Regional Economic Benefits of International Students in Australia

Final Report

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There is a recognised need for a clearer ways of accounting for the economic benefits of international students in Australia, particularly at the regional level.

1. Benefits from international students are underappreciated	2. Policy intervention requires more granular and robust data	3. Lack of consistent reporting undermines validity and reliability
International education generates numerous economic and social benefits but these are not always appreciated by the wider community. International students are at times maligned due to misperceptions that they displace university places and jobs. Better evidence and data that can help promote the value of international education, particularly its economic contribution at a regional level, is a powerful measure to dispel potentially damaging misconceptions.	To make evidence-informed policy interventions, there is a need for a higher degree of data granularity regarding the benefits of international students. Data that is mapped to SA3 or SA4 regions will allow local, state and national government and industry bodies to make better, more targeted policy and strategic choices.	Disparate data sources exist to measure the size and scale of the international education sector in Australia. Some of these are at the national level, others at the regional. There is however no single acknowledged source of truth for clear and consistent accounting of benefits. There is strong demand however for access to evidence across Australia to help consistently account for, and regularly communicate, the benefits of international education at regional levels.

IEAA, Nous and VU CoPS were commissioned under an EGI grant to develop a regional economic tool to meet this need.

Project overview

A consortium consisting of the International Education Association of Australia (IEAA), Nous Group (Nous) and Victoria University Centre of Policy Studies (VU CoPS) were commissioned under a Department of Education Enabling Growth and Innovation (EGI) grant to develop a tool to model the regional economic benefits of international students.

This project seeks to meet the data consistency and availability gaps identified in the previous slide by:

- determining a consistent, robust and evidence-based methodology to determining regional economic benefits of international students across all sectors

- determining a method to easily and consistently visualise regional economic data for the sector to utilise as desired

Project output

There are two key outputs that stem from this project:

- an online interactive tool that allows users to disaggregate economic benefits of international students at a regional level

- this report that outlines the inputs and overarching results

Project governance

The core project was led by IEAA with Nous and VU CoPS providing management, analysis, and modelling support. This project was overseen by an expert steering committee consisting of six experts across the international education spectrum.

The project governance structured is outlined below.
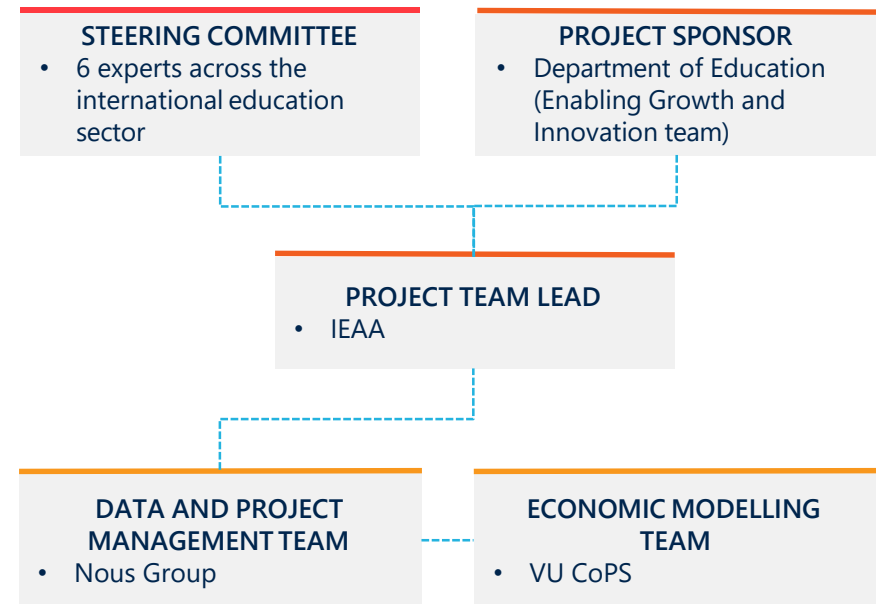
STEERING COMMITTEE
- 6 experts across the international education sector

PROJECT SPONSOR
- Department of Education (Enabling Growth and Innovation team)

PROJECT TEAM LEAD
- IEAA

DATA AND PROJECT MANAGEMENT TEAM
- Nous Group

ECONOMIC MODELLING TEAM
- VU CoPS

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International students contribute $34bn in export income, which is one method to analyse their benefit to Australia.

Export impact is the combination of fees and living expenses that international students provide to the Australian economy. This amounted to $34bn across Australia. This is one measure of the benefit that international students provide to regional economies. This figure reflects ABS reporting of the value of international students.

This figure however only accounts for a small number of benefits provided by international students. This figure also does not reflect the ultimate impact international students have on the economy as it does not take into account the various adjustments that occur in the economy as revenue from students is removed or introduced into a region.

Export value generated by international students by jurisdiction (2018)
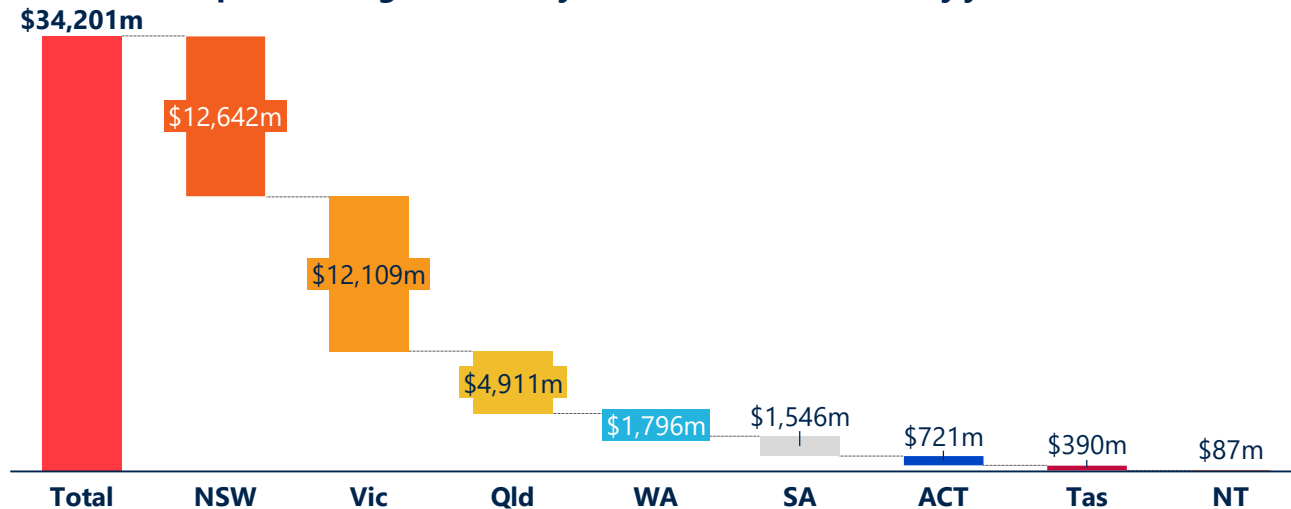
	NSW	Vic	Qld	WA	SA	ACT	Tas	NT
PERCENTAGE CONTRIBUTION TO EXPORT VALUE	36.96%	35.41%	14.36%	5.25%	4.52%	2.11%	1.14%	0.25%

In 2018, the number of international student enrolments equalled **869,709** across all sectors.

These students contributed **$34.2 billion** in total export value

This project has focused on modelling the actual economic impacts of international students on regional economies.

A three step process was undertaken to model and visualise the economic benefits of international students at a regional level. This is outlined in below.

1. DIRECT AND INDIRECT INPUTS	2. ECONOMIC MODEL	3. FINAL OUTPUT VISUSALIATION
A select number of inputs based on materiality have been selected to be inputted into the model.	The model analyses the flow on impacts of these inputs throughout regional economies	Final outputs (expressed in terms of GDP, employment and household consumption) will be visualised in an online tool.
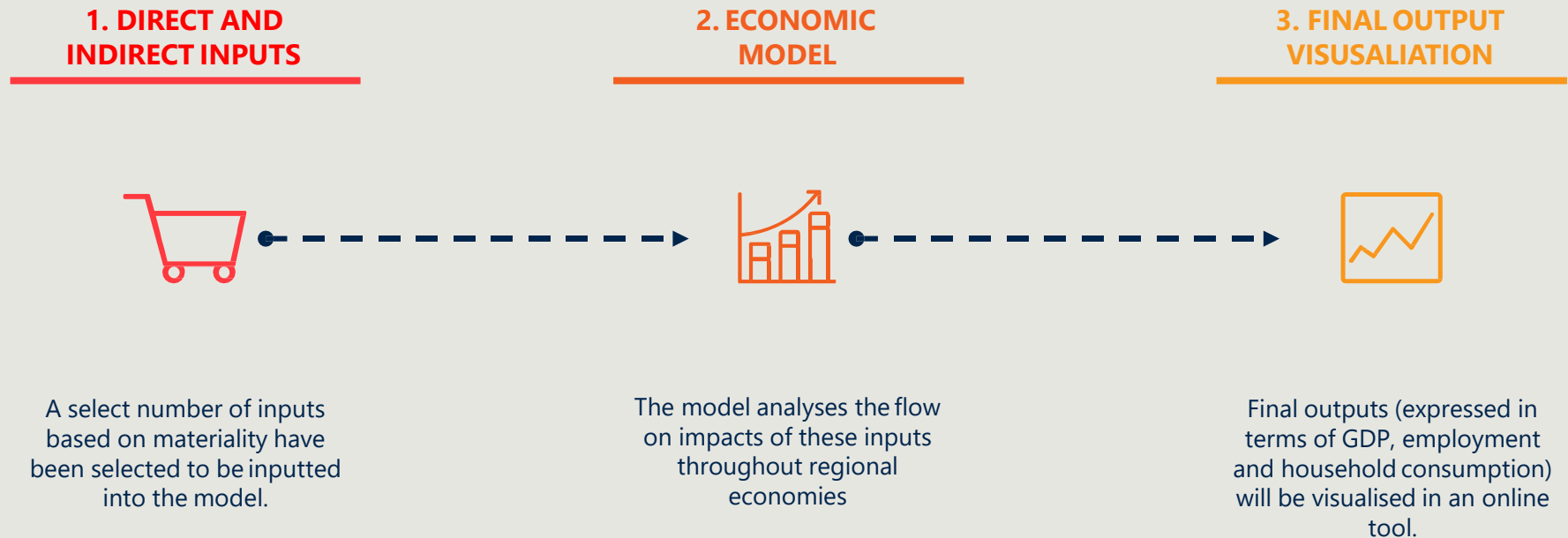
International students provide a range of direct and indirect benefits to Australia.

International students provide a range of benefits to the economy. These are financial in nature, as well as social and cultural. Some of the key benefits we identified are detailed in the diagram below.

Individual students
Education Institutions
Visiting friends and family
Economy wide

Individual students contribute to economic activity via a number of channels:
- Tuition fees (high school; ELICOS; VET; higher education)
- Living costs (basket of regular weekly goods; utilities; transport; housing)
- Visa costs
- Contribution to employment
- Contribution to tax revenue

Education institutions with a high number of international students contribute to economic activity via factors such as:
- Innovation through research and development
- Boosting demand for regional infrastructure
- Improving Australia's international reputation

Visiting friends and family contribute to the Australian economy in the following ways:
- Tourism benefits (flights, accommodation, consumption)
- Visa costs
- Improving Australia's international reputation

Economy wide benefits flow on from the previous three categories and are felt by the Australian economy over time:
- Flow on effects from all of the above on GDP and employment.
- Improved workforce participation for those students who stay in Australia
- Productivity gains for the regions of employment
- State and federal tax revenue
- Cultural Exchange

While the benefits of international students cut across many levels, this project targets a select few.

The benefits selected for the purpose of this project are outlined below. The methodology for determining the economic impact of each of the below categories is explored in section 3.

Cost of living	Tuition fees	Employment	Visiting friends and relatives
Cost of living refers to the daily expenditure of students as they study in Australia, excluding fees and course related costs.	*Tuition fees refer to the course costs students are required to pay to study at any institution across the four sectors.*	*Employment work refers to the proportion of students that undertake part-time work while studying in Australia.*	*Visiting friends and relatives (VFR) refers to those tourists that arrive in Australia for the purpose of visiting an International student.*

Cost of living

This is a significant financial input that is generated as international students study in Australia. Total cost of living in 2018 contributed $19.9bn across all regions. This equated to an average living cost of $21,953 per student. The sector in which each student studies, and the amount of weeks they live in Australia, has a bearing on total living cost per student.

International students actively analyse and compare living costs between cities and regions in making study destinations.

Tuition fees

Tuition fees is also a significant financial input into regional economies. Total tuition fees in 2018 accounted for $15.1bn across all regions. This equated to an average tuition fee of $17,367 per student. The type of course and institution selected has a significant bearing on this average fee however.

Similarly, tuition fees are a key factor that students take into consideration when deliberating on study destinations.

Employment

A significant number of students work part time to support themselves while studying in Australia. This helps contribute to regional economies by boosting overall employment and providing students with greater income to spend.

International students generated $1.89 billion across all regions in Australia. Student's nationality and sector of study has a bearing on the proportion of students that work, how many hours they work, and the income they earn.

Visiting friends and relatives

The tourism benefit generated from VFR is sizeable. VFR who visit often stay for multiple nights and spend a substantial amount in regions.

Over 300,000 VFR arrived in Australia in 2018. More people visit higher education students than all other students. Visitors contributed $792m to all regions across the economy. This equates to an average spend per visitor of approximately $2,500 in accommodation and other tourism expenses.

A number of modelling techniques have been used in the past to quantify the economic benefit of international students.

Three key modelling approaches were considered initially for this project: 1) Export Impact approach, 2) Input-Output Model, 3) Computational General Equilibrium (CGE) Model. These are presented below.

Low fidelity and less robust ← → High fidelity and more robust

	Export Impact approach	Input-Output (IO) Model	CGE Model
Overview	The export approach calculates the 'economic value' that international students bring to an economy by adding up the fees and living cost per student, and multiplying it by total enrolments. Export revenue figures are also used in this approach to derive the number of direct and support within an economy.	The I-O method uses multipliers that reflect the interdependencies between different sectors of the economy. For example, an increase in international students in a region leads to an increase in housing expenditure and consumption. These models effectively assume there is no constraint on the industry expanding supply to meet the increase in demand.	CGE models are able to account for significant interdependencies between sectors of the economy without double-counting the impacts. By modelling the lag-time and behavioural responses of different industries, CGE models are able to estimate the impact of a shock over both the short-run and the long-run.
Previous use	Most notably this approach has been used by NAFSA, the Association of International Educators in the US to highlight the economic value, as well as the immeasurable academic and cultural value, that international students bring to US campuses and local communities. There are a limited number of variables included in the model, which hinders in-depth analysis.	This approach to analysis has been used previously in Australia and the UK to model the economic benefits of international students. However, the assumption that supply can adjust to any changes in demand without a corresponding increase in the price of inputs ignores real-life economic constraints and therefore tends to lead to overstated end impact figure.	CGE modelling is the preferred method used by most central government agencies as it is considered to be more accurate. CGE models avoid double-counting that can occur through other methods. CGE models are able to account for the flow-on effects that international students in a region have on local, state and national economies.

A CGE model was chosen to model economic benefits at a regional level as it produces realistic, accurate and defensible results.

As noted in the previous slide, a variety of models can be used to model the economic value of international students at a regional level. Several were considered for this project, with the end model selected being a Computable General Equilibrium (CGE) model.

In particular, the CGE model used was Victoria University's (VU) multi-region CGE model.

The benefits of CGE, and of VU's specific model, are as follows:

- When international students are removed from the economy, the model takes into account how prices adjust and how resources, including labour and capital, are reallocated to other parts of the economy. Other models are more static and assume that resources are not reallocated which is not reflective of the real economy.
- The CGE model treats regions in Australia as part of the larger Australian economy. This means that the CGE model can measure the interactions at both the regional, state and national level and avoids double counting at each of these levels. Other models treat regions in isolation which results in a level of double-counting occurring when results are viewed at a state or national level.
- VU's CGE model in particular has an in-built tourism component unlike many other CGE models. This means that the model more accurately reflects the VFR contribution.

The combination of these benefits means that a CGE model ultimately produces more realistic and accurate data to value the regional benefits of international students.

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Regional enrolment data provided by the Department of Education formed the foundation of the economic model.

869,709

international student enrolments in Australian education providers in 2018

479,816

international students commenced studying in Australia in 2018

The 2018 international student data set was used as the basis to which all other data was joined to determine economic benefits of international students.
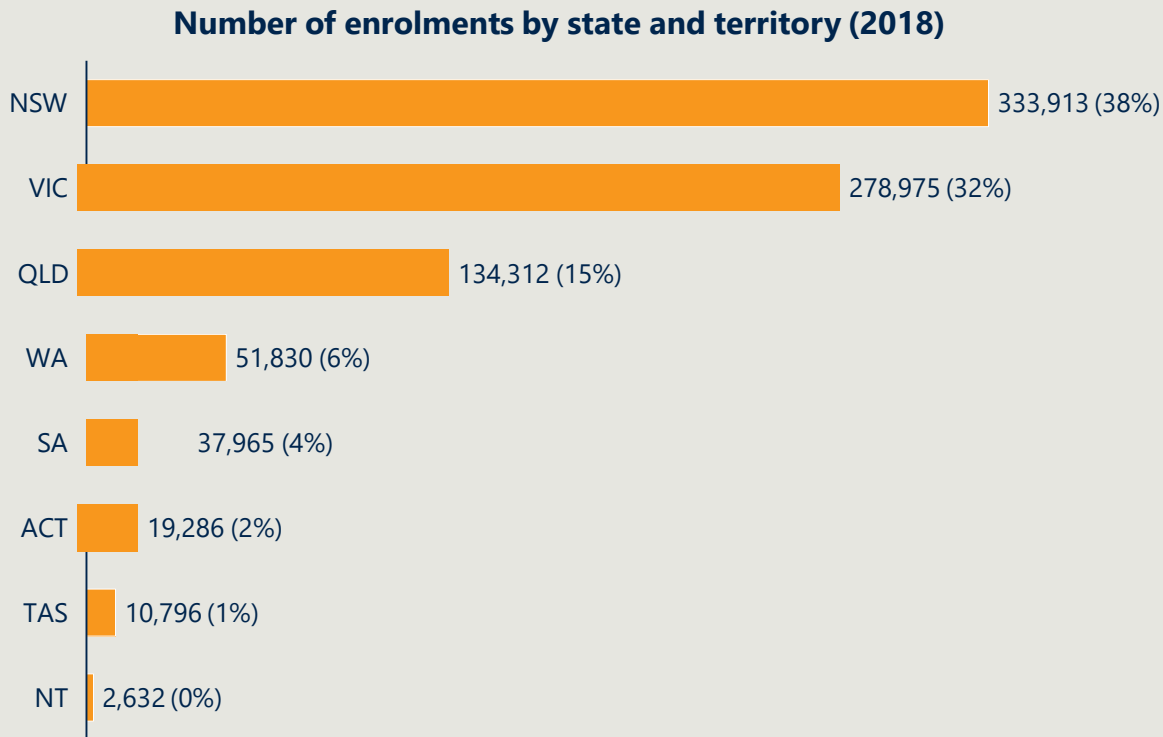
The dataset provided by the Department of Education and Training is comprehensive. It provides a breakdown of international student enrolments and commencements by a range of factors including:

- Nationality

- Sector

- Level of Study

- Broad Field of Education

- Geographical location

The geographical location aspect of the dataset allowed enrolments to be mapped to various levels of geographical granularity for the purposes of this project. These levels of granularity include SA1, SA2, SA3, SA4, State, electoral division and ABS remoteness area.

Source: Department of Education and Training (2018) – *Enrolments Commencements ASGS data*.

The majority of international student enrolments in 2018 were concentrated in New South Wales and Victoria.

The graph below illustrates the number of international enrolments in each state and territory in 2018. The majority of these enrolments can be found in the major cities in these locations.
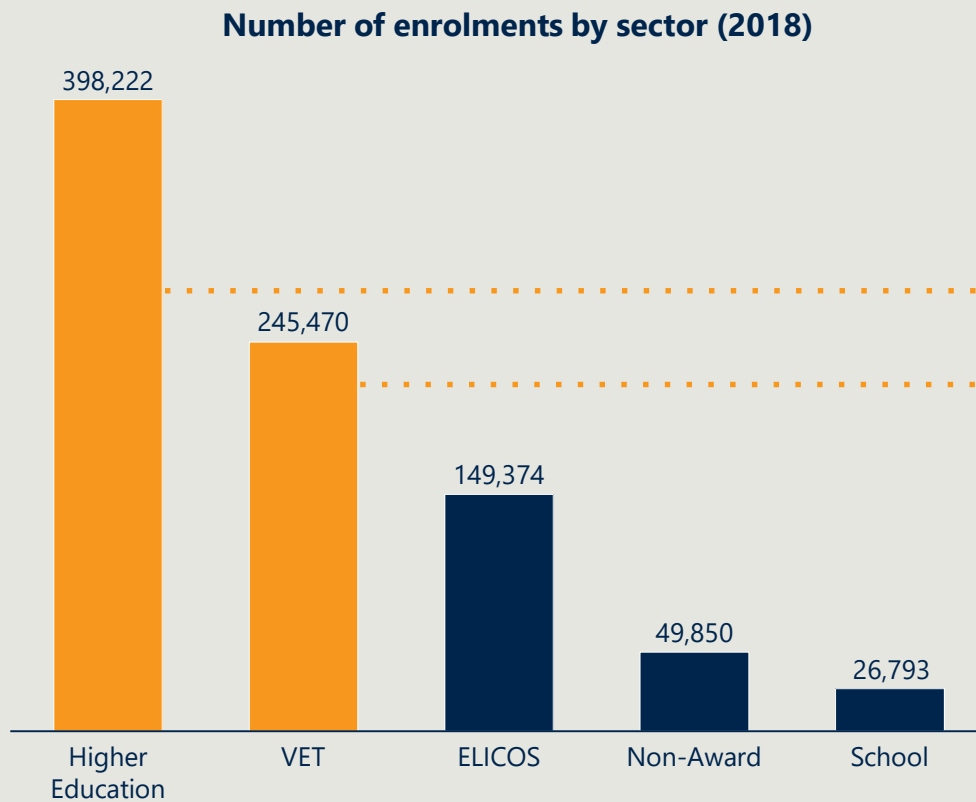
Number of enrolments by state and territory (2018)

State/Territory	Enrolments
NSW	333,913 (38%)
VIC	278,975 (32%)
QLD	134,312 (15%)
WA	51,830 (6%)
SA	37,965 (4%)
ACT	19,286 (2%)
TAS	10,796 (1%)
NT	2,632 (0%)

70% of international students are concentrated in New South Wales and Victoria

97% of international students are located in the major cities of Australia

Source: Department of Education and Training (2018) – *Enrolments Commencements ASGS data.*

The higher education sector has the largest number of international student enrolments.

Higher education enrolments are the largest across all sectors, followed by enrolments in the VET, ELICOS, non-award and schools sectors. The number of 2018 enrolments in each sector are detailed below.

Number of enrolments by sector (2018)

- Higher Education: 398,222
- VET: 245,470
- ELICOS: 149,374
- Non-Award: 49,850
- School: 26,793

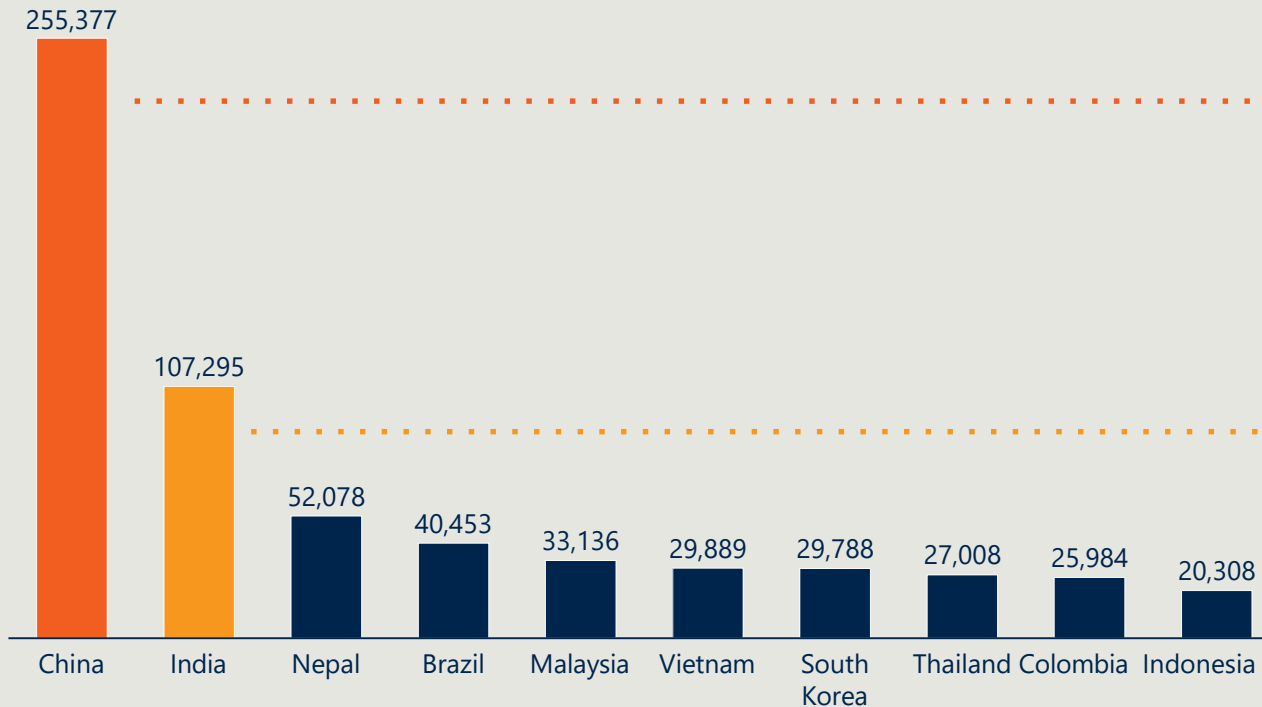**46%** of 2018 international student enrolments were in Higher Education sector.

The next highest was **28%** in the VET sector

Source: Department of Education and Training (2018) – *Enrolments Commencements ASGS data.*

International students from China make up the highest proportion of 2018 enrolments.

In total, international student enrolments in Australia are made up of 194 nationalities. The top ten countries of origin are provided below.

Number of enrolments by country (2018)

Country	Enrolments
China	255,377
India	107,295
Nepal	52,078
Brazil	40,453
Malaysia	33,136
Vietnam	29,889
South Korea	29,788
Thailand	27,008
Colombia	25,984
Indonesia	20,308

29% of 2018 enrolled international students were from China

12% of 2018 enrolled international students were from India

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$19.9 billion

was generated by international students cost of living expenditure across all regions in Australia.

$21,953

is the average yearly expenditure amount by international students across all regions in Australia.

Weekly expenditure and living costs across a basket of goods and services have been identified by state and region.

Cost of living refers to the daily expenditure of students as they study in Australia, exclusive of tuition fees and course related expenses.

The Western et al (2005) survey on international student spending was used as a base figure to estimate the impact that international students have on the demand side of regional economies through their weekly expenditure on goods and services. The survey was selected due to the representative nature of its sample of 4,000 international students studying in Australia broken down by citizenship, gender, sector and state. Expenditure covers categories such as housing, utilities, health costs and more. Figures have been updated with ABS CPI data from 2018 to ensure that they are reflective of spending in today's economy.

Weekly student spending was then differentiated by state, geographical location (metropolitan versus regional area); and sector. This is a reflection of the higher cost of living in some states relative to others; the differences in spending patterns according to the level of regionality; and the fact student spending patterns differ according to their sector of study.
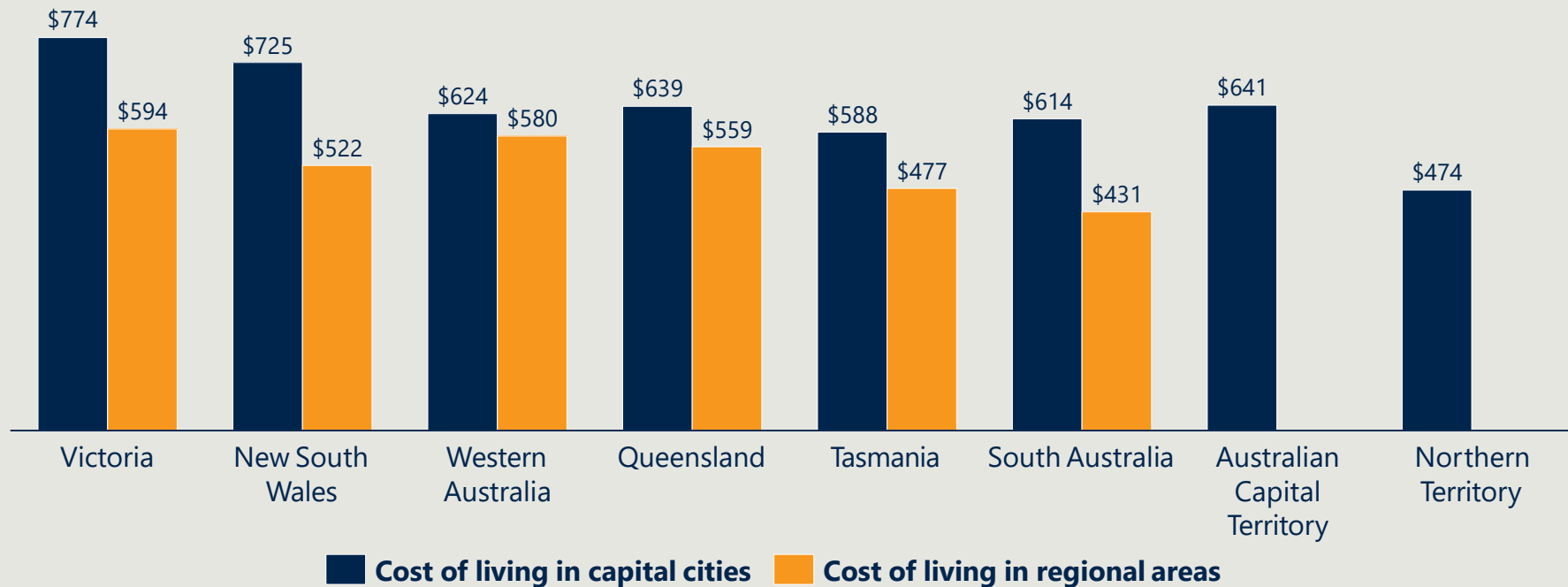
The difference in the estimated average spending patterns between metropolitan and regional areas in each state are drawn from the ratios within the Household Expenditure Survey (2015/16). These ratios, once derived, were triangulated and applied to the CPI adjusted Western et al (2005) expenditure categories.

Weekly expenditure per student are highest in Victoria and New South Wales.

Weekly living costs are highest in Melbourne where students on average pay $774 per week, and lowest in the Northern Territory where students pay on average $474 per week, split across several expenditure items outlined in the following slide. Cost of living has been divided between capital city and regional areas in each state. ACT and NT have a single figure, in line with the Household Expenditure Survey disaggregation.

Cost of living per week by state, divided by capital city and regional areas (2018)

State	Capital city	Regional areas
Victoria	$774	$594
New South Wales	$725	$522
Western Australia	$624	$580
Queensland	$639	$559
Tasmania	$588	$477
South Australia	$614	$431
Australian Capital Territory	$641	
Northern Territory	$474	

■ Cost of living in capital cities   ■ Cost of living in regional areas

Sources: Western et al (2005), *Final Report of the Survey of International Students' spending in Australia* – Report for the Department of Education, Science and Training; Australian Bureau of Statistics (2018) Table 5 Cat. 6401.0 – *CPI: Groups, Index Numbers by Capital City, Australia;* Australian Bureau of Statistics (2016) – Cat. 6530.0 – *Household Expenditure Survey Results (2015-2016);*

Weekly expenditure is made up of the below basket of goods.

Due to a separate assumption on fee and course-related expenditure, the below basket of goods excludes the 'course related expenses' that were reported in the Western et al (2005) survey. Due to the small sample of students studying in NT at the time of the survey, spending proportions for NT are drawn from the Household Expenditure Survey. The below table shows the split in basket of goods by state and by capital city (C) and regional areas (R).

	NSW ($)		VIC ($)		QLD ($)		SA ($)		WA ($)		TAS ($)		ACT ($)	NT ($)
	C	R	C	R	C	R	C	R	C	R	C	R	C	C
Housing	223	144	210	137	203	200	207	130	153	122	176	142	199	130
Food and Groceries	181	135	204	166	144	119	142	112	150	143	129	105	182	106
Utility Costs	12	12	21	19	10	10	14	10	12	10	13	12	19	18
Health Costs	26	17	28	23	30	28	27	19	30	24	25	23	27	21
Telephone Costs	28	23	37	32	25	23	25	22	30	30	22	22	19	18
Car Costs	28	20	37	29	32	27	27	20	71	66	30	24	42	36
Transport	29	24	24	22	16	15	12	12	6	5	9	7	10	13
Entertainment	39	29	44	32	28	23	32	18	30	34	31	21	32	27
Alcohol and Tobacco	26	30	25	26	25	22	21	26	41	54	21	17	8	26
Clothing	15	11	20	13	15	10	15	9	12	12	13	12	6	12
Household goods	15	10	22	20	13	12	9	7	12	13	13	10	12	16
Travel	14	10	19	15	15	13	16	12	18	17	12	10	18	23
Other expenses*	89	58	83	60	83	56	67	35	59	51	94	72	67	42
Total weekly expenditure	725	522	774	594	639	559	614	431	624	580	588	477	641	488

*Other expenses include childcare, postal charges, hairdresser visits, gifts, air travel within Australia, and other uncategorised major expenses.

Weekly living costs are applied to the number of weeks a student remains in Australia while studying.

Analysis of average course lengths through CRICOS data, along with previous research into average course lengths informed the figures below for the average length of stay for a higher education, VET, and ELICOS/non-award student.

42 weeks

Number of weeks on average **higher education** students remain in Australia per year

26 weeks

Number of weeks on average **VET** students remain in Australia per year

13 weeks

Number of weeks on average **ELICOS** students remain in Australia per year

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Average fee levels per student are drawn from combined DET enrolment and CRICOS data

$15.1 billion

was generated by the fees paid to education institutions by international students

$20,713

is the average course fee paid by international students across all regions, institutions and sectors.

Data was scraped, cleaned, aggregated and mapped to enrolment data to provide a regional breakdown of fees paid per student.

Data scraping	Data cleaning	Data aggregation	Data mapping
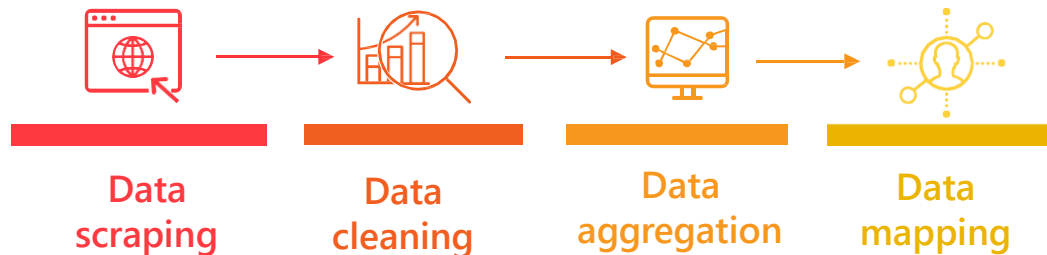
CRICOS fee data was web scraped to form a list of all courses and fields of education (FOE) offered to international students by education providers across the country. Data was then cleaned and assigned to its corresponding SA3 and SA4 to create a data set with information on course level, fees, duration and location.

Data aggregation involved averaging course fees and duration for each course level at four levels of locational granularity, dependent on data availability. The hierarchies of data granularity used is noted on the next page.

Fee and duration averages were then mapped to DET enrolment data to augment the dataset. The final dataset that was built into the model provided a breakdown of fees for 22 different course levels across the ELICOS, Schools, VET and Higher Education sectors. Fee levels were also differentiated by region and institution.

Enrolment data was mapped to corresponding locations through a hierarchy of granularity.
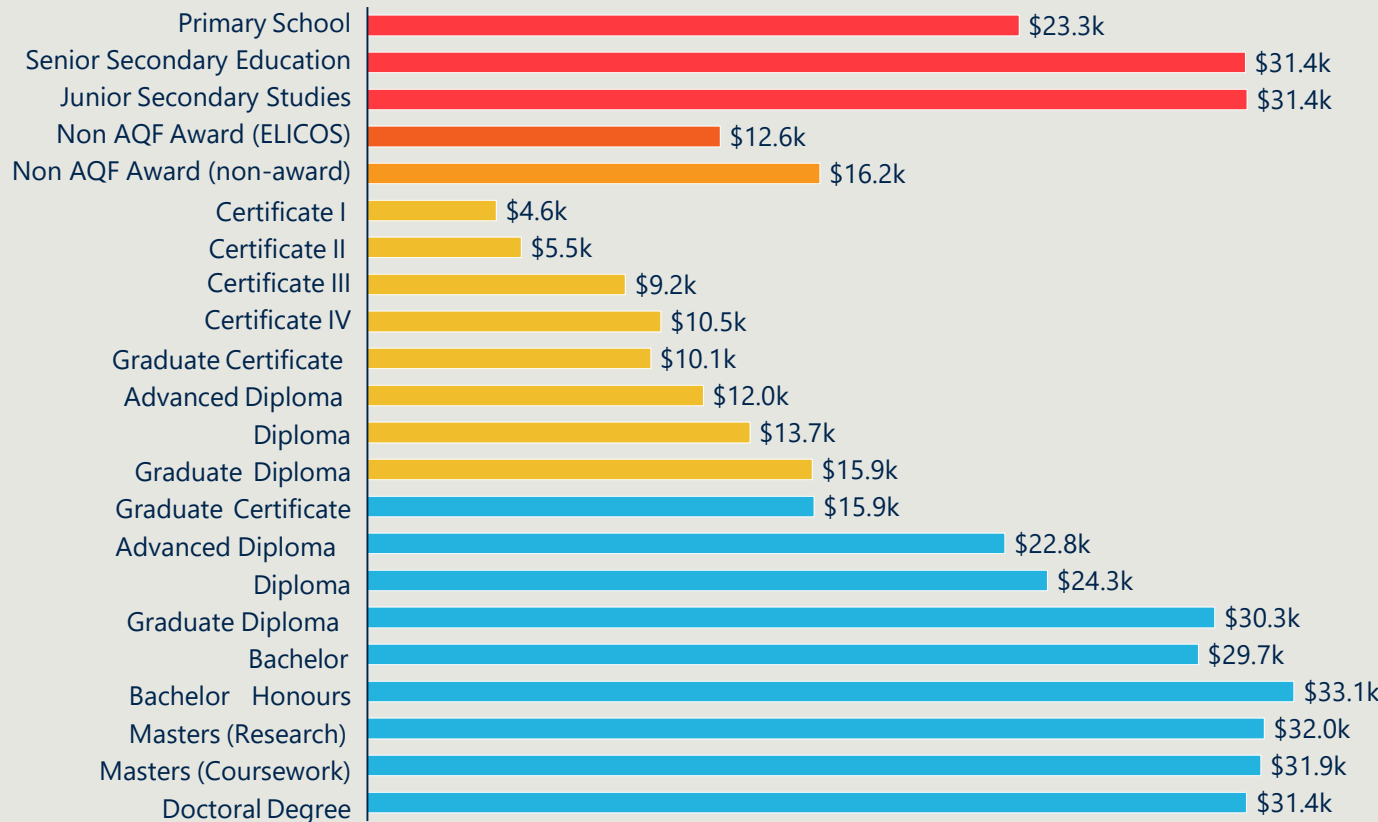
The data mapping exercise was carried out to match data at the greatest level of granularity and detail possible. For example, if fee and duration data was not available for a particular student at the SA3 and field of education (FOE) level, we move down to the next level: SA4 and FOE. Where FOE data was not available, we matched data to the course level. Outlined below is the full hierarchy of granularity and corresponding proportions.

|	Granularity	Example	Proportion	Number of courses = 4604
Most granular data match	SA3 and FOE	Enrolment data matched at Adelaide City (SA3) and a Bachelor degree studying in the Creative Arts (FOE)	56%	n=2593
	SA4 and FOE	Enrolment data matched at Adelaide Hills (SA4) and a Bachelor degree studying in the Creative Arts (FOE)	18%	n=842
	Remoteness Area by State and FOE	Major cities of South Australia (Remoteness Area) and a Bachelor degree studying in the Creative Arts (FOE)	14%	n=651
	State and FOE	Enrolment data matched at South Australia (state) and a Bachelor degree studying in the Creative Arts (FOE)	11%	n=489
	SA3 and Course	Enrolment data matched at Adelaide City (SA3) and a Certificate IV in VET (Course)	1%	n=29
Least granular data match	Remoteness area by State and Course	Major cities of South Australia (Remoteness Area) and a Certificate IV in VET (Course)	0.022%	n=1

Fees were computed across 22 course levels.

The average tuition fees by course level across Australia are illustrated in the graph below.

Average fees across Australia across all course levels (2018)

Course Level	Fee
Primary School	$23.3k
Senior Secondary Education	$31.4k
Junior Secondary Studies	$31.4k
Non AQF Award (ELICOS)	$12.6k
Non AQF Award (non-award)	$16.2k
Certificate I	$4.6k
Certificate II	$5.5k
Certificate III	$9.2k
Certificate IV	$10.5k
Graduate Certificate	$10.1k
Advanced Diploma	$12.0k
Diploma	$13.7k
Graduate Diploma	$15.9k
Graduate Certificate	$15.9k
Advanced Diploma	$22.8k
Diploma	$24.3k
Graduate Diploma	$30.3k
Bachelor	$29.7k
Bachelor Honours	$33.1k
Masters (Research)	$32.0k
Masters (Coursework)	$31.9k
Doctoral Degree	$31.4k

Legend:
- **Schools**
- **ELICOS**
- **VET**
- **Higher Education**
- **Non-Award**

Fees were calculated across 22 different course levels across the School, ELICOS, VET and Higher Education sectors. The final fees built in to the model were tailored by region and vary according to institutions.
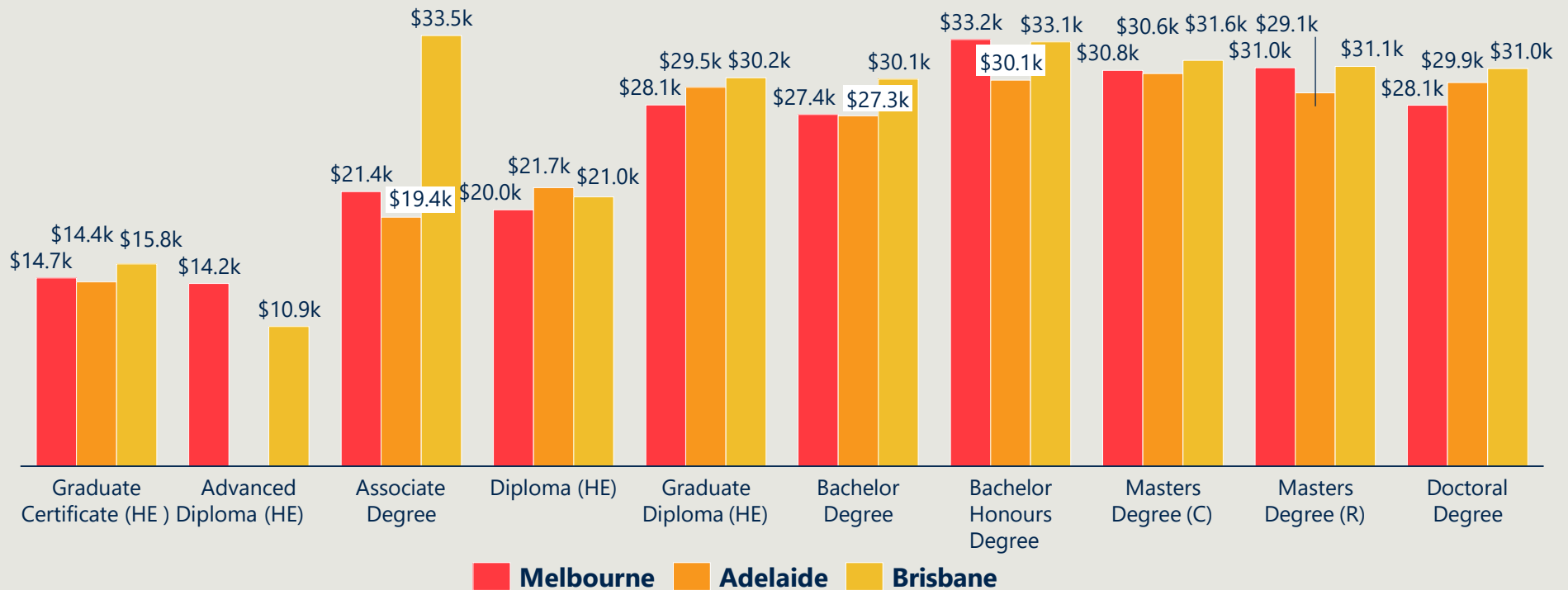
The figures to the left provide an overview of the average fees, across all regions for all sectors.
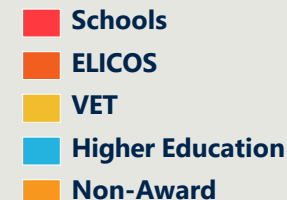
Fees paid by international students have further variance dependant on their location.

Fees across each of the 22 course levels in each region depended on the nature of the institutions in each region. An example of the differences in fees allocated is illustrated in the graph below.

Average fees across Australia across all course levels in three major capital cities (2018)

Course Level	Melbourne	Adelaide	Brisbane
Graduate Certificate (HE)	$14.7k	$14.4k	$15.8k
Advanced Diploma (HE)	$14.2k		$10.9k
Associate Degree	$21.4k	$19.4k	$33.5k
Diploma (HE)	$20.0k	$21.7k	$21.0k
Graduate Diploma (HE)	$28.1k	$29.5k	$30.2k
Bachelor Degree	$27.4k	$27.3k	$30.1k
Bachelor Honours Degree	$33.2k	$30.1k	$33.1k
Masters Degree (C)	$30.8k	$30.6k	$31.6k
Masters Degree (R)	$29.1k	$28.1k	$31.0k
Doctoral Degree	$31.1k	$29.9k	$31.0k

Melbourne   Adelaide   Brisbane

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Three specific variables were calculated to obtain employment rates and income earned.

$1.89bn

is the income earned by international students who worked part time while studying in Australia

35%

of international students work part time while studying in Australia

Three variables were calculated to determine income earned by international students: 1) proportion of students that work, 2) hours worked by students, 3) wages earned by students.

Proportion of international students that work

The basis of the calculations for proportion of international students that work was two DET surveys conducted in 2014. This identified the proportion worked by student's nationality, and by proportion worked both related and not related to field of study. While the two surveys distinguish between proportion of students that work both related and unrelated to their field of study, the survey does not provide the proportion of students that might have employment in both areas. To eliminate any possible double counting in the data, we estimated the proportion of students that work in both areas. Our analysis suggested that 2.1% of higher education students work in jobs both related and unrelated to field of study, and 16% of VET students work in jobs both related and unrelated to field of study.

These surveys provided a basis for part time work for students only in the Higher Education and VET sector. It was assumed that 25 percent of ELICOS students work, and that students in the schools and non-AQF award sector do not work.

Hours worked by international students

The basis for calculations for hours worked by international students similarly was one of the 2014 DET surveys. This survey provided the proportion of students by nationality and sector that work in a banded range (e.g. 1-5 hours,. 5-10 hours etc). We took a weighted average of these figures to calculate hours worked.

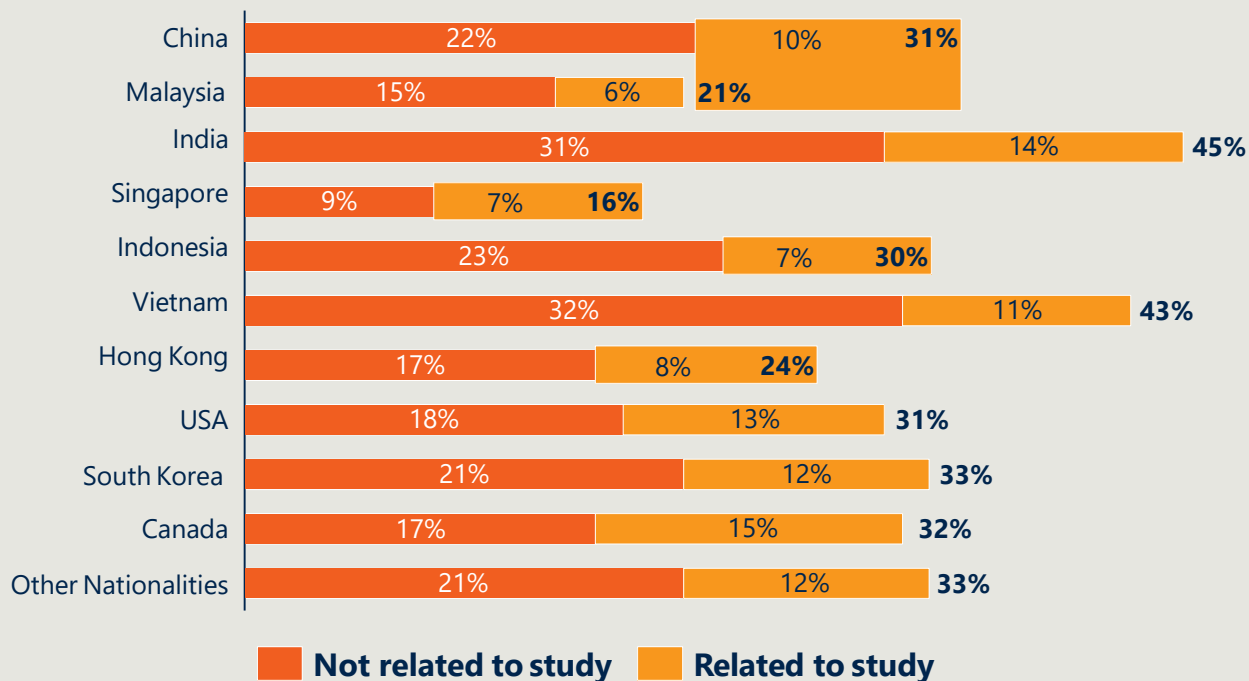**Wages earned by international students**

Wages earned for students in jobs related to field of study was set at the hourly rate of a common graduate level job in the specific field of education they were studying. Wages earned for students in jobs unrelated to field of study was set at the minimum wage rate.

Sources:: International Student Survey 2014 Overview Report (https://internationaleducation.gov.au/research/research-papers/Documents/ISS%202014%20Report%20Final.pdf; International higher education student satisfaction with opportunities for work experience and employment in Australia (https://internationaleducation.gov.au/research/Publications/Documents/Employment%20report.pdf)

Higher education students on average work proportionately more in jobs not related to their field of study.

Indian and Vietnamese students worked the longest hours both in jobs related to their field of study, and jobs not related to their field of study. The proportion of higher education students that work across a number of nationalities is highlighted in the graph below.

Proportion of higher education students that work in jobs both related and unrelated to their field of study

Nationality	Not related to study	Related to study	Total
China	22%	10%	31%
Malaysia	15%	6%	21%
India	31%	14%	45%
Singapore	9%	7%	16%
Indonesia	23%	7%	30%
Vietnam	32%	11%	43%
Hong Kong	17%	8%	24%
USA	18%	13%	31%
South Korea	21%	12%	33%
Canada	17%	15%	32%
Other Nationalities	21%	12%	33%

Legend: Not related to study / Related to study

24% of Higher Ed students work in jobs unrelated to their field of study

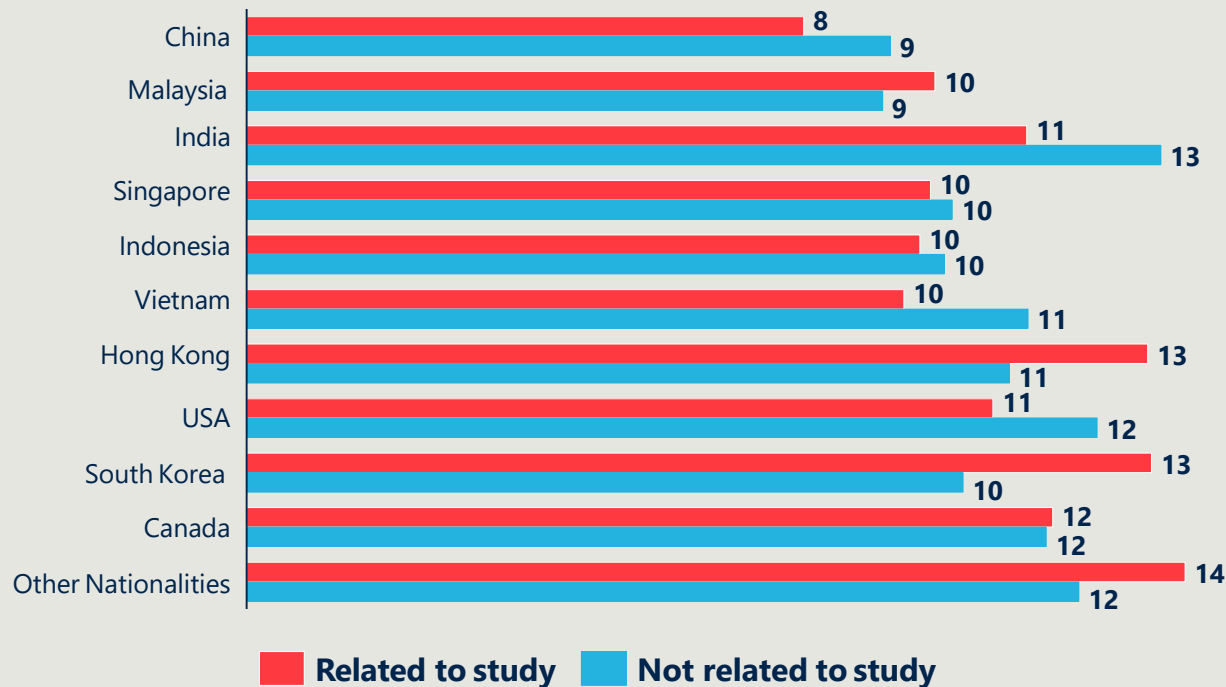**12%** of Higher Ed students work in jobs unrelated to their field of study

30

Higher education students on average work 11 hours per week.

Indian students work the longest on average in jobs unrelated to their field of study. Hong Kong, South Korean and all Other Nationalities on average work longer hours in jobs related to study. The number of hours higher education students work across a number of nationalities is highlighted in the graph below.

Average number of hours higher education students work in jobs both related and unrelated to their field of study

Country	Related to study	Not related to study
China	8	9
Malaysia	10	9
India	11	13
Singapore	10	10
Indonesia	10	10
Vietnam	10	11
Hong Kong	13	11
USA	11	12
South Korea	13	10
Canada	12	12
Other Nationalities	14	12

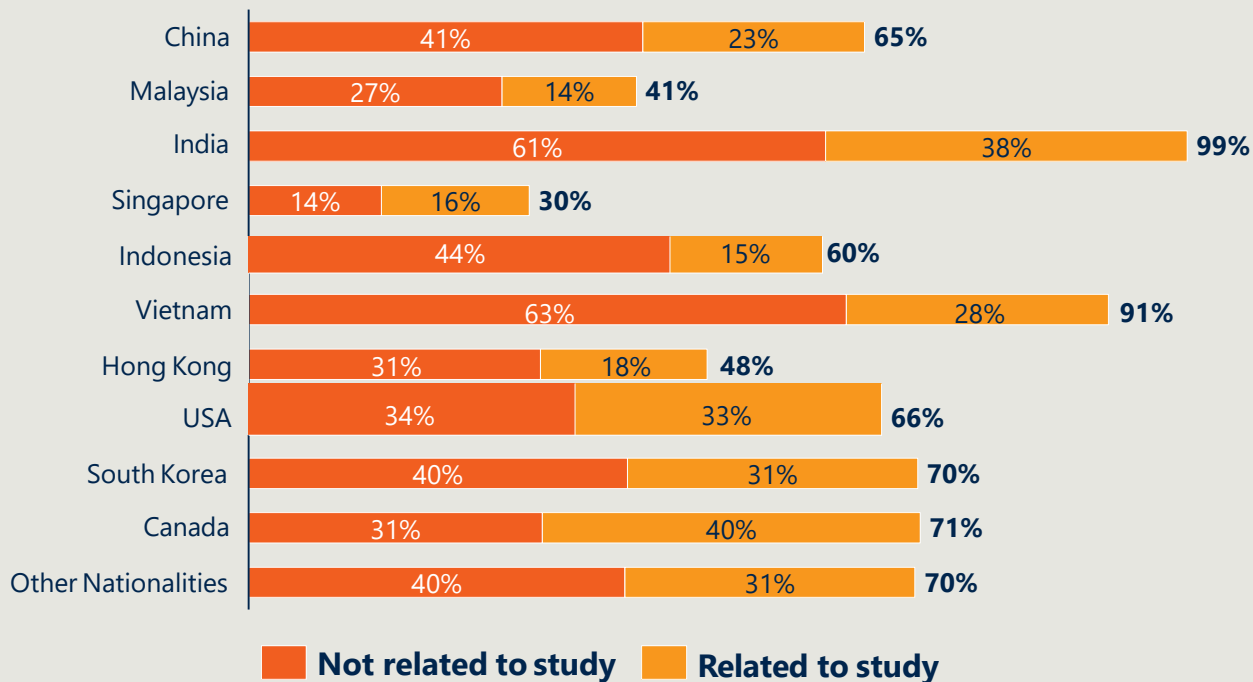**Legend:** Related to study | Not related to study

11 hours - the average number of hours higher ed students work in jobs related to their field of study

11 hours - the average number of hours higher ed students work in jobs not related to their field of study

A greater proportion of VET students work in jobs both related and unrelated to field of study as compared to higher education students.

Indian and Vietnamese VET students, similar to higher education students, have the largest proportion of students working in a job either related or unrelated to their field of study. The proportion of VET students that work across a number of nationalities is highlighted in the graph below.

Proportion of VET students that work in jobs both related and unrelated to their field of study

Country	Not related to study	Related to study	Total
China	41%	23%	65%
Malaysia	27%	14%	41%
India	61%	38%	99%
Singapore	14%	16%	30%
Indonesia	44%	15%	60%
Vietnam	63%	28%	91%
Hong Kong	31%	18%	48%
USA	34%	33%	66%
South Korea	40%	31%	70%
Canada	31%	40%	71%
Other Nationalities	40%	31%	70%

Not related to study   **Related to study**

50% of VET students work in jobs unrelated to their field of study

37% of VET students work in jobs related to their field of study

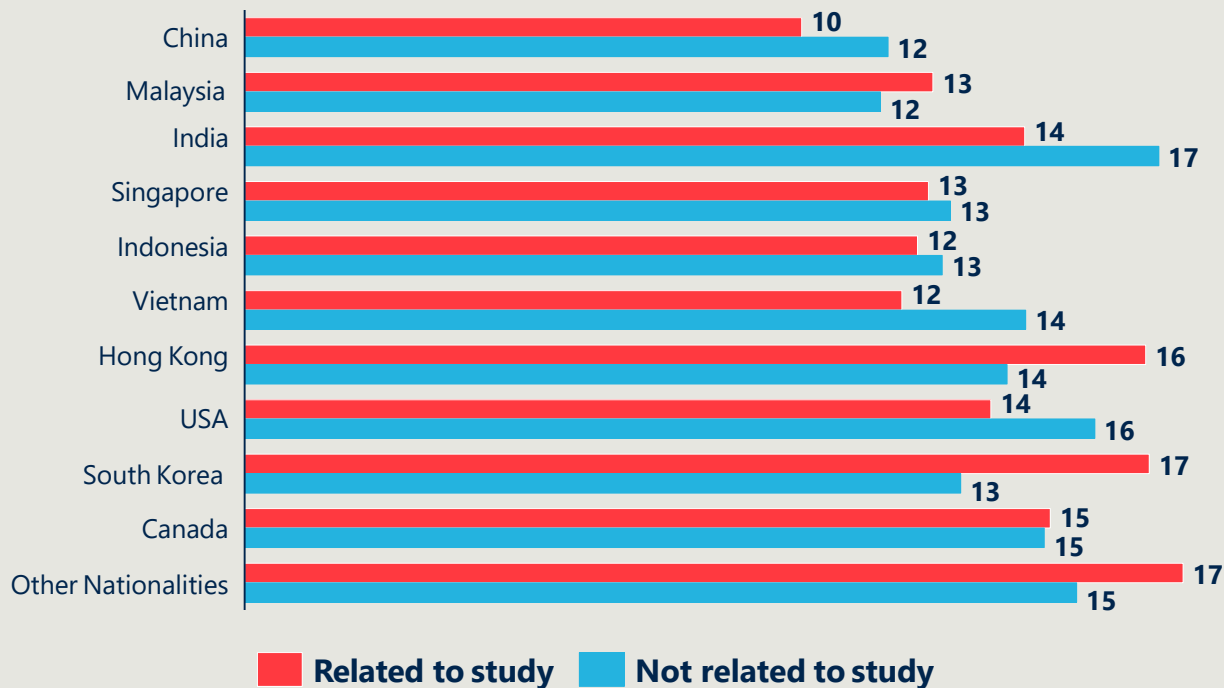# VET students across all nationalities on average work longer hours than Higher Education students.

Indian VET students, similar to Indian higher education students, work the longest hours in jobs unrelated to their field of study. South Korean, Hong Kong, and all Other Nationalities work the longest hours in jobs related to their field of study. The number of hours VET students work across a number of nationalities is highlighted in the graph below.

Average number of hours VET students work in jobs both related and unrelated to their field of study

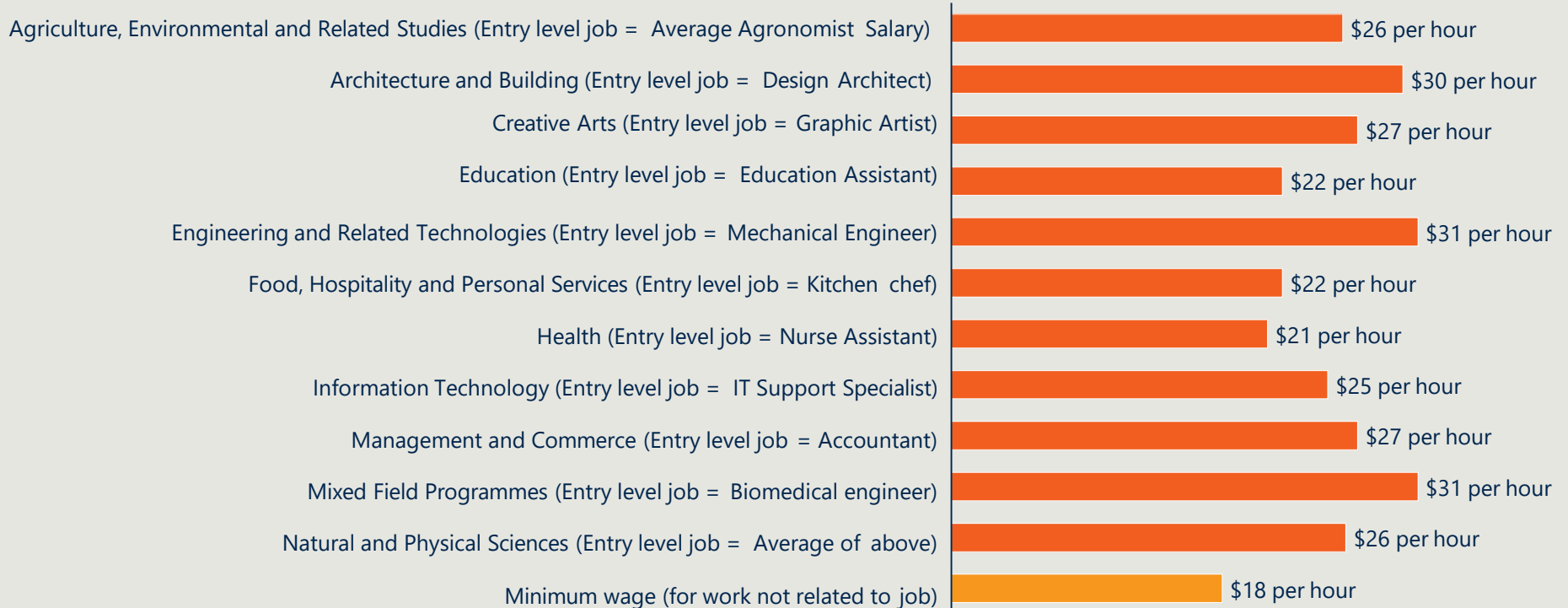| Nationality	Related to study	Not related to study
China	10	12
Malaysia	13	12
India	14	17
Singapore	13	13
Indonesia	12	13
Vietnam	12	14
Hong Kong	16	14
USA	14	16
South Korea	17	13
Canada	15	15
Other Nationalities	17	15

Related to study   **Not related to study**

16 hours - the average number of hours higher ed students work in jobs related to their field of study

15 hours - the average number of hours higher ed students work in jobs not related to their field of study

33

The wage rate of international students was allocated based on their broad field of education.

The data below illustrates the average wage allocated to students that work. This is based on their 'Field of Education level 2'. For instance, a student studying a degree in Creative Arts will receive a wage of $27 per hour if they work in a field related to their study. This has been determined by finding the average wage for an entry level in that field (in this instance being a graphic artist). For students working in fields not related to field of study, the minimum wage rate was used.

Field	Wage
Agriculture, Environmental and Related Studies (Entry level job = Average Agronomist Salary)	$26 per hour
Architecture and Building (Entry level job = Design Architect)	$30 per hour
Creative Arts (Entry level job = Graphic Artist)	$27 per hour
Education (Entry level job = Education Assistant)	$22 per hour
Engineering and Related Technologies (Entry level job = Mechanical Engineer)	$31 per hour
Food, Hospitality and Personal Services (Entry level job = Kitchen chef)	$22 per hour
Health (Entry level job = Nurse Assistant)	$21 per hour
Information Technology (Entry level job = IT Support Specialist)	$25 per hour
Management and Commerce (Entry level job = Accountant)	$27 per hour
Mixed Field Programmes (Entry level job = Biomedical engineer)	$31 per hour
Natural and Physical Sciences (Entry level job = Average of above)	$26 per hour
Minimum wage (for work not related to job)	$18 per hour

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The economic impact of visiting friends and relatives is substantial.

310,134

tourists came to Australia in 2018 for the purpose of visiting an international student studying in Australia

$792 million

was generated from the tourism activities of these visiting friends and relatives across all states and territories

Enrolment and tourism data were used to estimate the number of VFR in each state. These numbers were further broken down to provide an estimate of VFR who travel to metropolitan and regional areas.
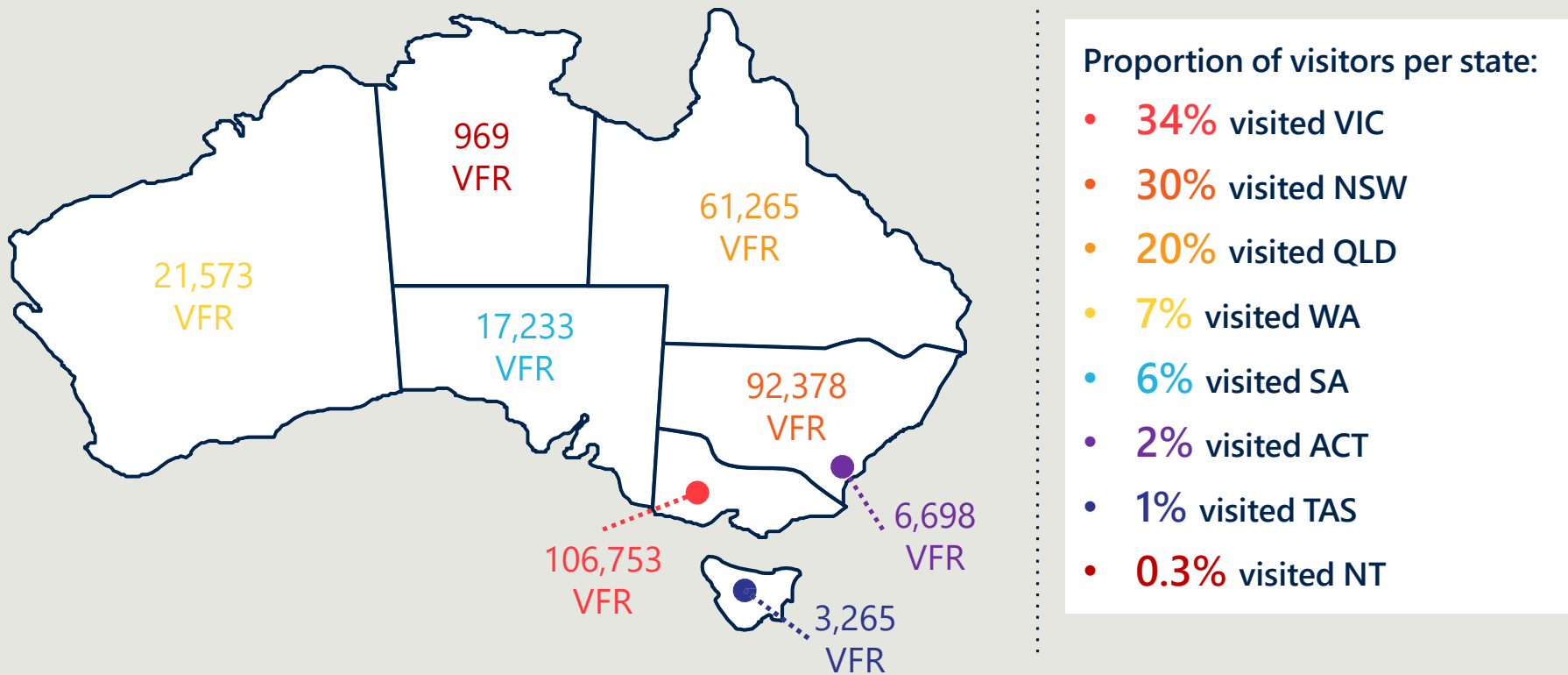
To incorporate the economic impact that VFR of international students have, we assume that they come to visit Higher Education, VET, ELICOS students. In order to estimate the variation in VFR at the sectoral level, we assume that VFR visit international students at a ratio of 1:2:4 for HE, VET, ELICOS.

Tourism Research Australia (TRA) International Visitor Survey data provides an estimate of **310,134** as the total number of tourists in Australia with the stated purpose of visiting an international student.

State based VFR figures were used as the basis to determine the average ratio of VFR per Higher Education, VET and ELICOS student in the state. To gain a further level of granularity, we used the shares of enrolment in capital cities and regional areas to estimate the distribution of VFR in each state across capital and regional areas.

The number of visiting friends and relatives arriving in states and territories mirrors the number of international students in the specific jurisdiction.

Of the over 300,000 visitors that arrived in Australia due to the presence of an international student, one third visited Victoria. The next highest visited state was NSW with 30% of visitors. The diagram below shows the total number and proportion of visitors by state and territory.

Proportion of visitors per state:

- **34%** visited VIC
- **30%** visited NSW
- **20%** visited QLD
- **7%** visited WA
- **6%** visited SA
- **2%** visited ACT
- **1%** visited TAS
- **0.3%** visited NT

Map labels:
- 969 VFR
- 61,265 VFR
- 21,573 VFR
- 17,233 VFR
- 92,378 VFR
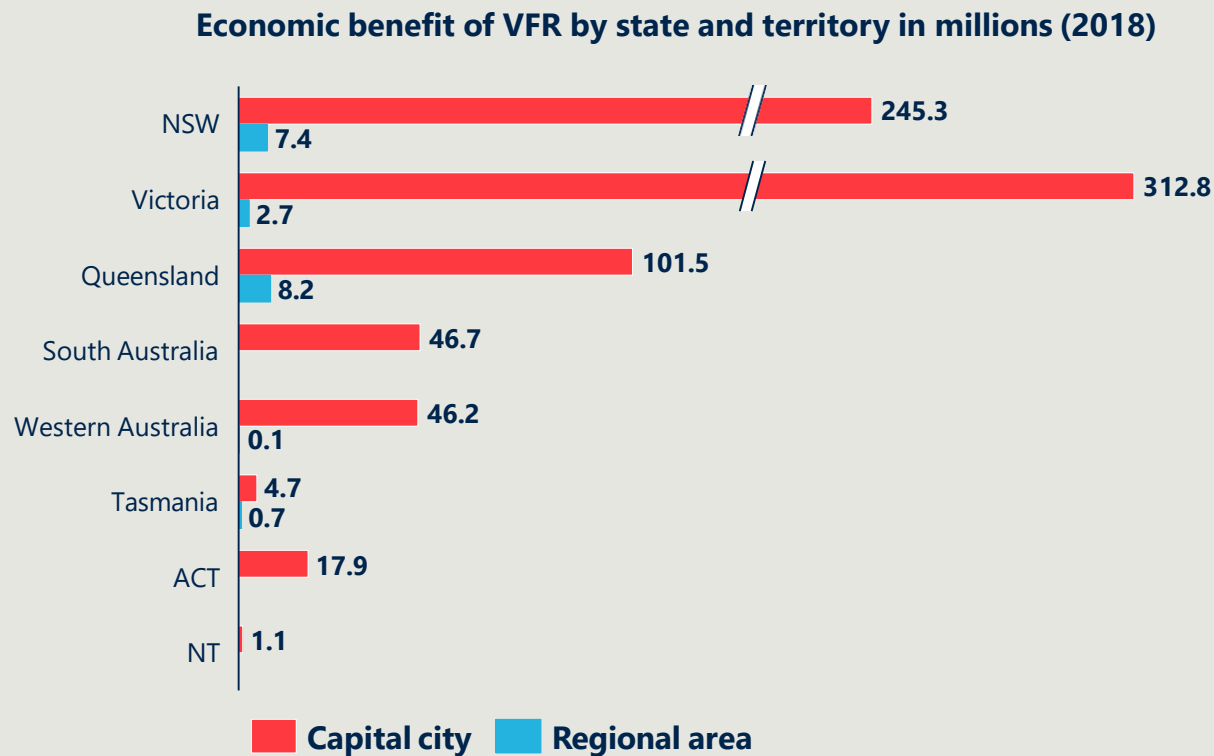- 106,753 VFR
- 6,698 VFR
- 3,265 VFR

We used the following ratios to determine the economic impact of VFR across sectors and location.

Where enrolment numbers were greater than 100, we were able to construct separate ratios for regional areas and capital cities as outlined in the table below. This table also outlines the share of tourism exports related to VFR due to international students,. As an example of how to interpret the below ratios: for higher education students in Sydney, for every 2 students, 1 friend or relative will visit.

State	Region	ELICOS ratio	VET ratio	Higher Education ratio	Share of Tourism Exports (%)
NSW	Sydney	7.94	3.97	1.99	2.62
	Regional NSW	9.13	4.56	2.28	0.70
Victoria	Melbourne	6.18	3.09	1.55	4.39
	Regional Vic	7.70	3.85	1.93	0.50
Queensland	Brisbane	4.75	2.38	1.19	3.78
	Gold Coast	4.22	2.11	1.05	1.35
	Regional Qld	4.79	2.40	1.20	0.27
South Australia	Adelaide	5.53	2.76	1.38	4.50
	Regional SA	5.53	2.76	1.38	0.00
Western Australia	Perth	6.24	3.12	1.56	2.35
	Regional WA	6.24	3.12	1.56	0.04
Tasmania	Hobart	7.34	3.67	1.84	1.48
	Regional Tas	8.77	4.39	2.19	0.36
ACT	ACT	7.67	3.84	1.92	3.21
NT	NT	7.48	3.74	1.87	0.80

The economic impact of visiting friends and relatives varies by state and territory, and by regionality.

VFR contribute close to $800 million to the Australian states and territories. The breakdown of this figure by state and territory is highlighted in the graph below.

Economic benefit of VFR by state and territory in millions (2018)

State/Territory	Capital city	Regional area
NSW	245.3	7.4
Victoria	312.8	2.7
Queensland	101.5	8.2
South Australia	46.7	
Western Australia	46.2	0.1
Tasmania	4.7	0.7
ACT	17.9	
NT		1.1

■ Capital city ■ Regional area

98% of VFR benefits are generated in capital cities

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Economic benefits have been modelled in 89 regions across all states and territories.

The CGE model used for this project includes 334 Statistical Area (SA) 3 regions. A number of these regions were aggregated on the basis that commuting between SA3 regions within a larger SA4 is common. Overall, 89 regions have been selected.

Each region is ascribed an individual shock to reflect the economic impact of an increase or decrease in the number of international students. The number of regions for which results are produced in each state is provided below.

33 regions in NSW	**22** regions in QLD	**15** regions in VIC
8 regions in WA	**5** regions in SA	
3 regions in NT	**2** regions in TAS	**1** region in ACT
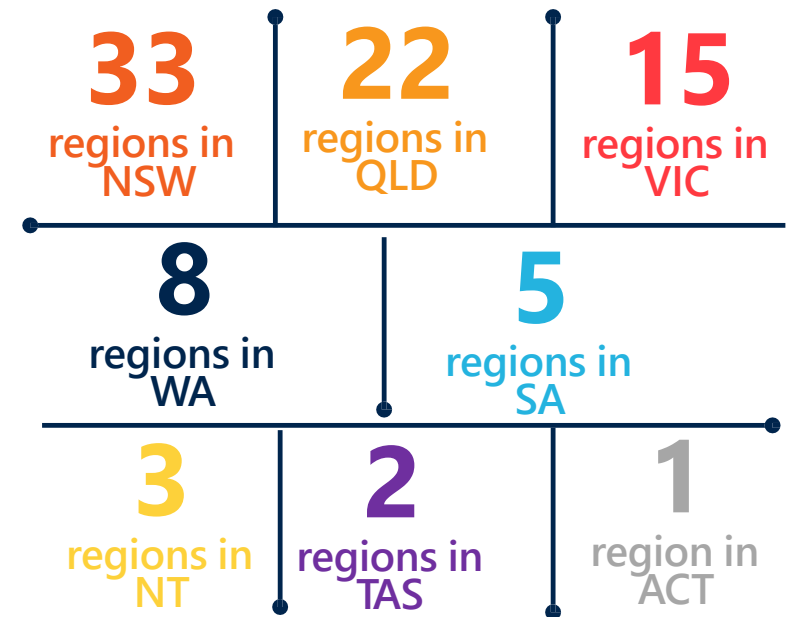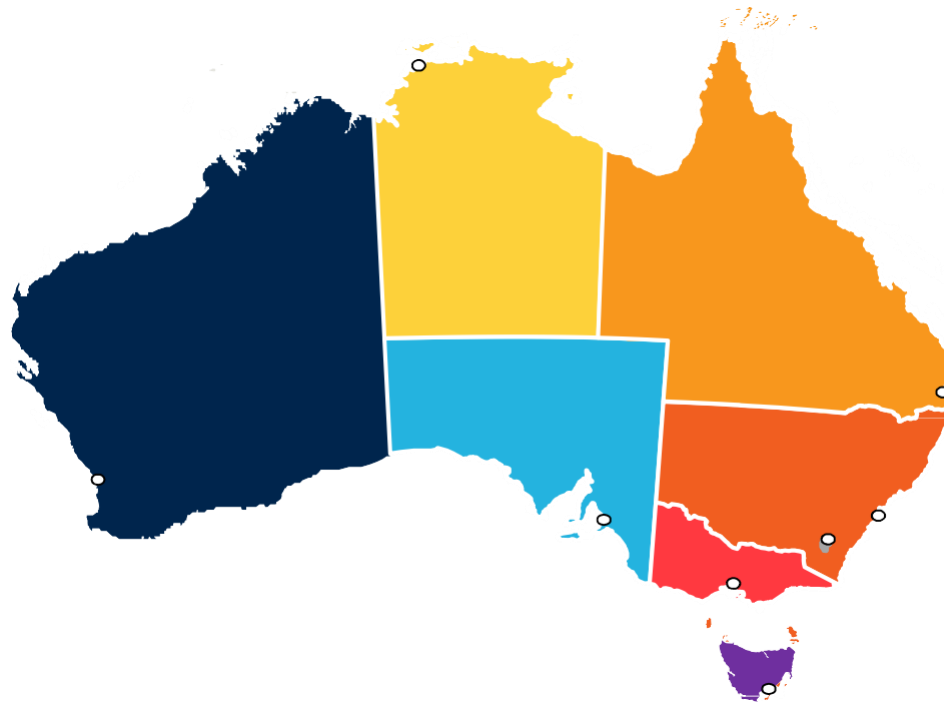
Three economic results have been modelled for each of the 89 regions: GDP, employment, and household consumption.

REAL GDP

Real GDP reflects the actual value of goods and services produced in a year and is a common measure of prosperity in a country. A loss or gain in education exports impacts the real GDP of a country.

EMPLOYMENT

Employment refers to the jobs gained or lost as a result of an increase or decrease in international students.

HOUSEHOLD CONSUMPTION

This is another alternate metric to measure the economic impact of international students. This refers specifically to impacts on expenditure by households on goods and services.
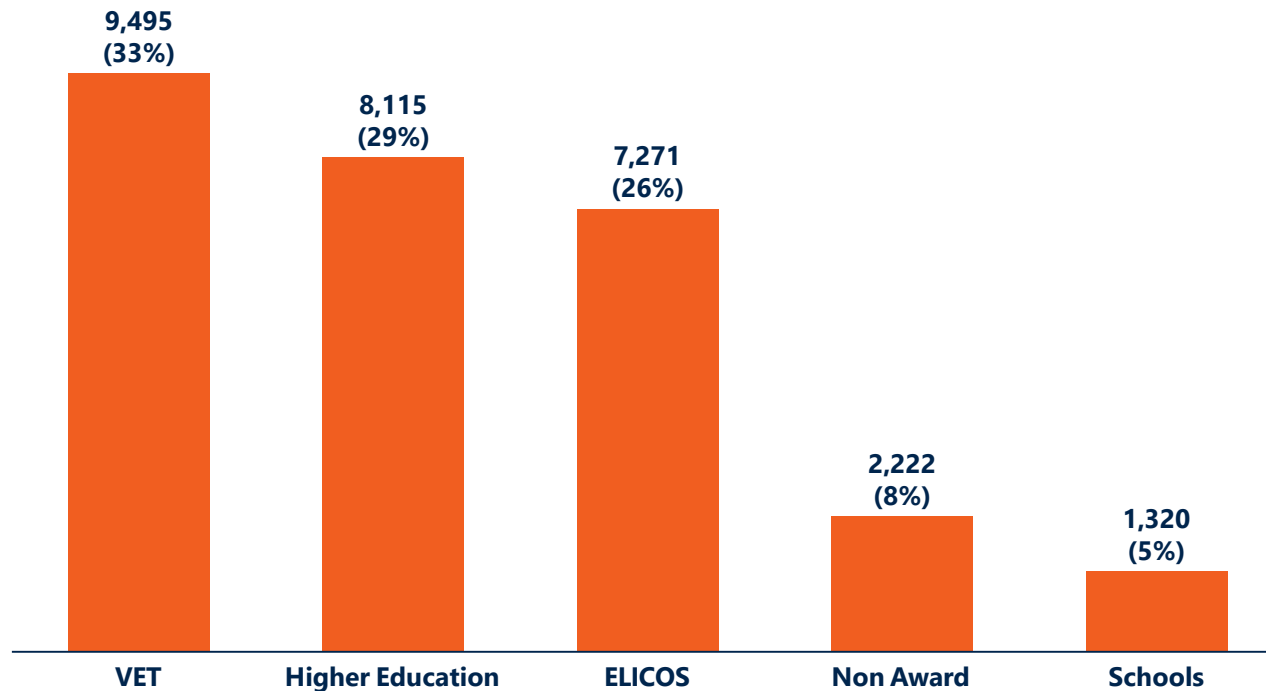
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Gold Coast is the second most popular study destination in Queensland after Brisbane.

Over 28,000 students studied in the Gold Coast in 2018. One third of these students studied a VET course. Students studying in Gold Coast generated just over $1bn in export revenue in 2018. The number of students studying in the Gold Coast by sector is illustrated below.

Number of students studying in the Gold Coast by sector (2018)

Sector	Value
VET	9,495 (33%)
Higher Education	8,115 (29%)
ELICOS	7,271 (26%)
Non Award	2,222 (8%)
Schools	1,320 (5%)

28,423
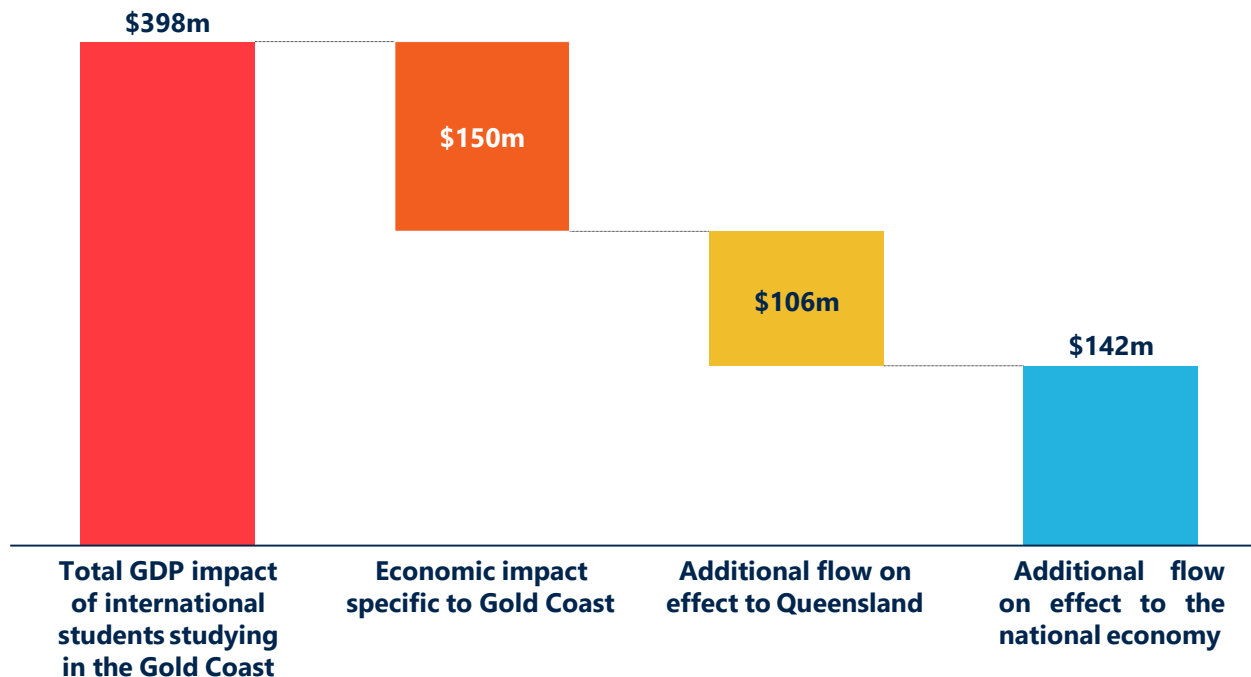Total number of international students studying in Gold Coast in 2018

$1.004bn
Total education export generated by students studying in Gold Coast in 2018

International students studying in the Gold Coast contributed $398m to the economy, which is divided between regional, state and national impacts.

In the short run, the economic impact of students studying in one region has a flow on effect to both the state economy of the region, and the broader Australian economy. The real GDP impact of students studying in the Gold Coast across the regional, state and national economy is illustrated below.

Real GDP impact of students studying in the Gold Coast

$398m

$150m

$106m

$142m

| Total GDP impact of international students studying in the Gold Coast | Economic impact specific to Gold Coast | Additional flow on effect to Queensland | Additional flow on effect to the national economy |

The total economic impact of international students studying in the Gold Coast equates to

$398m

in the short run.

International students studying in the Gold Coast contributed 3,040 jobs to the economy, which is divided between regional, state and national impacts.

In the short run, job losses in one region have a flow on effect on both the state economy of the region, and the broader Australian economy. The employment impact of students studying in the Gold Coast across the regional, state and national economy is illustrated below.
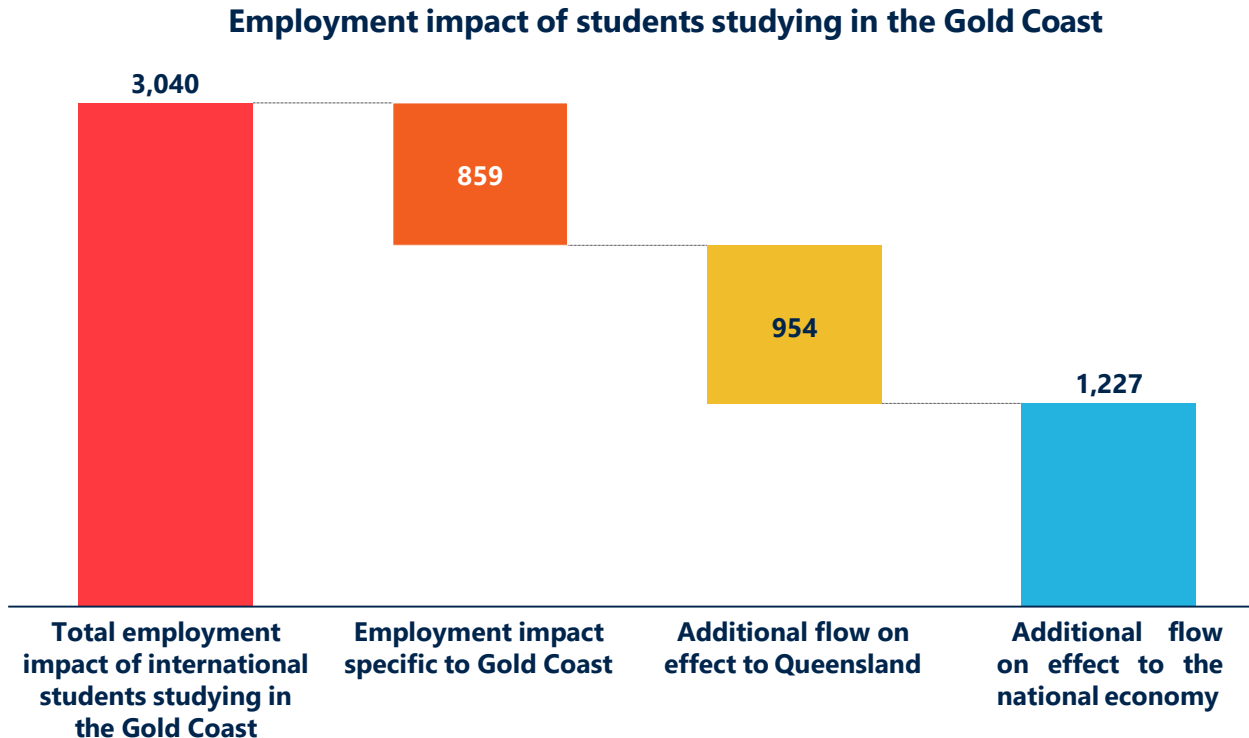
Employment impact of students studying in the Gold Coast

| 3,040	859	954	1,227
Total employment impact of international students studying in the Gold Coast	Employment impact specific to Gold Coast	Additional flow on effect to Queensland	Additional flow on effect to the national economy

The total employment effect of international students studying in the Gold Coast equates to **3,040 jobs** in the short run.

International students studying in the Gold Coast helped generate $402m in household consumption, which is divided between regional, state and national impacts.

Household consumption is another measure to analyse the economic impact of international students. It specifically reflects the impact of international students on household spending patterns. In the short run, the economic impact of students studying in one region has a flow on effect to both the state economy of the region, and the broader Australian economy. The real household consumption impact of students studying in the Gold Coast across the regional, state and national economy is illustrated below.

Household consumption impact of students studying in the Gold Coast

$402m	$213m	$66m	$124m
Total household consumption impact of international students studying in the Gold Coast	**Household consumption impact specific to Gold Coast**	**Additional flow on effect to Queensland**	**Additional flow on effect to the national economy**
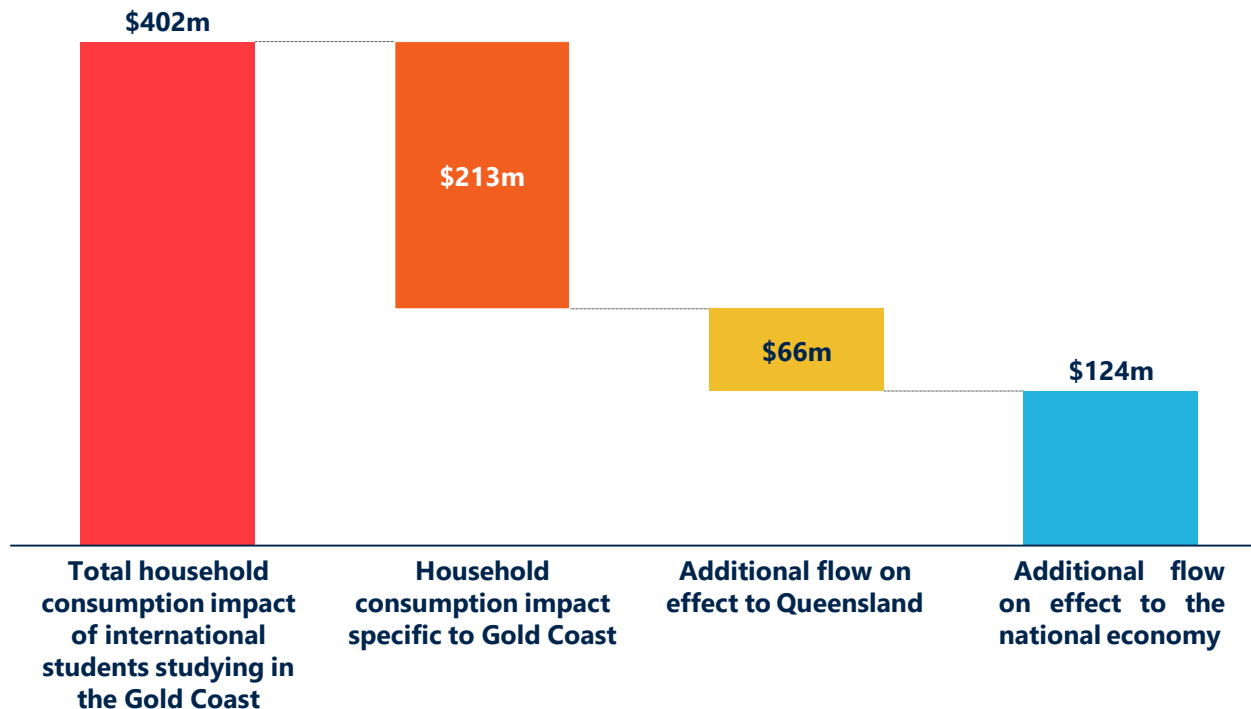
The total household consumption effect of international students studying in the Gold Coast equates to **$402m** in the short run.

The impact of international students on the Gold Coast economy is even more pronounced over the long term.

In the long run, the economic impact of international students on the Gold Coast is even more pronounced. This is because in the long run, capital stocks and investment are able to adjust, and will decrease. This in turn will worsen direct employment impacts. As the figures below show, this means the economic impacts on the region, in this case the Gold Coast, are more pronounced and sustained.

	SHORT TERM		LONG TERM
REAL GDP	$150m	→	$715m
EMPLOYMENT	859 jobs	→	2,915 jobs
HOUSEHOLD CONSUMPTION	$213m	→	$614m
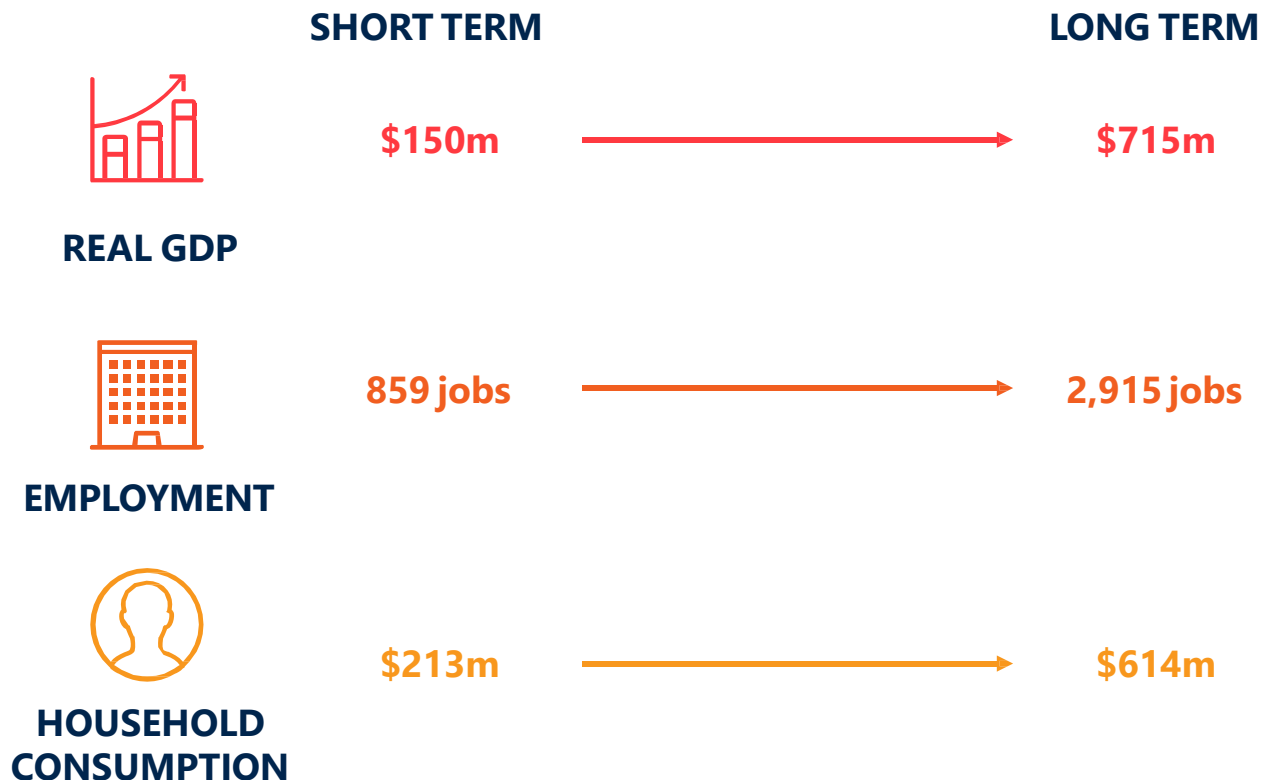
The long run impact of a 100% decrease in international education exports in Gold Coast leads to

- decrease in GDP of $715m

- decrease in employment of 2,915 jobs

- decrease in household consumption of $614m

Summary of the impacts of international students studying in the Gold Coast.

The below flow chart visually summarises the key metrics across the short and long term of international students studying in the Gold Coast.

28,423 students

~$1bn Export revenue

Short run economic impacts

National/ state/ regional

$150m Regional Real GDP impact → 859 Regional Jobs impact → $213m Regional HHC impact

$256m State Real GDP impact → 1813 State Jobs impact → $279m State HHC impact

$398m National Real GDP impact → 3040 National Jobs impact → $402m National HHC impact

Long run economic impacts

Regional only

$715m Regional Real GDP impact → 2,915 Regional Jobs Impact → $614 Regional HHC Impact

About Nous

Nous is the largest Australian-founded management consulting firm with over 400 staff across Australia and the UK.

We partner with leaders to shape world-class business, effective government and empowered communities.

About IEAA

IEAA advocate for the transformative power of international education and its positive impact on local, national and global societies

IEAA strives to empower professionals, engage institutions and enhance Australia's reputation as a provider of world-class education.

About CoPS

Victoria University's Centre of Policy Studies are world leaders 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.