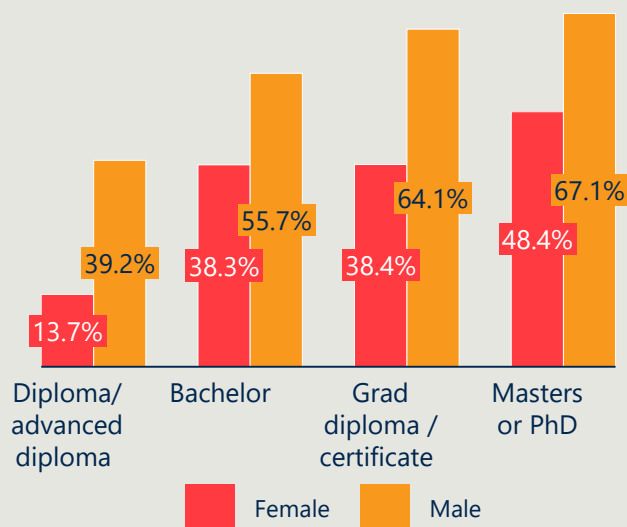
¹Regional Australia is defined as any postcode area within a regional RUN campus SA3 region, or outside the major capital cities of Sydney, Melbourne, Brisbane and Perth. ² Estimated based on RUN domestic student completions data, 2016 – 2018.

RUN graduates are highly sought after and have increased lifetime earnings

On average, a RUN university graduate with a Bachelor's degree can expect to earn \$235,000 more over the course of their life, than a non-degree holder (in net present value terms). RUN university undergraduates also enjoy high starting full-time salaries compared to their peers—undergraduates from most RUN universities earn above the median starting salary (\$62,600) for all universities.

WAGE PREMIA, BY DEGREE, 2016

MEDIAN UNDERGRADUATE STARTING SALARY 2017 - 2019



	Median starting salary
CQU	\$68,800
CSU	\$67,100
FedUni	\$64,000
SCU	\$65,000
UNE	\$68,900
USQ	\$69,400
USC	\$60,600 ¹

Obtaining a Bachelor's degree from a RUN member university increases graduates' earnings by

\$235,000²
over their lifetime

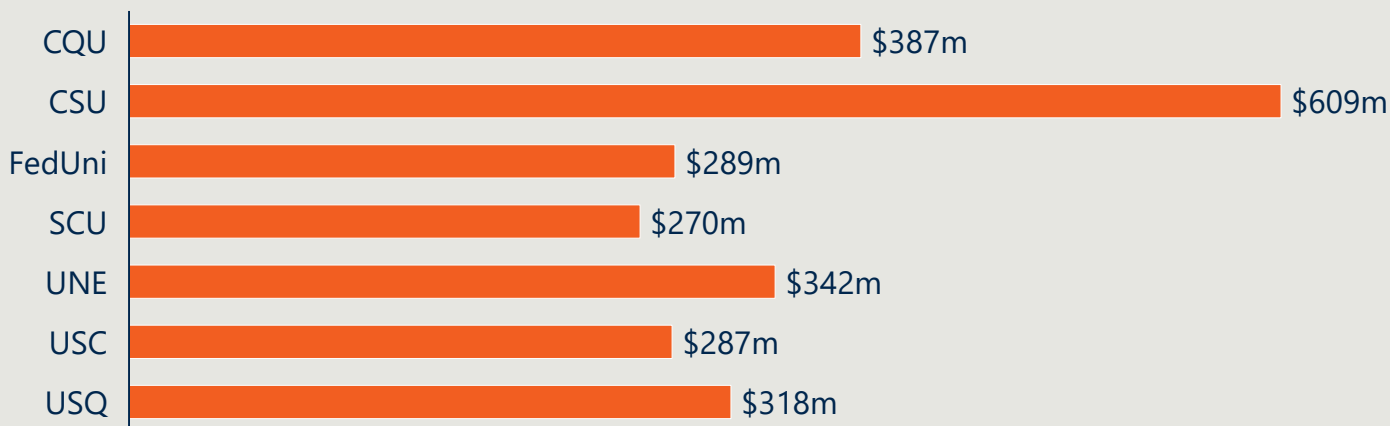
Note: human capital results are a stock measure of the net present value of future earnings. Accordingly, they should be viewed in parallel with real GDP results, an annual flow measure, so not additive to these results.

Source: Table 7.4: Effects of education on employment and earnings, 2012 and 2016 HILDA State Report 2018, Wilkins ([link](#)); Graduate Outcomes Survey, 2019 ([link](#)). ¹The lower median starting salary for USC reflects compositional differences in student study modes and student employment. USC has the lowest proportion of external students—many of whom are already in employment and whose salaries the Graduate Outcomes Survey does not capture. ²The net present value of the increased undergraduate earnings assumes undergraduates secure full-time employment at 22 years old and work full-time until retirement at age 65. Data from Census 2016 was used to estimate the average salary of a non-degree holder at 22 years old in the RUN member university campuses' SA3. We assume an annual real increase of salaries of 1.5%, an age-based salary premium (derived from [here](#), pg 80-81) and a discount rate of 7% for the net present value.

RUN member universities have a combined \$2.5bn in university expenditure

RUN member university expenditure plays an important role supporting employment in regional campus areas. In 2018, RUN member universities had a total combined expenditure of \$2.5bn—most of which was spent in their regional campus areas. Additionally, economic activity associated with universities is not influenced by the same weather and commodity cycles like agricultural production so can provide some diversification and stabilisation of activity in regional areas.

UNIVERSITY EXPENDITURE BY RUN MEMBER UNIVERSITY, 2018



Source: RUN financial data 2018, from DESE. Financial data excludes vocational education operated by RUN members.

\$2.5 billion
total university
expenditure in 2018

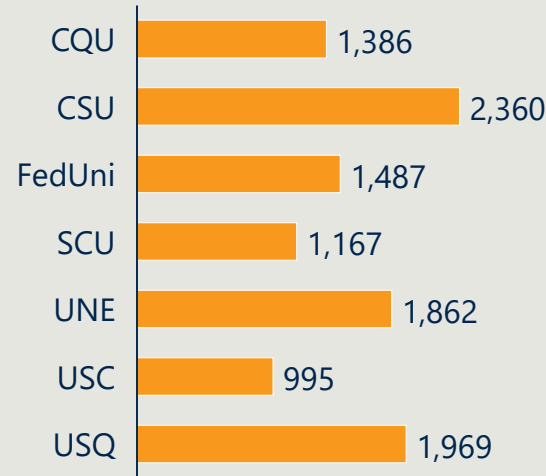
RUN member universities are a major source of employment in its local communities

increase real wages in their local communities

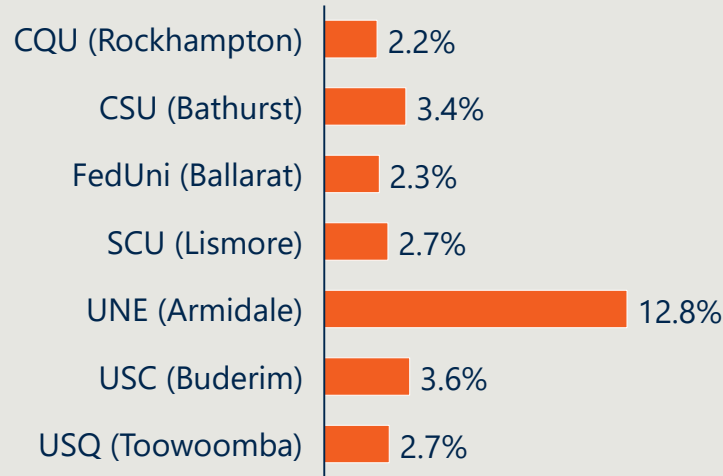
RUN member universities create 11,300 jobs (both directly and indirectly) across regional Australia. This is about twice the number of jobs that RUN universities created in 2015 (6,200). RUN universities also increase real wage levels in their regions—across all sectors of the economy—due to the high-skilled, well-paid jobs they create, as well as their role in boosting demand across the economy.

The graph below presents the number of jobs each university generates in its regional campus areas, and the impact each university has on real wages in its largest campus region.

NUMBER OF JOBS RUN MEMBER UNIVERSITIES CREATE IN THEIR REGIONAL CAMPUS AREAS, 2018



IMPACT OF RUN MEMBER UNIVERSITIES ON REAL WAGES IN THEIR LARGEST CAMPUS REGIONS, 2018



RUN universities
create
11,300 jobs
and increase
average real wages
by
1.3%
across their
regional campus
areas¹

¹1.3% increase in average real wages includes results averaged across all RUN campus regions included in the model.

RUN's research excellence has grown rapidly and brings world class research to regional Australia

RUN's research capability has grown rapidly since 2012. In 2012, 8 broad fields of research were rated as "Above world standard" or "Well above world standard". In 2018, 34 broad fields of research were rated as such, reflecting a four-fold increase in world-class research being conducted at RUN member universities.

Number of broad fields of research rated as
"Above world standard" or "Well above
world standard" across all RUN member
universities:

8

in 2012

20

in 2015

34

in 2018

RUN conducts world class research in:

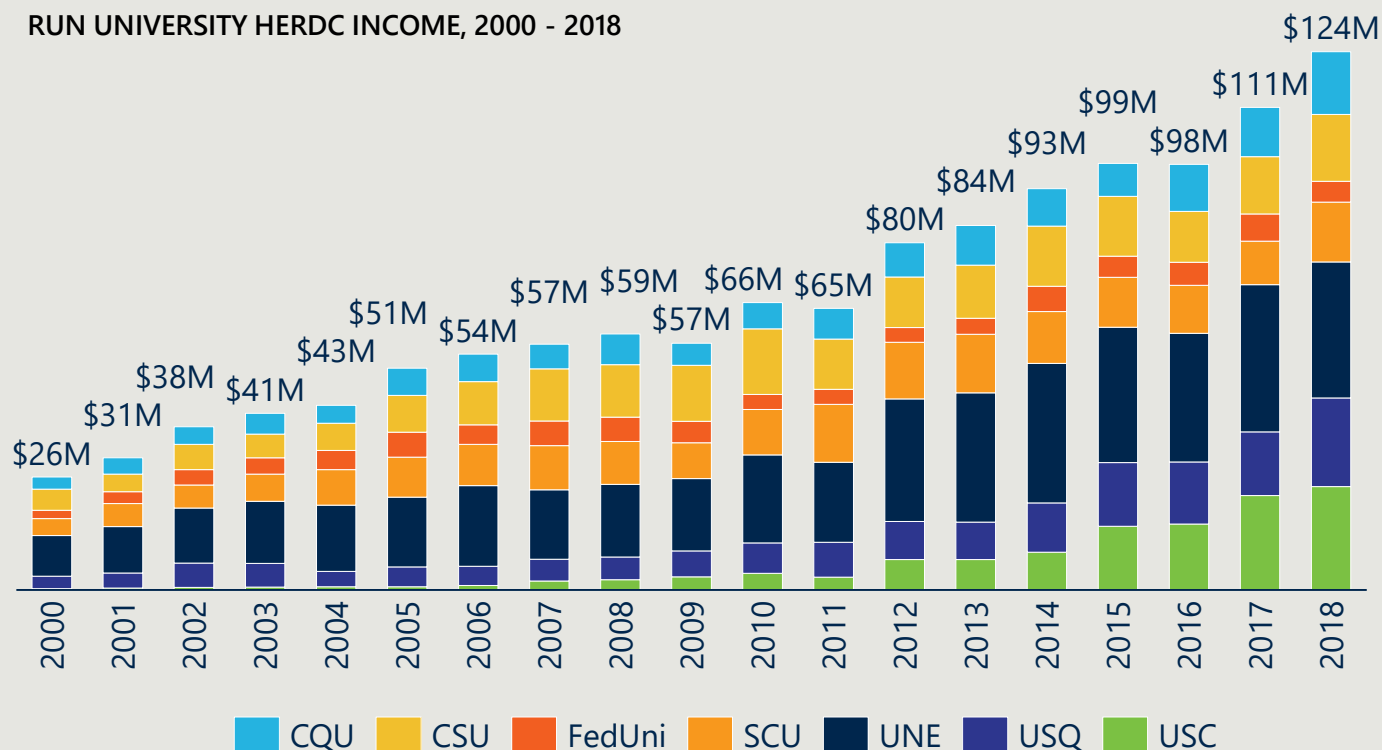
Mathematical Sciences
Chemical Sciences
Earth Sciences
Environmental Sciences

Agricultural and Veterinary Sciences
Technology
Medical and Health Services
Psychology and Cognitive Sciences

RUN member universities' world class research enhances industry productivity across Australia

By developing new ideas and technologies, particularly in areas relevant to regional economies (such as agriculture and mining), RUN member university research enhances industry productivity across the economy. It is measured in the CGE model based on the sum of research income, and the value of time spent undertaking research activity by academic staff, to derive the economic impact accruing to regional areas.

RUN UNIVERSITY HERDC INCOME, 2000 - 2018



Source: Higher Education Research Data Collection, Research Income Data (1994 – 2018), available: [here](#).

RUN universities
received

\$124m

in research income
in 2018

and academics' time
spent on research
was valued at

\$148m

Enabling farmers achieve better economic and environmental outcomes

CSU partnered to deliver EverGraze - a national research, development and engineering program helping farmers minimise dryland salinity and increase profits through increased use of perennial pastures. Farmers who changed practice based on EverGraze achieved significantly improved economic and environmental outcomes. The total benefit from EverGraze was estimated at \$305.5m. With total project costs of \$33m, the estimated benefit-to-cost ratio was 9:1.



Charles Sturt University

Partnering with the agricultural industry for improved commercial outcomes

CSU works with Farming Systems Group to foster research, development and extension opportunities to benefit the agricultural industry. This partnership has led increased productivity, profitability and sustainability of the grains and red mat industries. It has also strengthened agribusinesses by removing trade barriers and increasing international engagement.

A person with curly hair is shown from the side, holding a small electronic device (likely a pedometer) in their hand. The device has a screen displaying the number "82". The person is wearing a grey sweater and blue pants.

Achieving better health outcomes for thousands of Australians

With almost 400,000 participants, \$4m of investment over 18 years, and over 200bn steps registered, CQU's 10,000 steps program is one of the largest and most successful health promotion programs in Australia. Now a concept widely recognized around the world, the self-monitoring physical activity program encourages participants to take 10,000 steps every day.

A wide-angle photograph of a vast agricultural field with rows of young green plants. In the background, a red tractor is visible, and a mist or spray is being emitted from the field, suggesting a farming operation like irrigation or pest control.

Enabling greater innovation in farming

The Institute for Future Farming Systems works with end-users to develop non-invasive and precision agriculture technologies. For example, infrared technology was developed to scan mangos to assess ripeness and maximise shelf life, driving down costs for farmers.

Driving collaboration between industry and research

Located in the Gippsland Hi-Tech Precinct, FedUni will manage the \$17.2m Morwell Innovation Centre from 2020. The centre will provide a central gateway for collaboration of educators, researchers, business leaders and industry. It will focus on the key growth sectors—health, food and fibre and new energy.

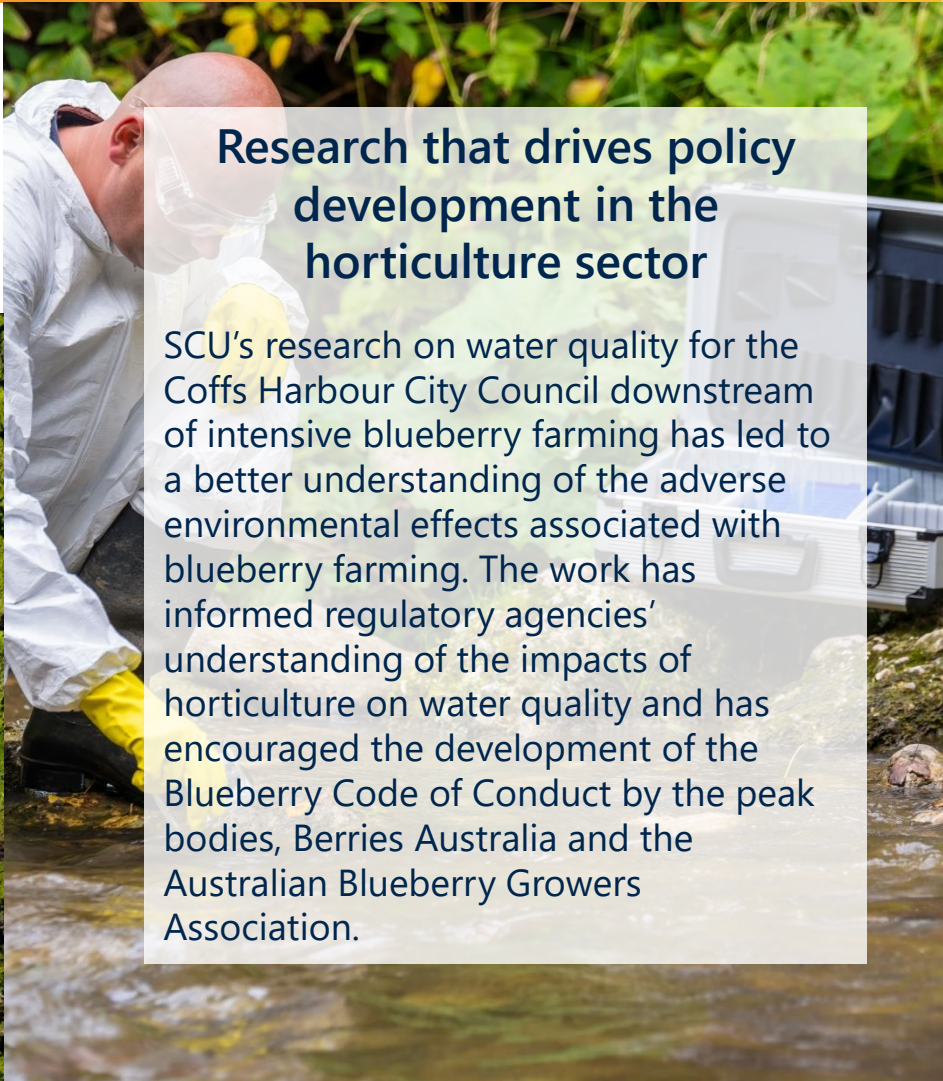
Advanced R&D in geotechnical and hydrogeological engineering

The Geotechnical and Hydrogeological Engineering Research Group combines a wealth of research experience in geomechanics, hydrogeology and soil science for the purposes of open-pit mine research. The group works closely with the Victorian Government and Latrobe Valley mining partners to provide a broad range of advanced research development and support to the Latrobe Valley brown coal mines.



World-leading research to mitigate and remediate severe environmental threats

Acid sulfate soils (ASS) and monosulfidic black ooze (MBO) pose severe environmental threats, including the release of toxic metals and deoxygenation of water. SCU's novel research around ASS and MBO has led to novel remediation approaches for severely degraded sites. It has informed policy, changed environmental practices and provided benefits to local industries and communities. The researchers' work at East Trinity Bay in Queensland was hailed as the most effective large-scale clean-up of acid sulfate soils in the world.



Research that drives policy development in the horticulture sector

SCU's research on water quality for the Coffs Harbour City Council downstream of intensive blueberry farming has led to a better understanding of the adverse environmental effects associated with blueberry farming. The work has informed regulatory agencies' understanding of the impacts of horticulture on water quality and has encouraged the development of the Blueberry Code of Conduct by the peak bodies, Berries Australia and the Australian Blueberry Growers Association.

The logo for the University of New England (UNE) features the letters 'une' in a stylized, lowercase, green font.

University of
New England

A background image showing the back of a young person with dark hair, wearing a green shirt, sitting at a desk and writing in a notebook with a yellow pencil. A laptop is partially visible in the foreground.

Fast-tracking development in literacy and numeracy skills

UNE's Quicksmart Program is an evidence-based program that fast tracks the development of middle school students with poor basic skills in literacy and numeracy. Program participants consistently achieve skill development in 30 weeks equivalent to that normally achieved over 2-3 years of schooling.

A background image of a laboratory setting. A person in a white lab coat and safety glasses is working at a desk with a computer. In the foreground, there are several glass bottles with blue caps. The background shows shelves with more bottles and laboratory equipment.

Unlocking the power of genetics in the agricultural industry

UNE's Animal Genetics Breeding Unit (AGBU) supports agricultural industries in identifying the best animals and plants to breed for commercial purposes. By combining large industry datasets with genetic analysis methodologies, AGBU has developed leading genetic evaluation software across a range of sectors. In Australia, it is estimated that the unit's beef and sheep genetics R&D has delivered approximately \$1.4bn gross benefit, adding \$45-50m of on-farm wealth per annum.



Pioneering solutions to reduce methane emissions

The Australian red meat industry set a target to be carbon neutral by 2030. USC researchers are helping achieve this goal by partnering with CSIRO, Meat and Livestock Australia and James Cook University to determine which species of seaweed could reduce methane production in livestock without compromising meat or milk production.

Coordinated care leading to improved healthcare for seniors

USC's Care Coordination through Emergency Department, Residential Aged Care and Primary Health Collaboration Program embodies nursing interventions for health improvements with Seniors, yielding significant enhancements and reduced costs in the treatment of frail older adults. The project attracted \$2.5M in end-user organisation support, and involved the Sunshine Coast Hospital and Health Service (SCHHS), Sundale Ltd (aged care provider), the Central Queensland, Wide Bay and Sunshine Coast Private Health Networks (PHNs), as well as Griffith University and the Australian Centre for Health Services Innovation.

Helping Australian farmers with novel technologies

USQ has a long-standing strategic partnership with Deere & Company in the USA to facilitate joint research initiatives in agricultural technologies. The partnership has enabled Australian farmers to be among the first in the world to benefit from research into machine vision technologies such as automated irrigation and driverless tractors.

Revolutionising manufacturing industries

USQ is recognised internationally for its R&D projects in automated fibre composites for civil infrastructure. USQ has partnered with Wagners Composite Fibre Technologies (CFT) to focus on the development of pultrusion technologies that are revolutionising manufacturing industries. The partnership has created advanced structures which have captured new high value markets in the oil and gas and transport industries both in Australia and internationally.

Scenario analysis

If research funding to RUN doubled, an additional 600 jobs would be generated and \$94m in real GDP would be generated

CURRENT SCENARIO

With the increase of world-class research being conducted at RUN member universities, RUN plays an important role in contributing to industry productivity in regional Australia.

In 2018, RUN member universities received 2.99% of research income allocated to public universities—or \$124m. This equates to 4.9% of member universities’ total revenue.

POTENTIAL SCENARIO

RUN research income is increased by \$129m to \$253m.

This increase doubles the RUN’s total research income, taking it to 6% of all research income allocated to public universities and reflects the growth in world class research being undertaken at RUN member universities.

KEY RESULTS

 Real GDP	Doubling RUN research income to \$253m would generate an additional \$94m in real GDP across RUN’s regional campus areas.
 Jobs	The increase in research income would create an additional 600 jobs in RUN’s regional campus areas. Most of these jobs are created at RUN’s largest regional campuses.

Source: Higher Education Research Data Collection, Research Income Data (1994 – 2018), available: [here](#); 2018 Finance Publications, Department of Education, Skills and Employment, available: [here](#). Note: for CQU and Federation University, only higher education revenue is considered.



If 6,000 more students from regional, rural and remote NSW, Victoria and Queensland attended RUN universities, an additional 690 jobs would be generated and \$122m more contributed to real GDP.

CURRENT SCENARIO

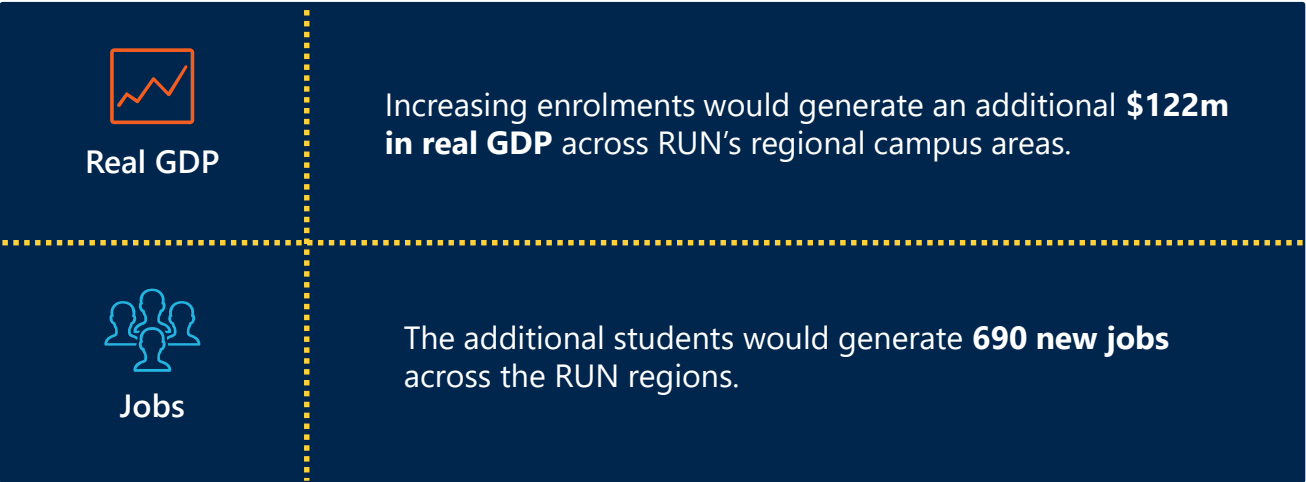
Individuals from regional, rural and remote areas are “less than half as likely to gain a bachelor and above qualification by the time they are 35 years old, compared to individuals from metropolitan areas” (Napthine Review*). Halving this disparity is the central target of the Commonwealth’s National Regional, Rural and Remote Tertiary Education Strategy.

POTENTIAL SCENARIO

6,000 more students from regional, rural and remote areas of NSW, QLD and Victoria go to university each year, and they choose to attend RUN universities.

This increase in RUN enrolments is equivalent to meeting the strategy’s target to lift regional participation rates.

KEY RESULTS



* Review of Regional, Rural and Remote Tertiary Education
Source: National Regional, Rural and Remote Tertiary Education Strategy, p. 6 – 11, available: [here](#).

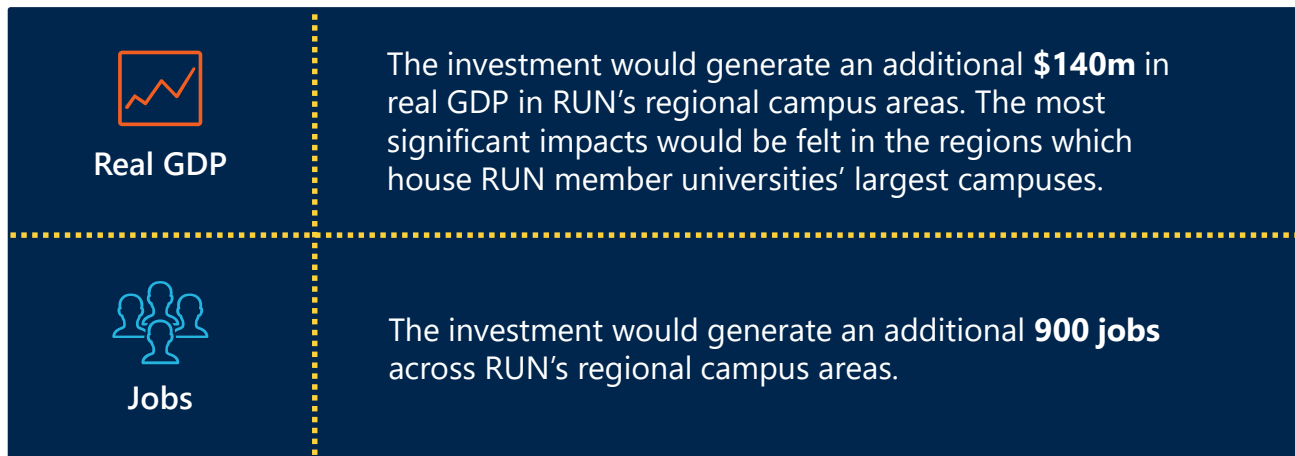


If each university received a once-off capital investment valued at \$50m, an additional 900 ongoing jobs (not including one-off construction jobs) would be generated, and \$140m more contributed to real GDP.

University infrastructure and facilities play an important role in regional areas, often doubling as community assets. Furthermore, identifying opportunities to establish research infrastructure was highlighted in the Napthine Review as a key measure through which to 'strengthen the role of tertiary education providers in regional development and grow Australia's regions.' This scenario models the impact of RUN member universities each receiving a once-off increase in capital funding, valued at \$50m, to demonstrate the potential increase in their economic impact.

The results shown below reflect the long-term economic impact to RUN's campus regions. For example, it does not reflect the temporary creation of construction jobs in campus regions when RUN member universities use the investment to construct new facilities

KEY RESULTS



Source: National Regional, Rural and Remote Tertiary Education Strategy, p. 7, available: [here](#).



Simulating increased population in a region due to the presence of a university generates a possible \$2.9 billion and 15,700 jobs.

RUN member universities act as anchor institutions within their regions. If those university jobs did not exist, some people may be likely to leave town rather than stay and find alternative (possibly lower paying) employment. Equally, as the university grows over time, more people are attracted to the university jobs available in town. However, this can also create skill shortages for other businesses in that town that also need labour. This scenario demonstrates the potential range of GDP and employment impacts depending on how flexible the region's population (and hence labour supply) is in expanding or contracting in response to the level of activity at the university.

In economic terms, if more people are attracted to the town as the university grows, there are fewer "crowding out effects" (i.e. skill shortages) in the region as the university expands. The base case results (\$2.4bn in GDP and 11,300 jobs) are based on a default level of "crowding out effects" and this scenario is based on fewer "crowding out effects". Note that Input-Output analysis has no allowance for "crowding out effects" compared with CGE modelling, so would give results somewhat higher again than \$2.9bn.

KEY RESULTS



Real GDP

Allowing for population movement to be more flexible (i.e. less crowding out) the impact of RUN on GDP would be **\$2.9bn**, \$500m more than the base-case impact.



Jobs

The larger movement of labour implies that RUN-member universities create **15,700 jobs**, 4,400 more jobs than the base-case results.



Appendix A - Methodology

RUN's economic contribution in regional areas is estimated by simulating a "what-if" case where RUN's regional campuses did not exist.

The study uses a Computable General Equilibrium (CGE) model to estimate what would happen if RUN campuses did not exist in 2018. It models the impacts of the reallocation of resources and de-population, to produce estimates of the universities' economic impact on their campus regions. We exclude RUN campuses in metropolitan areas and dual sector activities (VET).

SPECIFY

We calculate inputs: university and student expenditure; research income; the number of graduates working in RUN campus areas.



CGE MODEL

We model a "what if" scenario where university campuses do not exist in the regions.



RESULTS

We derive the real GDP contribution from activities across the regions.

The economic model involves three main effects: spending, jobs and productivity, and research outputs of RUN's member universities.

The RUN's seven member universities deliver quality education to Australia's regional areas and contribute to Australia's economy in three main ways:

INPUT	ECONOMIC EFFECT	EXPLANATION
- Jobs in regional areas - Increased productivity of trained graduates	SUPPLY 	RUN member universities grow Australia's regional workforce and increase its productivity. This is measured through the proportion of RUN graduates employed in regional areas and the subsequent impact on wage premiums.
- Student spending - University expenditure in the regions	DEMAND 	RUN member universities grow Australia's economy directly by driving demand in its regions. This is measured through increases in: private consumption; government consumption; international and interstate exports.
- Innovations produced through research - New techniques for industry	RESEARCH OUTPUTS 	RUN member universities contribute to industry through research outputs, which lift the productivity of industries and deliver better outcomes for Australians. Gains could range from increased crop yields to more effective health interventions.

We focus on economic contributions from RUN's nominated regional campuses.

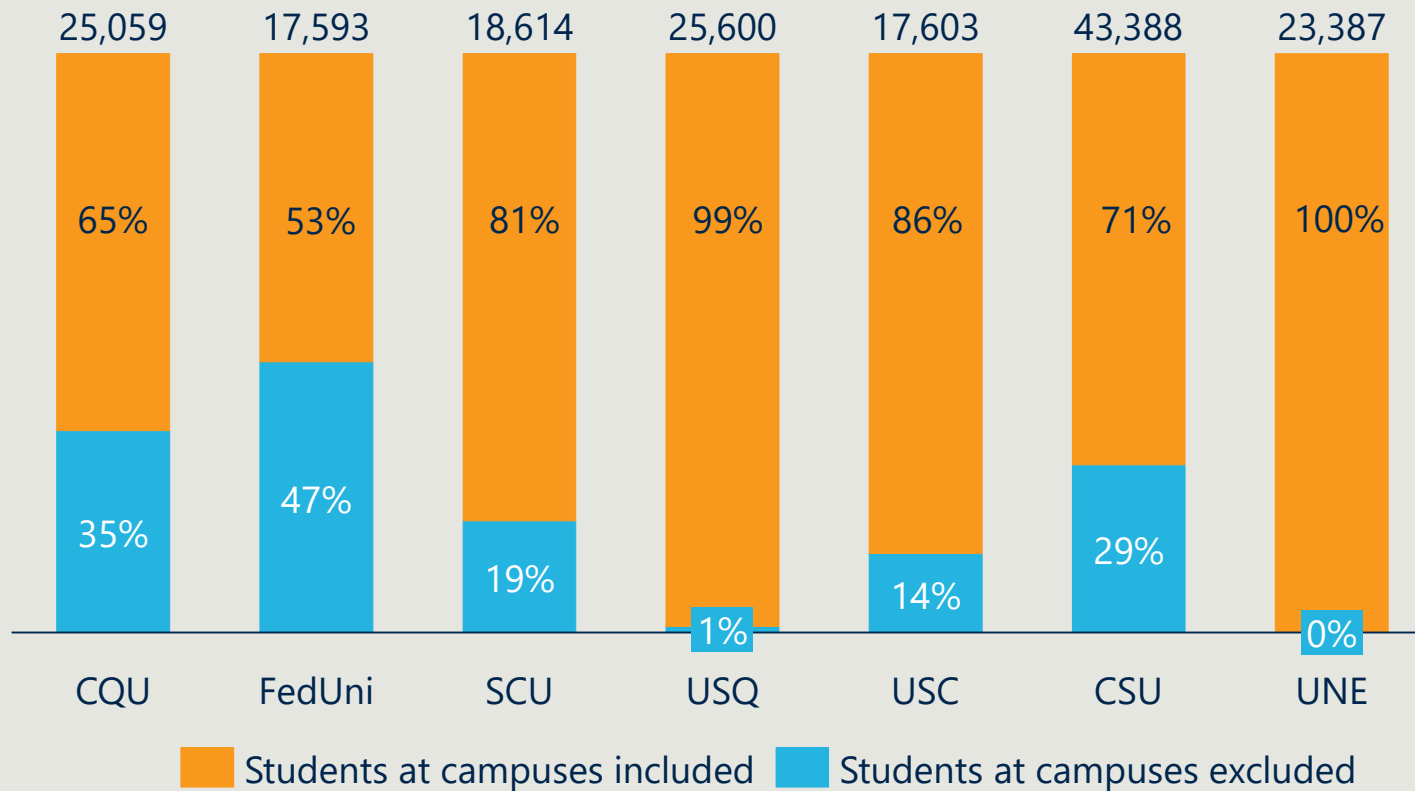
The table below presents the campuses that will be included in the study, as well as those that will be excluded. For the dual-sector universities—Federation University and Central Queensland University—only data related to Higher Education offerings will be included.

Campuses included		Campuses excluded	
Central Queensland University	• Rockhampton • Mackay • Gladstone	• Bundaberg • Emerald • Townsville • Cairns	• Brisbane, Sydney, Melbourne, Adelaide, Perth, Noosa • Study hubs and centres: Yeppoon, Biloela, Cooma, Busselton, Geraldton, Karratha and Broome
Charles Sturt University	• Bathurst • Dubbo • Orange • Albury-Wodonga	• Wagga Wagga • Port Macquarie • Goulburn	• Canberra • Manly • Parramatta
Federation University	• Ballarat • Churchill	• Berwick	• Brisbane • Study hubs and centres: Kuala Lumpur • Horsham
Southern Cross University	• Lismore • Gold Coast • Coffs Harbour		• Study hubs and centres: Grafton, Byron Bay, Sydney, Melbourne and Perth
University of New England	• Armidale		• Study hubs and centres: Tamworth, Taree, Coonabarabran, Narrabri, Moree, Inverell, Tenterfield, Glen Innes, Gunnedah, Guyra, Cooma and Future Campus Parramatta
University of Southern Queensland	• Toowoomba • Springfield /Ipswich		• Study hubs and centres: Sydney and Stanthorpe
University of the Sunshine Coast	• Sippy Downs • Gympie • Fraser Coast • Caboolture		• Birtinya, South Bank • Study hubs and centres: Fraser Island, Noosa, North Lakes, Sydney and Melbourne

80 per cent of RUN member university students are captured in the model.

As the study focuses on the contributions of selected regional campuses, some RUN students are excluded from the model. The graph below presents the proportion of students enrolled at each RUN member university in 2018, that are captured in the model.

PROPORTION OF RUN MEMBER UNIVERSITY STUDENTS CAPTURED IN THE MODEL BASED ON 2018 ENROLMENTS



The CGE model is more robust than an Input-Output model and produces more realistic, accurate and defensible results.

The CGE model is Treasury's preferred method for estimating economic impact, and is an effective method to highlight the true benefit of the RUN.

The CGE model more accurately reflects how resources are allocated across the economy.

When a RUN university is assumed to no longer exist, the CGE model accounts for how prices adjust and resources (including labour) are reallocated to other areas of the economy. By comparison, the I-O study is static, and assumes that every dollar of expenditure, and every person employed would disappear if not for the RUN university. This means that the I-O model *over-estimates* the impact of the RUN university.

The CGE model treats regions as part of the broader Australian economy.

This means that the removal of a RUN university would lead to a negative impact on the region but a (small) positive impact on the rest of Australia. This is because resources and labour leave the regions and get redeployed elsewhere in Australia. By comparison, the I-O study treats regions in isolation so the removal of a RUN university leads to a negative impact on the region, but also a negative impact on the rest of Australia. The impact on the rest of Australia should be used with caution as it necessarily entails the double-counting of economic benefits.

The CGE model appropriately attributes the RUN's impact on other industries.

The CGE model will takes into account how the presence of the RUN university might result in an intermediate or indirect impact on other industries. By comparison, the I-O model presents the totality of the intermediate or indirect impacts on other industries as being attributable to the presence of a RUN university.

CGE modelling results are between the 'indirect' and 'induced' Input-Output results.

Input-Output analysis allows for the measurement of several key economic multipliers including the direct contribution to GDP per dollar of output and the flow-on indirect production effects and induced household expenditure effects. While CGE modelling is not directly comparable to Input-Output analysis, it produces results within the range of the various Input-Output measurements. The table below is a summary of the economic multipliers derived from the National 2017-18 Input-Output Tables¹ and represents on average the value-added per dollar of output² produced by all Australian universities.

DIFFERENT ECONOMIC MULTIPLIERS FROM INPUT-OUTPUT ANALYSIS

Direct value-added per dollar of revenue	Value added per dollar of revenue from direct effects and the flow-on indirect production effects (I-O Type I multiplier)	<i>Value added per dollar of revenue implied from CGE modelling</i>	Value added per dollar of revenue from direct effects, the flow-on indirect production effects and induced household expenditure effects (I-O Type II multiplier)	Value added per dollar of revenue implied from other economic impact studies in the tertiary sector ³
0.63	0.90	<i>0.95</i>	1.084	1.3-1.5

The CGE modelling produces a ratio of 0.95 of value-add per dollar of revenue which is higher than a Type I (indirect) multiplier but below the Type II (induced) multiplier derived from the Input-Output analysis. As it takes into account the reallocation of resources in the region due to the closure of the university, CGE modelling is expected to produce lower economic impacts than Input-Output analysis commonly reported. Input-Output analysis assumes that resources are not reallocated and disappear from the economy due to the closure of the university.

These economic impact studies use a mixture of methods including IO analysis and other econometric methods. The range of implied value-added per dollar of revenue reflects the broad range of economic effects that can be measured.

¹ABS catalogue no. 5209.0.55.001

²It is assumed that revenue is a proxy for university output.

³Studies include [JCU Economic and Human Capital Impact](#) and [Economic Impact Report: CSU](#). The multipliers from some studies such as [The economic impact of Go8 universities](#) could not be reconciled with the typical range of Type I or Type II multipliers.



— About Nous —

Nous Group is an international management consultancy operating in 10 locations across Australia, the UK and Canada.

For over 20 years we have been partnering with leaders to shape world-class businesses, effective governments and empowered communities.



— About CoPS —

Victoria University's Centre of Policy Studies is a world leader in Computable General Equilibrium economic modelling.

Researchers at the Centre of Policy Studies (CoPS) have a forty year history of continuous achievement in the development, application and dissemination of economic models. Their clients include: Australian federal and state government departments; private firms and universities around the world.