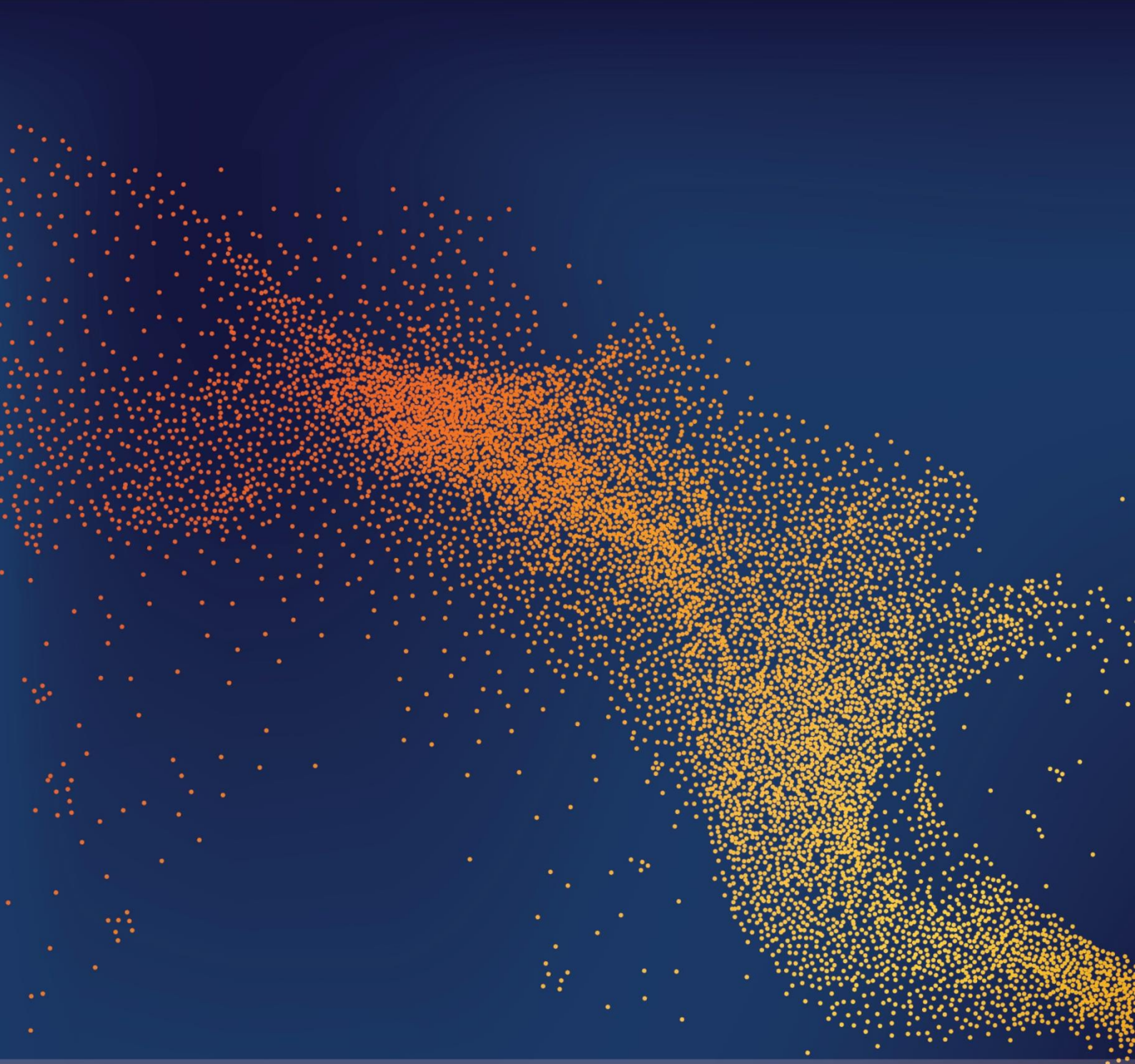

# Positioning Australia to remain a competitive study destination

27 March 2020

nous | 20 YEARS OF INFLUENCE

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# Executive Summary

**This report bridges the gap between what we know to be important factors in international students' choices and how different cities and countries compare**

In a globally competitive international education sector, there is limited understanding of the relative attractiveness of destinations. We can see where students go, and the literature gives us a good understanding of what are the choice factors that matter. However, we don't often understand how different destinations compare on specific choice factors.

There has been limited analysis of how different destinations compare, because of the paucity of data. Up until very recently, our understanding of how different destinations compare, was largely dependent on survey data, like IDP's Buyer Behaviour survey and its famous 'running man' chart.

This project takes a deep dive into two key dimensions of choice – price/cost and employment outcomes. These two factors are combined to determine the ultimate return on investment (ROI) of studying in a particular destination country. Analysis has focused specifically on the higher education sector.

These are not the only factors that matter, and depending on the student segment, these factors need to be considered within a broader decision-making context. However, the latest International Student Survey (ISS) tells us that "Affordable cost of study" and "Affordable cost of living" are the 3rd and 5th most important factors in choice of country. Similarly, "It leads to my chosen career" and "It has a high graduate employment rate" are the 1st and 6th most important factors in choice of course.

Given the availability of relatively robust data on both price/cost and employment outcomes, a focus on these two dimensions allows us to empirically bridge this gap between what's important, and how countries compare relative to one another.

A sampling approach was taken to conduct analysis in this project. Key source countries selected as in-scope for this project were: China, Hong Kong, India, Malaysia, and Vietnam. Key destination countries selected as in-scope for this project were: Canada, Ireland, New Zealand, the UK, and the USA.

**When it comes to undergraduate tuition fees, aggressive discounting may improve market share at the institutional level, but it may not always improve Australia's overall attractiveness as a destination**

In the undergraduate market, Australia should remain confident that it continues to offer a strong value for money proposition at current tuition fee levels. At a sticker price comparison, Australia is ranked as one of the most affordable study destinations. Including discounting assumptions, Australia is ranked as the most affordable study destination. Maintaining this competitive position on tuition fees is important in light of the improving the capacity and quality of undergraduate options in many of Australia's source countries, which will continue to reduce the demand for international study in destinations like Australia. This result holds across most fields of education (FOE), and where discounting is applied, is the case for all fields of education.

In some areas of undergraduate study, Australia's relative price calls for institutions to more closely examine their approach to tuition fee setting. The sticker price for Nursing programs appears too cheap compared to other fields of study and fees in other countries. Raising the average price of undergraduate Nursing programs may be warranted given it is in high-demand (though demand should be monitored given the Australian Nursing and Midwifery Accreditation Council has raised its International English Language Testing System (IELTS) requirements to 7.0). There is also a high-cost to deliver the program with caps on places by virtue of constrained placement opportunities.

The sticker price for Management and Commerce is attractive and a possible contributing factor to its ongoing popularity amongst international students. Given strong sustained demand for this field of education, substantial discounting may not be necessary for global competitiveness. Discounting in fields where Australia is already (1) a globally popular destination and (2) competitively priced, runs the risk of eroding yield for no improvement in competitive positioning relative to other countries.

That being said, the strong internal competition within Australia and the pivot towards more price-sensitive source countries will likely see discounting continue.

Aggressive and permanent discounting where it appears unnecessary (e.g. with Management and Commerce) is a zero-sum game for Australia, resulting in shifts in market share between institutions, but likely having a limited effect on Australia's already highly competitive position. Discounting activity that sees Australia's aggregate tuition price fall below Canada or New Zealand could be considered advantageous, but only if it provides access to new market segments with more constrained willingness to pay.

**Australia's tuition fees for postgraduate programs are comparatively high compared to other destinations, driven by longer average course lengths**

Across most FOEs and most cities, Australia's postgraduate programs are more expensive than almost all competitors. This would suggest that the recent strong growth in Australia's postgraduate enrolments have been driven by factors outside of cost.

The reason for Australia's higher postgraduate fees is clear; the bias towards two year masters programs by coursework puts us at the top end of all other countries in terms of average postgraduate program lengths. As a result, Australia's otherwise competitive annual fees results in a much higher fee overall.

It is possible that when many masters programs were adjusted to be two years in length to meet the Australian Qualifications Framework (AQF) requirements, there was not sufficient consideration given to the impact on tuition fees compared to other countries. The fact that international student enrolments in postgraduate programs has grown so strongly, suggests that this has not had a severe negative impact, although it is not possible to observe what might have otherwise been the case.

It is worth noting that while longer program lengths do lead to higher tuition fees (and higher cost of living), this is not necessarily a disadvantage in the eyes of all students. A longer course length can provide greater access to prospective students without a relevant discipline background, more in-depth and rigorous program elements, and more opportunities for work integrated learning.

In the longer-term however, Australian institutions may need to consider whether to reduce Australia's total course fees, particularly in a more competitive or constrained environment. This may be particularly important if the UK's move towards a two-year post-study work visa, coupled with their on average shorter degree lengths, results in increased market share.

**Across both undergraduate and postgraduate programs, the pricing of Australian programs falls within a narrow band compared to other countries, which may be indicative of the lack of choice in Australia's offer**

If prices are any indication, Australia's higher education offer gives international students a narrower range of options at different price points compared to other countries.

In comparing the distribution of international student tuition fees in Australia and other countries, it is clear that there is a high degree of pricing homogeneity in Australia. Prices in the USA, the UK and Canada on the other hand, span a much wider distribution.

It is possible that once institutional level discounting is taken into account, Australia's distribution of international tuition fees is more widely spread, especially at lower price points. Nonetheless, the overarching analysis demonstrates patterns that are pronounced and warrant attention.

In the USA, the distribution of tuition fees is more concentrated at the top end but includes many options at lower prices. In the UK on the other hand, prices are grouped around a lower average fee, with some higher priced options available. From the student's perspective, this wider band of prices is more attractive, in that it provides a broader range of options at different price points. From the destination country's perspective, a wider band of prices is more desirable, as it indicates the ability to cater to a diverse range of student profiles and preferences.

Australia's narrow range of tuition fees is indicative of a number of possible underlying issues. First, it might reflect a lack of institutional and product diversity. This is an argument most cogently posited by the

former Vice Chancellor of Griffith University and the University of Melbourne, Glyn Davis.[1]
Second, the narrow band of prices may reflect an unsophisticated 'follow the leader' approach to price setting in the Australian university sector. There may be other reasons for price homogeneity, such as cultural and regulatory factors, and this issue warrants further investigation.

The narrow compression of prices is less of an issue for Australia in the postgraduate market, with more competitor destination countries also exhibiting narrowly distributed price bands. This may suggest that there is a greater opportunity for Australia to take a leadership role in a more heterogenous offer in postgraduate programs, especially as Australia continues to move up the value chain, as reflected in rapidly increasing postgraduate commencements. Delivering more diverse choices to students should be reflected in prices but may need to include consideration of a much wider range of factors including program design, market trends, and other macro factors in overseas countries.

**Cost of living comparisons shows that Australian cities are competitive relative to other study destinations**

When it comes to cost of living, Australian cities are comparatively affordable options for international students. Canada and the UK are cheaper than Australia, but New Zealand (specifically Auckland), Ireland (specifically Dublin) and the USA are more expensive on average, with the last two substantially more expensive.

Based on a comprehensive dataset from Numbeo, eight typical cost of living scenarios were developed to conduct cost of living comparisons. Cities were ranked on each scenario, with a total score being provided. This score was standardised on an index between 0-500 to compare countries and cities. Analysis shows that study destination cities fall into four broad cost of living groups being 1) very expensive, 2) expensive, 3) moderate, 4) less expensive. At the top end, New York and San Francisco are outliers, being the most expensive.

The majority of Australian cities either fall into the 'moderate' or 'less expensive' group. Sydney is the only Australian city in the second most expensive group, sitting alongside Auckland, London, Los Angeles, Toronto and Boston. As such, Sydney is at a cost of living disadvantage compared to other Australian cities. Thus far, the strong growth in international students in Sydney, compared to its high living costs would indicate the strength of its popularity as a destination on the world stage.

Melbourne, while often singled out as another expensive city, is part of the moderate cost of living group, though sits right at the top end of this group. Several Australian cities, namely Melbourne, Newcastle, Wollongong, Brisbane, Darwin, and Perth are located in close proximity on the cost of living index. These cities should be cautious in claiming a cost of living advantage, given the data would suggest that there are only small differences between them.

Australian cities in group 4, on the other hand, appear to have a genuine cost of living advantage namely the Gold Coast, Adelaide and Hobart. The data shows that the costs to live in different cities do not generally break according to the metro and regional divide.

Cities in general, do not deviate substantially in their rank position across the eight scenarios, indicating that cities that are considered 'affordable' are affordable across a wide array of goods and services, and vice-versa for less affordable cities. Australia is no exception to this rule. Australian cities do, however, show greater spread in the cost of transportation, which sees a number of Australian cities rise up the costs (namely Sydney, Brisbane, Melbourne, Newcastle and Perth). Note that this analysis does not take into account student concessions. Furthermore, cost of living ultimately is a reflection of each student's individual consumption patterns.

[1] Davis, G (2013), *The Australian idea of a university,* accessed July 2019 at https://theconversation.com/the-australian-idea-of-a-university-17433. Note, while this article indicates that international education is the one place where Australian universities have shown some differentiation in terms of approach, our analysis illustrates that further work is needed given the overall global landscape.

**When tuition fees and cost of living are considered in tandem, Australia represents a moderately affordable proposition for international students**

Based on the data used in the tuition fees and cost of living comparison, it is possible to develop an aggregate Affordability Index that ranks countries and cities on their overall affordability. Australia, at an aggregate level, is a moderately affordable study destination. However, some of Australia's direct competitors like the UK and Canada have a more affordable offer. This implies that Australia will need to continue competing on a range of other factors, aside from cost alone, to ensure it retains and improves its global position.

When disaggregating the Affordability Index at the city-level, results indicate that cities fall in one of four clusters:

1. Low living costs, low to moderate fees
2. Moderate living costs, moderate fees
3. Moderate living costs, high fees
4. High living costs, moderate to high fees

Australian cities overall are positioned well on the Affordability Index, with almost all of the Australian cities sitting in either the 'low living cost, low to moderate fees' cluster, or the 'moderate living cost, moderate fees' cluster (Canberra being the exception). If the Affordability Index were restricted to postgraduate programs alone, Australia would perform less favourably, given the longer average course length, and the consequently higher tuition fees.

**International students tend to get good employment outcomes when they graduate and return home, and the graduates from Australia are no exception**

There is a strong selection bias when it comes to the characteristics of students that pursue a degree in an English-speaking study destination like Australia, New Zealand, the UK, the USA, or Canada. These students tend to come from relatively high-income families, will already have a high level of educational attainment, and will generally enjoy the advantages of a range of positive social determinants of employment outcomes.

As sufficient data was only available for the UK and USA, employment returns analysis, and subsequent ROI analysis, was conducted at a country-level comparison between Australia, the UK, and the USA.

Australia's international graduate employment rate is consistently above 90 per cent, with especially high rates for students returning to China and Hong Kong. The graduates that studied in the UK and the USA enjoy similarly high rates of employment (with the exception of graduates that studied in the USA and returned to Vietnam for whom the employment rate is approximately 80 per cent).

The employment rates for graduates from Australian undergraduate programs, particularly in Engineering and Management and Commerce, are very high compared to the UK and the USA. However, Australian graduates from postgraduate programs in these two FOEs see weaker employment rates compared to the UK and the USA. If Australia is to continue to grow postgraduate enrolments, this is an issue that warrants attention and further research.

**International students that graduate from Australian institutions have lower starting salaries that graduates from the UK and USA, but this gap closes over time**

While the employment rates for graduates of Australian institutions are generally comparable to (and in some cases better than) that of the graduates of the UK and the USA, the starting salaries for these graduates lags behind those from the UK and the USA.

However, these early differences in salaries are not sustained. The long-term salaries (10+ years after graduation) reported by Australian alumni remain very competitive, particularly compared with those reported by UK alumni. In particular, graduates from Australian institutions see a strong acceleration in salary levels in the medium-term. This trend is especially pronounced at the undergraduate level.

This could point to a strength of Australian institutions in preparing graduates for early-career supervisory or management positions. More research would be valuable to ascertain the reasons for this medium-term acceleration.

While sample size scores are low, it is concerning that salary rates for Australian alumni are lower than the UK and the USA in the major source markets of China and India. This phenomenon requires further exploration as it may point to a potential risk that Australia is not producing the types of employees that succeed in the long run in these two major economies. This situation may also result from institutional recognition and/or perception of quality between Australia, the UK, and the USA.

**Employers from around the world recognise the qualities of the graduates of Australia's higher education institutions**

Employers across source countries view Australian institutions as producing highly capable, job ready graduates. This is an endorsement of the overall quality of Australia's higher education system. Australia performs strongly across all industry groups in the eyes of employers. In particular, employers strongly nominate Australian institutions as producing highly capable graduates in Technology and Commerce industries, and employers rank Australia first in the Engineering industry. These are the industries into which Australia recruits the largest numbers of international students.

There are other industries where Australia receives the most employer nominations, including Health and Hospitality; while some institutions attract strong enrolments in these areas, these are not currently the industries which attract the greatest numbers of students across Australia. There may, therefore, be an opportunity for Australia to exploit strengths in these areas outside of Engineering, IT and Commerce, to garner increased market share.

Australian institutions, however, are not as valued by employers in China and India as institutions in the USA. Australia is ranked a distant second behind the USA by Chinese employers, and last by Indian employers. This finding warrants further examination, given these two countries contribute the greatest numbers of international students in Australia.

The geographic distribution of employer institution preferences appears to correlate strongly to the annual long-term salary of international students. Countries in which Australian institutions are frequently nominated by employers are the same countries in which Australian alumni receive high long-term annual salaries. This may suggest that the initial perception of Australian institutions and graduates may have a lasting impact on students.

**Employers from different countries have similar expectations and requirements of university graduates, although some differences may need to be considered in the design of programs for international student cohorts**

There are many overlapping expectations and requirements of university graduates expressed by employers from different countries. Understanding these varying expectations is critically important for institutions to ensure they help improve the employability of students. The top three priority skills that are consistently nominated by employers from China, Hong Kong, India, Malaysia and Vietnam are communication skills, the ability to work in teams, and problem-solving skills. All Australian higher education institutions should continue to embed 'soft skills' into course design given the universal desirability of these skills across all source markets.

Australian institutions though, may benefit from a more in-depth analysis of their student mix in light of the attributes and skills desired by employers in key source markets. This is particularly true if an institution is strongly leveraged on a particular source market. This would allow students from different countries to focus on the development of specific attributes and skills that would maximise their employability upon returning home. For instance, Vietnamese employers strongly prefer graduates with professional experience, while employers from Hong Kong and Malaysia prefer graduates with higher levels of extra-curricular activities. Institutions can not only assist in helping students develop such skills, but also in helping students articulate how they have in fact developed such skills while studying in Australia.

**Australia provides the second-best employment returns, though results vary by level, FOE, and source market**

Employment rate, salary, and employer perceptions analyses can be integrated into a single score to create an Employment Index. This provides a holistic view as to the relative benefit of studying in key destination markets.

Australia is positioned second on the Employment Index, behind the USA but in front of the UK. This is a positive finding as it highlights that Australia's employment returns rank higher than its overall rank for international student demand. This suggests that Australia can market itself strongly on its ability to provide strong employment returns to international students to try to increase its overall market share.

Australia's key strength again, lies in the undergraduate market where Australia is ranked first for employment returns. A focus on improving postgraduate employment, though, appears to be necessary given the lower returns Australia provides at this level. As Australia seeks to recruit more international postgraduate students, the employability of these graduates will become an important point of comparison with our competitors. For Australia to remain relevant and attractive as a study destination, Australian institutions will need to focus on providing a postgraduate study experience which positions our graduates for demonstrably strong employment returns over their careers.

Australia provides the strongest returns to students from Vietnam and Hong Kong and provide strong returns to Malaysian students. Results are substantially lower for Chinese and Indian students, where the USA again is ranked first by a substantial margin, and the UK and Australia providing lower results. Understanding and closing the gap in the Chinese and Indian markets should be a strategic focus given these two countries represent the top two ranked source countries for Australia.

**Overall, Australia providers moderate returns, at a moderate cost**

A relationship exists, at an overall level, between cost of study and employment returns. The USA is the most expensive study destination and delivers the strongest employment returns. The UK is the least expensive study destination and delivers the lowest employment returns. Australia sits in the middle of these two countries, providing moderate returns, at a moderate cost.

Despite sitting between the USA and the UK for affordability and employment returns, Australia arguably delivers the most ideal ROI. Students studying in Australia pay, on average, higher fees than those studying in the UK, but they receive disproportionately larger returns in employment outcomes. Those students who choose to study in the USA, do receive much stronger employment outcomes than those in Australia, but this is matched by significantly higher fees. As such, students studying in Australia are ideally placed in terms of costs and returns, both on a relative and absolute basis.

**While providing a strong ROI on aggregate, Australia's ROI is low for the markets that are large and growing, namely postgraduate, Chinese, and Indian markets**

Disaggregating ROI by level, FOE, and source market, highlights areas of comparative strength and improvement for Australia. Australia's ROI is strongest in the undergraduate market where Australia provides the strongest employment returns, at the cheapest cost. Australia also provides the strongest ROI for Vietnamese and Hong Kong students and a very strong ROI for Malaysian students.

While there are notable areas of strength, Australia's areas of improvement do give some cause for concern. Australia provides a lower ROI in key large and growing markets, namely the postgraduate, Chinese, and Indian markets. In the postgraduate market, Australia provides the lowest ROI of all three countries. ROI for Chinese and Indian students studying in Australia is substantially lower than for other source markets. While student demand has not waned across these markets yet, these results do embed a significant level of risk for future enrolments in Australia.

Further research to determine methods to strengthen Australia's ROI in the postgraduate, Chinese and Indian markets will be required to ensure greater sustainability in Australia's international education sector across the long-term.

# Contents

## Project funder

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For further information, please visit www.internationaleducation.gov.au

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- QS Quacquarelli Symonds
- 5R Partnership

# Part 1 | Background and approach

This part of the report provides an overview to the drivers and methodology of the project.

Multiple factors influence where students choose to study. There currently, however, remains a limited understanding of the relative attractiveness of destination countries and cities in relation to student choice factors.

This project takes a deep dive into two key dimensions – affordability and employment returns. Analyses across these two factors has been combined to determine an overall return on investment. Analysis has focused on the higher education sector.

A sampling approach was taken to conduct the affordability, employment returns, and return on investment analyses. This method focused on designing a representative and competitive sample for comparison to Australia.

Multiple methodological considerations were factored in conducting this project. These are all explained in further detail in the appendices of this report.

# 1 Project overview

This report has been prepared as part of the project '*Positioning Australia to remain an attractive study destination for international students*.' The project is supported by the Australian International Education: Enabling Growth and Innovation (EGI) project fund, Australian Government Department of Education.

## 1.1 There is a need to consider the sustainability of Australia's international education sector

International student education is a complex, dynamic and competitive global landscape. Major players continually grapple for source and destination country market dominance. Australia is a leading destination in the higher education market. As the third most popular country of choice, Australia attracts over 800,000 student enrolments across all sectors and generates in excess of $34 billion.[2,3] Aside from direct economic benefits, international students help to generate a range of social, culture and geopolitical benefits to Australia. While performing strongly, Australia competes in a congested market. Students are being offered an unprecedented amount of study destination options, both overseas and domestically, and countries are increasingly seeking to gain a competitive edge. New Zealand for instance, in 2018, detailed its long-term international education strategy and the UK released its new strategy in 2019.

While Australia, according to research conducted through the IDP Buyer Behaviour survey, performs well across a range of metrics (e.g. quality, safety, affordability and employment returns), it does not lead on any one factor.[4] Australia's relative position has also begun to slip over recent years on some factors. Alongside this, Australia has begun to see a decoupling between fees and load in international education, and the average sticker price of programs appears to be increasing beyond the rate of inflation.[5] Continuation of such a trend may reach a tipping point in which Australia's reputation as a valuable study destination may deteriorate, potentially at a rapid rate.

With international student education in Australia possessing such important strategic and economic implications, consideration needs to be given to the sustainability of Australia's offer to the market.

## 1.2 A gap exists in what we know are critical choice factors for international students, and how countries and cities compare

Multiple factors influence where students choose to study, and countries are increasingly seeking to compete on the totality of student experience, as opposed to simply on educational experience. While no two students make decisions in the same manner, research indicates that, on average, a sequencing of key choice factors exist. This is: 1) course, 2) country, 3) city, 4) institution.

At each of these levels in the sequence, multiple drivers of decision making exist. These decisions are not made in isolation. Students draw upon multiple sources of information throughout their decision making process (including friends and family, marketing, social media and more). The below flow chart highlights the range and general sequence of decision making that prospective international students undertake.

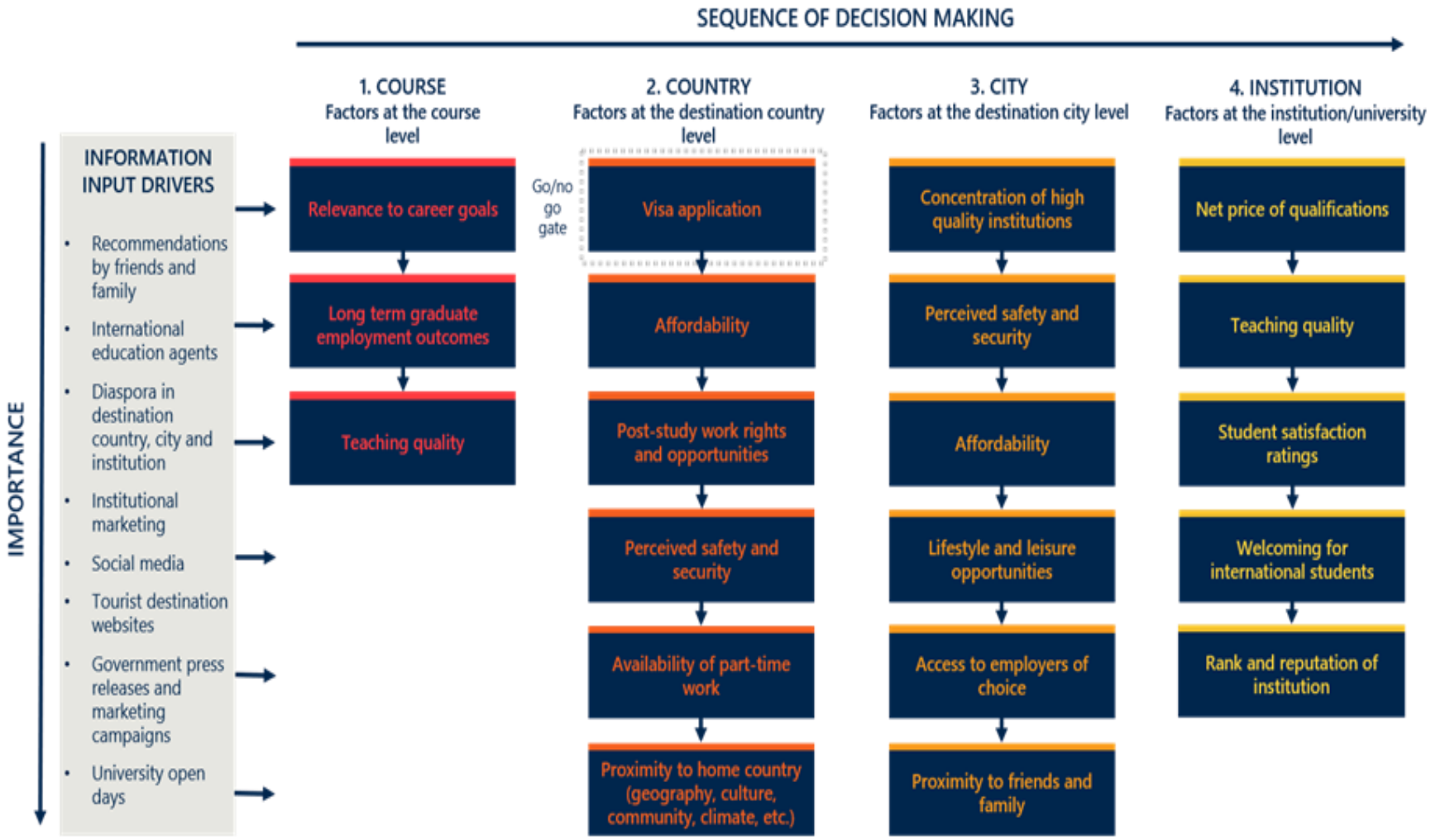
[2] Tehan, D (2019), *Continued growth in international education sector, accessed April 2019 at* https://ministers.education.gov.au/tehan/continued-growth-international-education-sector

[3] Department of Education (2018), International student data summary, accessed April 2019 at https://internationaleducation.gov.au/research/International-Student-Data/Documents/MONTHLY%20SUMMARIES/2018/Dec%202018%20MonthlyInfographic.pdf

[4] IDP (2018), *International Student Buyer Behaviour Research 2018,* accessed May 2019 *at* https://www.idp.com/partners/news-article-12/

[5] Chew, J (2017), The decoupling of income and load in international education, accessed May 2019 at https://www.linkedin.com/pulse/decoupling-income-load-international-education-jonathan-chew/

**Figure 1 | International student drivers of choice framework**



## 1.3 This project takes a deep dive into two key dimensions - affordability and employment returns

There currently is only a partial understanding of the relative attractiveness of destination countries and cities in relation to the key choice factors in the framework above due to the paucity of data. Until very recently, understanding of how different destinations compare was largely dependent on survey data such as the IDP Buyer Behaviour survey noted in Section 1.1 above.

To develop a deeper understanding of Australia's position in the market, and where potential risks and opportunities exist, Nous was commissioned by the Australian Government Department of Education to undertake a comparative analysis of:

- the affordability of higher education in key international markets
- the employment returns of studying in key international markets
- the overall ROI and attractiveness of studying in key international markets.

Given data availability and constraints, this project focused specifically on the higher education sector.

While not being the only dimensions of choice for prospective students, affordability, employment returns, and the overall return on investment associated with studying internationally are important dimensions. The latest International Student Survey indicates that "Affordable cost of study" and "Affordable cost of living" are the 3rd and 5th most important factors in choice of country. Similarly, "It leads to my chosen career" and "It has a high graduate employment rate" are the 1st and 6th most important factors in choice of course. The framework above supports the International Student Survey findings. 'Long term Employment Outcomes' is ranked as one of the most important dimensions for students in making study decisions, and 'Affordability' and 'Net Price of Qualification' rank highly across country, city, and institution levels. This further highlights the importance of affordability and strong employment returns compared to other factors.

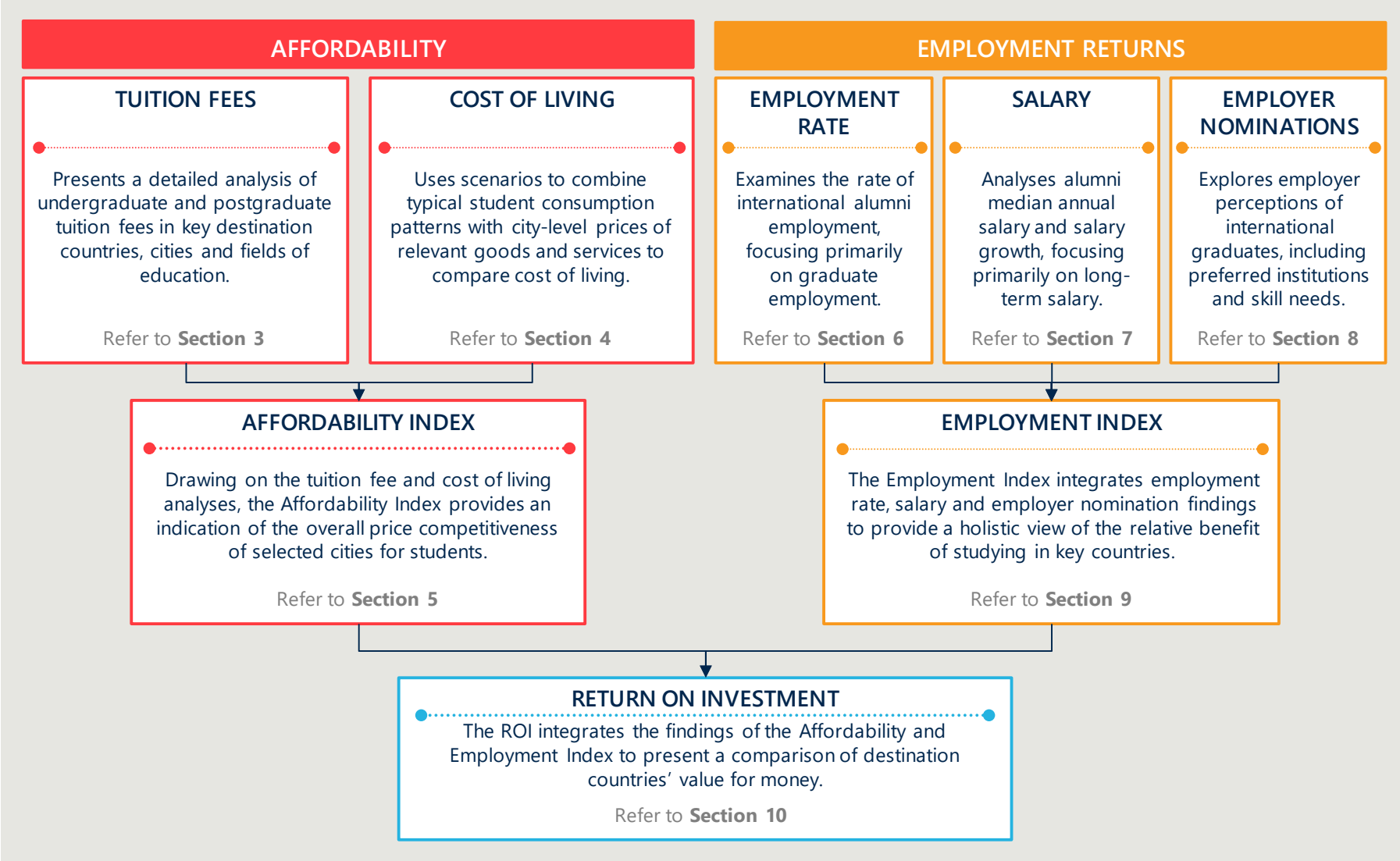
Affordability, employment returns, and ROI can be defined in a multitude of ways. To conduct a robust cross-country analysis, the following definitions have been used for the three key areas of analysis for this project.

**Figure 2 | Definitions of key areas of analysis**

- **Affordability**: The combination of tuition fees (not inclusive of additional course costs such as textbooks), and cost of living expenses a student pays while studying in a destination country/city.
- **Employment Returns**: The long-term employment outcomes a student receives upon returning to their home country. For the purposes of this project, employment returns analysis has not considered any part-time work a student may obtain *while* studying, or any *post-study* employment while staying on in the study destination country/city.
- **Return on Investment (ROI):** The rate of return in terms of employment outcomes relative to the affordability of studying in a given destination country/city.

Understanding these two drivers and the ultimate ROI of study will provide the government and other stakeholders with a more detailed understanding of how attractive Australia is as a study destination. This report presents a detailed comparative analysis of affordability, employment returns and subsequent return on investment for international students. The overarching structure for these areas of analysis, along with the relevant cross reference in the report, are presented below in Figure 3.

**Figure 3 | Project areas of analysis**



# 2 Overarching methodology

A sampling approach was taken to conduct the affordability, employment returns, and overall ROI comparative analysis. This involved selecting the appropriate source and destination countries to inform the overall project at the outset. Analysis within each stream of work involved consideration of several methodological questions. Where possible, we continued to use a sampling methodology to create a representative basis for analysis and comparison.

## 2.1 The methodology focused on designing a representative and competitive sample for comparison to Australia

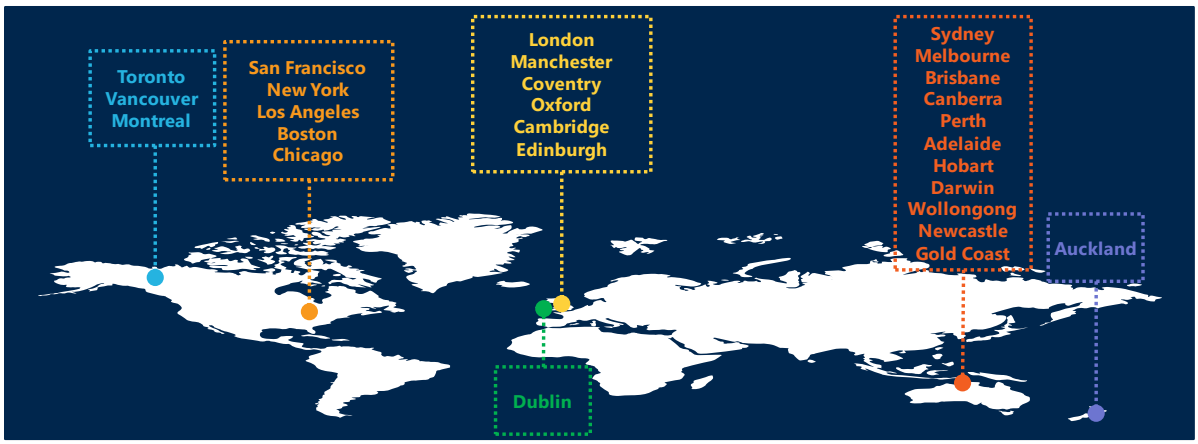
At the outset of this project, a number of critical methodological questions were considered to develop an appropriate representative sample. In particular, decisions relating to source country, destination country, cities, and institutions were considered.

The study focused on a comparison of Australia's primary competitor destination countries: the USA, the UK, Canada, New Zealand and Ireland. These countries were selected because they are the English-speaking countries which attract the highest numbers of international higher education students globally, thus being countries which Australia primarily competes with for market share. As shown in Figure 5 overleaf, these countries represent where 41 per cent of all international higher education students globally choose to study.

The study was also limited to an analysis of international students from the key source markets of China, India, Malaysia, Vietnam and Hong Kong. Available data indicates that these countries are the top source countries for international education globally, and key source markets for in-scope destination countries. They represent where 30 per cent of all international higher education students originate from.

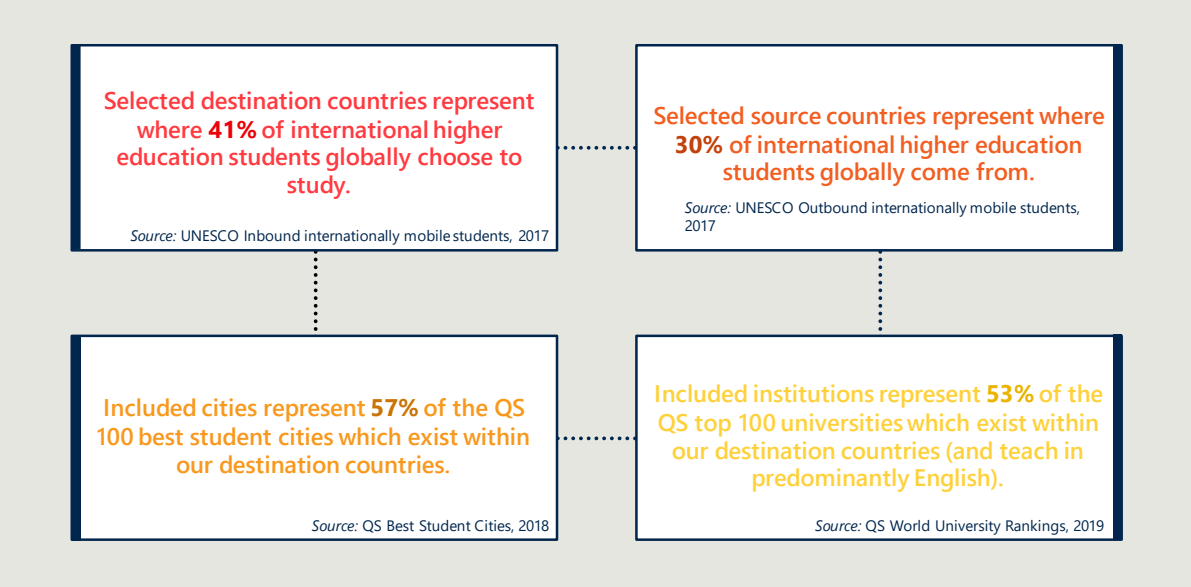
Within these countries, 27 cities were selected (see Figure 4below), representing 57 per cent of QS list of 100 best student cities within our chosen destination countries. The selected institutions were drawn from within these cities and are listed in Appendix A. To select the in-scope institutions, the top institutions by international student numbers were selected in the competitor destination countries. This list of institutions was further refined to ensure that they all teach primarily in English and offer at least one of the courses in-scope. The resulting selection represents 53 per cent of the QS top 100 universities which exist within our destination countries.

**Figure 4 | In-scope cities**



This sampling approach, outlined in Figure 5, enabled strong coverage across all four areas and provided a robust basis for comparison throughout the study.

**Figure 5 | Project sample in the context of the broader international higher education sector**




## 2.2 A number of methodological decisions were made in each stream

Throughout the study, a range of methodological decisions were made in relation to the scope of the study and the affordability analysis, employment returns analysis, and ROI analysis. Where relevant, these have been identified and explained in the main report, otherwise see the appropriate appendix.

**Affordability Analysis:**

- Selection of fields of education to enable tuition fee collection. See **Appendix B**.
- Consideration of discounting in tuition fee analysis. See **Appendix C**.
- Scenario development for cost of living analysis. See **Appendix D**.
- Regression model to predict postgraduate tuition fees. See **Appendix E**.
- Cost of living index methodology. See **Appendix F**.
- Tuition fee index methodology. See **Appendix G**.

**Employment Returns Analysis:**

- Employment returns index methodology. See **Appendix H**.

## 2.3 Primary and secondary data sources were utilised

This project involved both primary data collection and external partnering to identify and gather necessary data points. Primary data collection involved gathering some countries tuition fee data from different university websites as no existing dataset was identified. Secondary data gathering involved partnering with organisations such as 5Rs Partnership, QS Qualtrics, and cTurtle to purchase data sets. Secondary data gathering also involved drawing upon existing publicly collated data sets, such as Numbeo, to gather cost of living data.

Despite the extensive data gathering undertaken in this project, several gaps existed that had to be triangulated. For instance:

- data around discounting practices is extremely opaque across Australia and the USA, and non-existent across other countries
- data on student consumption patterns, and how this varies by source and destination country, is limited
- data on employment returns (salary and employment rate), while available, often has small sample sizes.

This project has provided a methodological frame by which ongoing analysis of ROI can be conducted. Further iterations of this project may benefit from more detailed analysis of the above data issues.

# Part 2 | Affordability analysis

This part of the report focuses on comparing the affordability of in-scope countries and cities. Affordability is defined as the aggregation of two core components:

1. Tuition fees
2. Cost of living

The combination of these factors determines final affordability of a country and city.

Tuition fee analysis was conducted at the undergraduate and postgraduate level. Analysis at the undergraduate level was conducted at both the sticker price and discount price.

Discounting was factored at a rate of 17.5 per cent for Australian undergraduate fees and 50 per cent for USA undergraduate fees. No discounting was applied at the postgraduate level.

Cost of living was derived from the development of eight baskets of goods which comprised common living scenarios across the international student lifecycle.

Tuition fee and cost of living analyses were combined to develop an Affordability Index for countries and cities.

# 3 Fee comparison

*This section examines Australia's relative position when it comes to undergraduate and postgraduate tuition fees. It provides a detailed breakdown of how Australia's higher education offering compares at a country, city and FOE level. Drawing on an extensive dataset of tuition fees across Australia, the UK, the USA, Canada, Ireland and New Zealand, this analysis delivers key insights to understanding how the different dimensions of tuition fees can have a material impact on Australia's attractiveness as a study destination.*

## 3.1 Australia's undergraduate courses are some of the most affordable choices for international students

For the purposes of this project, discounting of 50 per cent for the USA, and 17.5 per cent for Australia has been assumed.

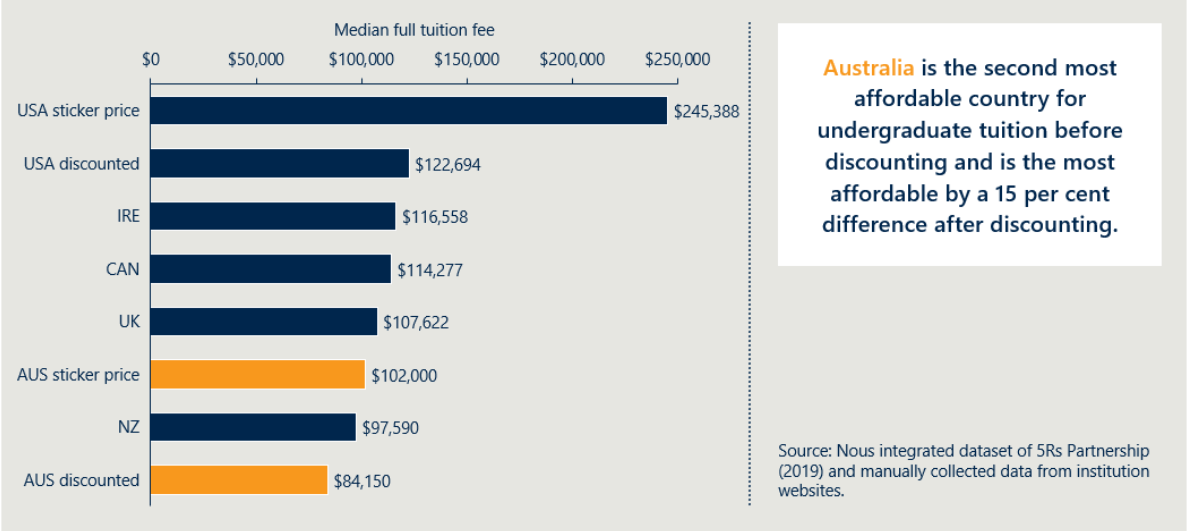
Australian cities overall, are a competitive study destination for undergraduate students when comparing fees. Comparisons of sticker price highlight strong city-level positioning for Australia. While discounting in the undergraduate field is opaque, an assumed discount has been factored for the USA and Australia (see Appendix C for further details). This has allowed for analysis to be conducted at a discount rate as well. Factoring in estimates of fee discounting further accentuates the strong positioning of Australian cities.

### 3.1.1 Australian cities are competitive at a sticker price, and more so with the increasing practice of discounting

Australia is one of the most affordable study destinations when comparing undergraduate fees at a country-level. Australia is the second most affordable country when comparing sticker-price with a median degree fee of $102,000 (see Figure 6 overleaf). Unsurprisingly, given the extent of discounting, the USA is by far the most expensive option when comparing sticker price. The USA's median fee of approximately $245,000 is 71 per cent higher than the next country, Ireland, and over 82 per cent higher than Australia's sticker price.

The application of discounting significantly changes the competitive landscape. Post-discounting, the USA is still the most expensive country but the price difference between the USA and other countries is significantly reduced. Australia is the most affordable country when factoring in discounting.

**Figure 6 | Country-level undergraduate median sticker tuition fee and median discount tuition fee for Australia and the US**

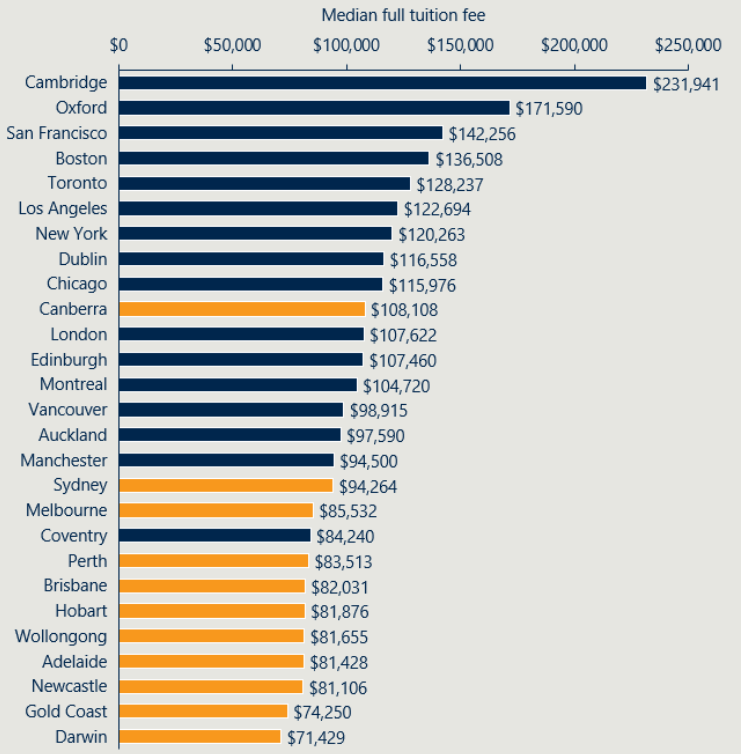



At the city-level, Australia remains very competitive on price. At the sticker price, all Australian cities except Canberra fall below the median city fee of approximately $123,000 (see Figure 7 below). Without discounting, Australia is highly competitive on price for both regional and metropolitan cities around the country. This means that, on average, undergraduate tuition fee is not a significant inhibitor for students in selecting an Australian city for study.

**Figure 7 | Median undergraduate sticker price by city**

Factoring in discounting substantially improves Australia's already competitive positioning at the city-level. Applying discounts to both the USA and Australia, results in Australian cities representing nine of the top ten cheapest cities (see Figure 8 below). Canberra is the only Australian city that is an outlier. Application of the assumed discount rate brings each city's median fee (except for Canberra) below a $100,000 threshold when considering fees in Australian dollars.

**Figure 8 | Discounted median undergraduate sticker price by city**




**Post-discounting, Australian cities occupy the bottom 30 per cent of median sticker prices with fees under $100,000 with Canberra being the notable exception.**

Source: Nous integrated dataset of 5Rs Partnership (2019) and manually collected data from institution websites.

NOTE: This analysis includes discounting.

## Implications for Australia

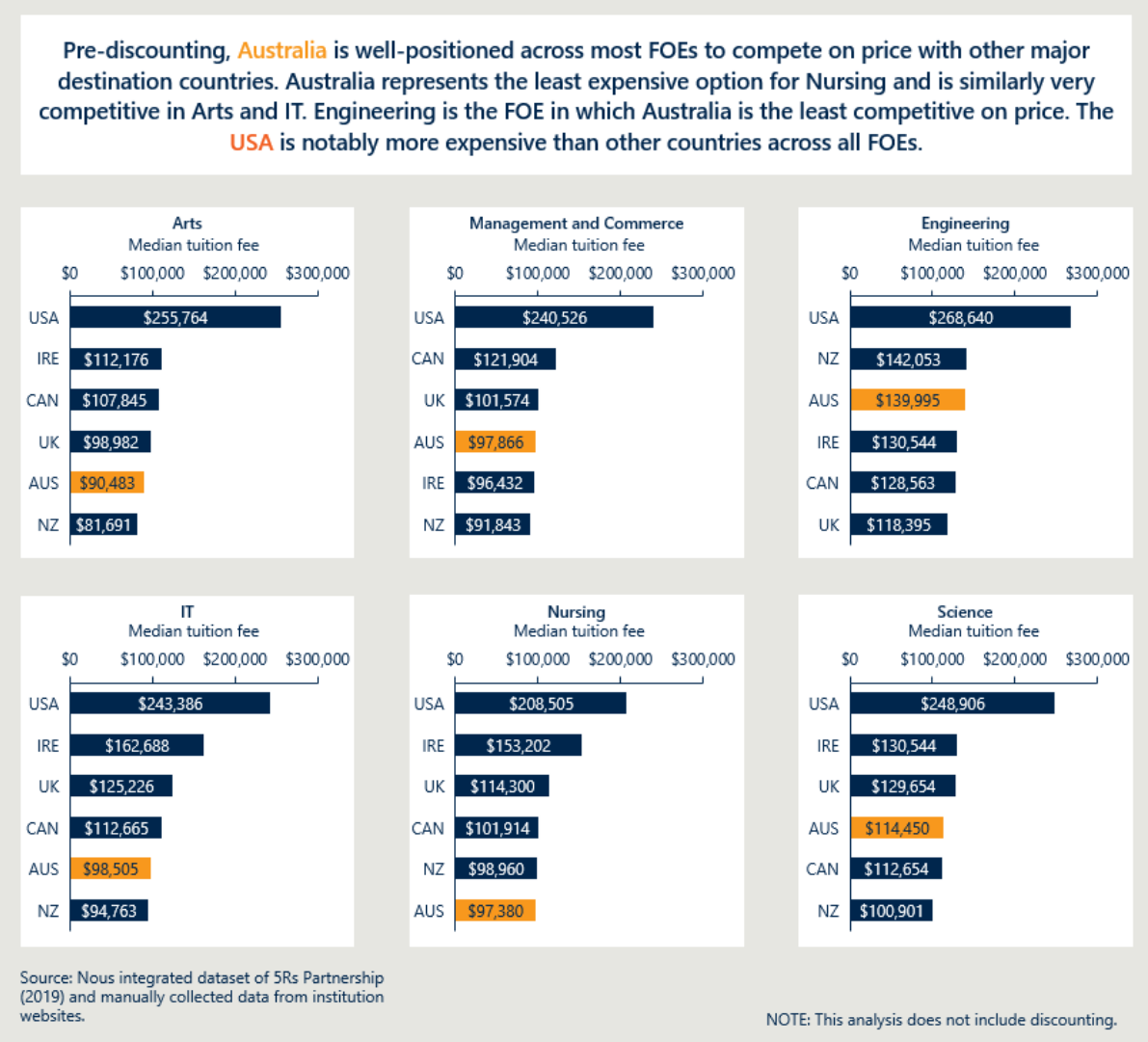
- Australia can market itself extremely strongly as a destination of choice for undergraduate students. At a sticker price comparison, Australia, and Australian cities, continue to be competitively ranked. With the increasing practice of discounting, Australia is often the cheapest option compared to other English-speaking study destinations.
- Australia has been a popular destination for undergraduate study, but recently postgraduate student flow has overtaken undergraduate student flow as the key source of growth. The shift towards postgraduate study appears to be driven by factors outside of the cost of an undergraduate degree, given Australia continues to be competitively positioned in this regard.

### 3.1.2 Australia is well priced across most fields of education

Pre-discounting, Australia is one of the most affordable options across most FOEs in scope, with the exception of Engineering and Science.

Australia's fee competitiveness extends to the more disaggregated FOE level. Australia, when compared to competitor countries, is consistently placed below the median price across all FOEs except Engineering (see Figure 9 below). Australia is particularly competitive in Arts (second cheapest option), IT (second cheapest option), and Nursing (cheapest option). Australia's relative position in Management and Commerce is higher, but the difference between Australia and the next cheapest option is only $1,000. Similarly, Australia's position in Science is higher but the difference is not substantial. Science is the only other FOE apart from Engineering, where Australia's median fee is greater than a country other than New Zealand and Ireland (that is, a country that is more likely a true competitor for Australia). Unsurprisingly, the USA is consistently the most expensive option in the pre-discount scenario.

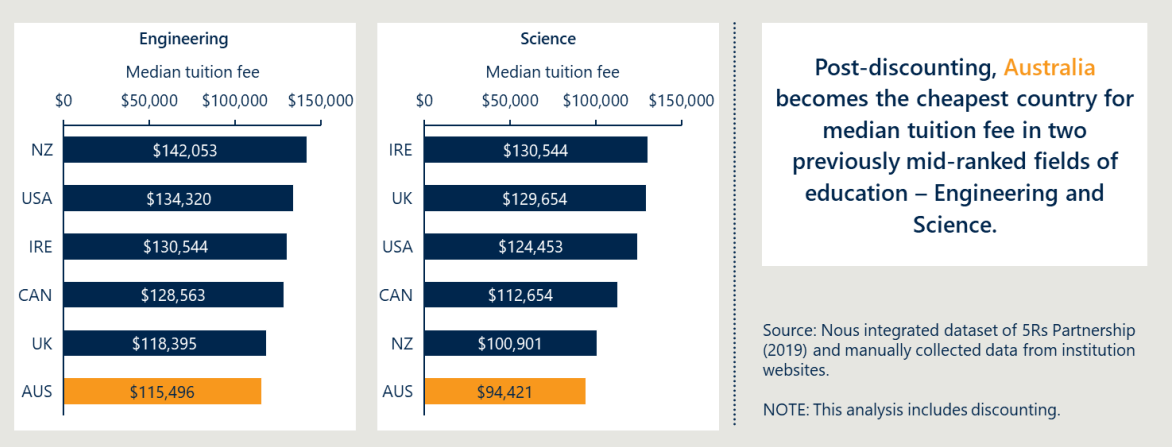
**Figure 9 | Median undergraduate tuition fee by country and field of education**[6]




[6] Note, the inclusion of more regional cities in Australia does not impact the overall positioning of Australia across the FOEs.

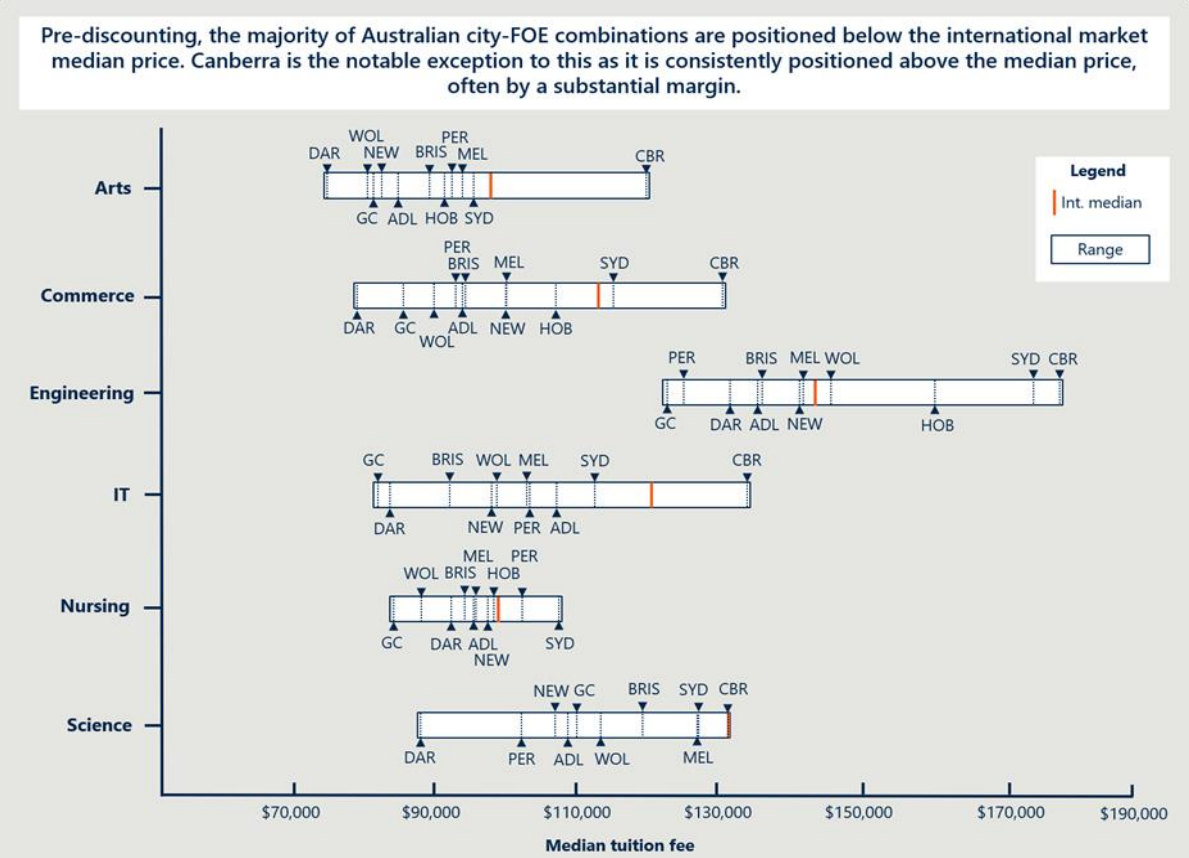
After factoring in discounting, Australia's competitiveness across the FOEs increases substantially to the point where Australia is the most affordable destination country across all FOEs. For the two FOEs where Australia was positioned less competitively, Engineering and Science, discounting means Australia is cheaper than the fifth placed country by $3,000 and $6,000 respectively (see Figure 10 below).

**Figure 10 | Discounted median tuition fee by country and field of education**




At the city-level, Australia's price competitiveness extends across almost all city/FOE combinations. Pre-discounting assumptions, most Australian cities sit below the international median price across FOEs (see Figure 11 below). Sydney and Canberra are the only two cities to sit above the median international price in more than one FOE. This is unsurprising though given the types of institutions in these cities.

**Figure 11 | Pre-discounting fee positioning of Australian cities by undergraduate field of education**

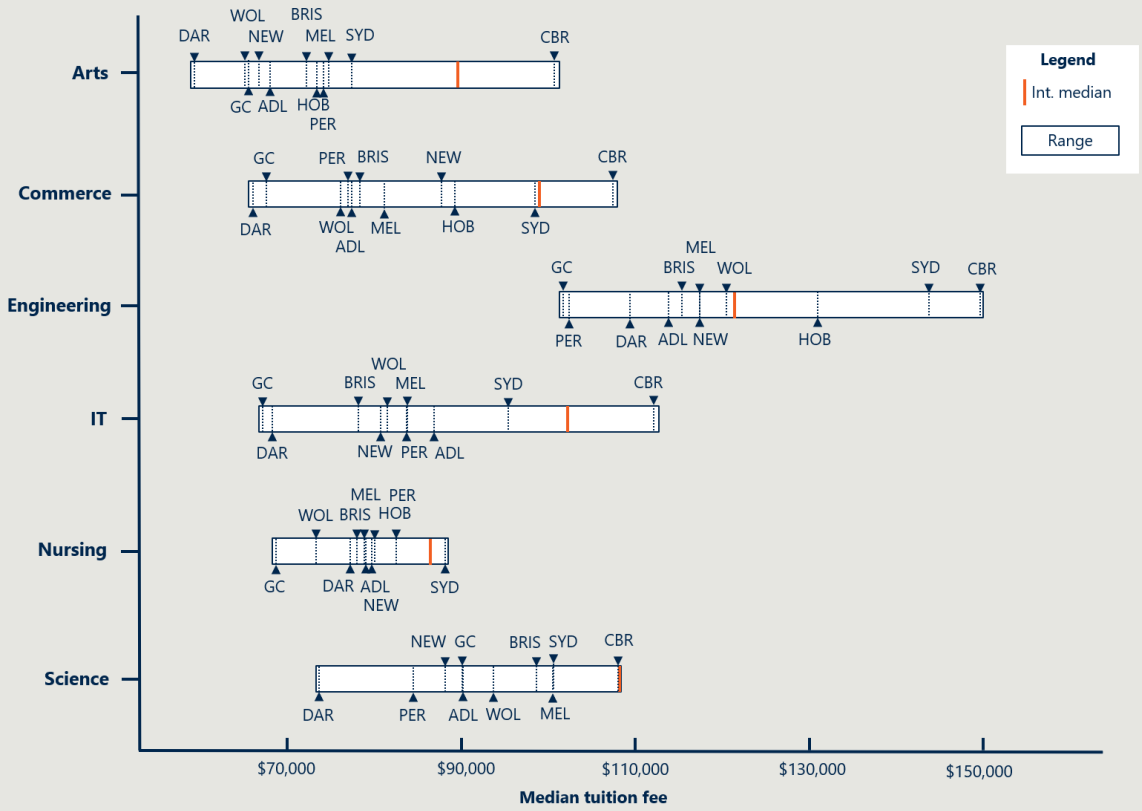


The majority of Australian cities sit below the international median price across all FOEs at both pre and post discounting assumptions.

Post-discounting, many of Australia's cities are positioned well below the market median for most FOEs (see Figure 12 below). From an individual city perspective, Sydney and Melbourne were most frequently positioned closest, but still under, the market median, and Canberra was most frequently positioned above the market median.

**Figure 12 | Post-discounting fee positioning of Australian cities by field of education**

**Post-discounting, almost all Australian city-FOE combinations are positioned below the international market median price. Canberra remains above the median in almost every FOE but the margin between it and the median is greatly reduced compared to pre-discounting.**




## Implications for Australia

- Australia and Australian cities are price competitive across most FOEs at the sticker price and are very competitive across all FOEs at a discounted price. In conjunction with the quality of education, this has the potential to be a strong marketing message to international students in the short-term to highlight Australia's value for money proposition.
- In the medium-term, Australian institutions may wish to reconsider their pricing strategies in some areas given the potential undervaluing of Australian degrees in the context of global comparisons of price. In particular:
    - The sticker price for Nursing appears too cheap, given it is in high demand and a high cost to deliver course, with constraints on student placements. This is both relative to other countries and relative to other FOEs in Australia. Demand should be monitored, however, given recent changes by the accrediting body.

- The sticker price for Management and Commerce is attractive and a possible contributing factor to its ongoing popularity amongst international students. Given strong sustained demand for this FOE, substantial discounting may not be necessary for global competitiveness. Discounting in fields where Australia is already (1) a globally popular destination and (2) competitively priced runs the risk of eroding yield for no improvement in competitive positioning relative to other countries. That being said, the strong internal competition within Australia and the pivot towards more price sensitive source countries will likely see discounting continue.
- Discounting in some areas is more warranted. In particular, Engineering degrees may require greater discounting given comparatively cheaper fees demonstrated by the UK.

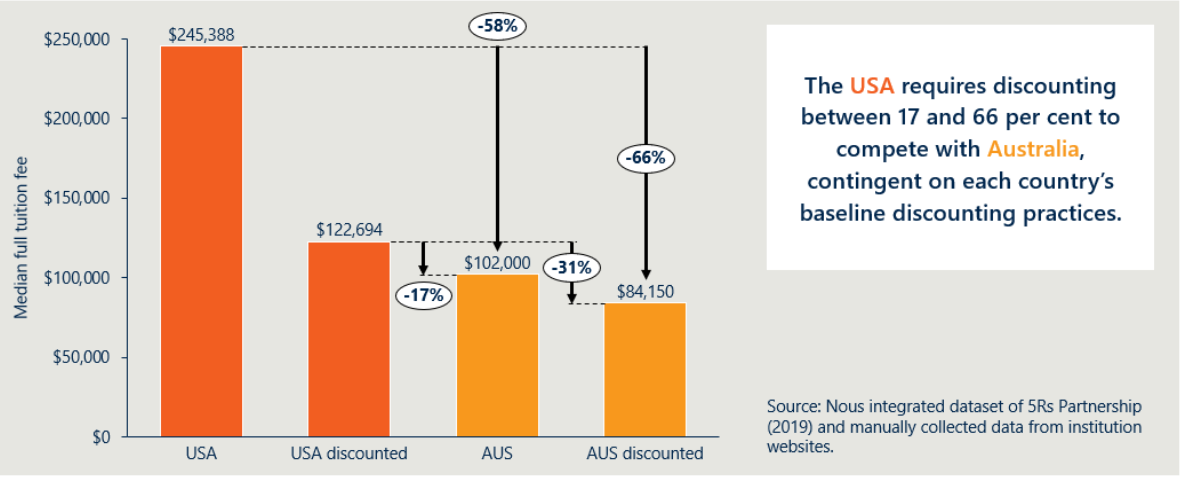
- Aggressive and permanent discounting where it appears unnecessary (e.g. with Management and Commerce) is a zero-sum game for Australia, resulting in shifts in market share between institutions but likely having a limited effect on Australia's already highly competitive position. Discounting activity that sees Australia's aggregate tuition price fall below Canada or New Zealand could be considered advantageous, but only if it provides access to new market segments with more constrained willingness to pay.

### 3.1.3 Substantial discounting is required for Australia's price competitiveness to be threatened

Analysis of the USA, Canada and UK, competitor countries with multiple cities, illustrates the extent of fee reduction required to compete with Australia's price competitiveness.

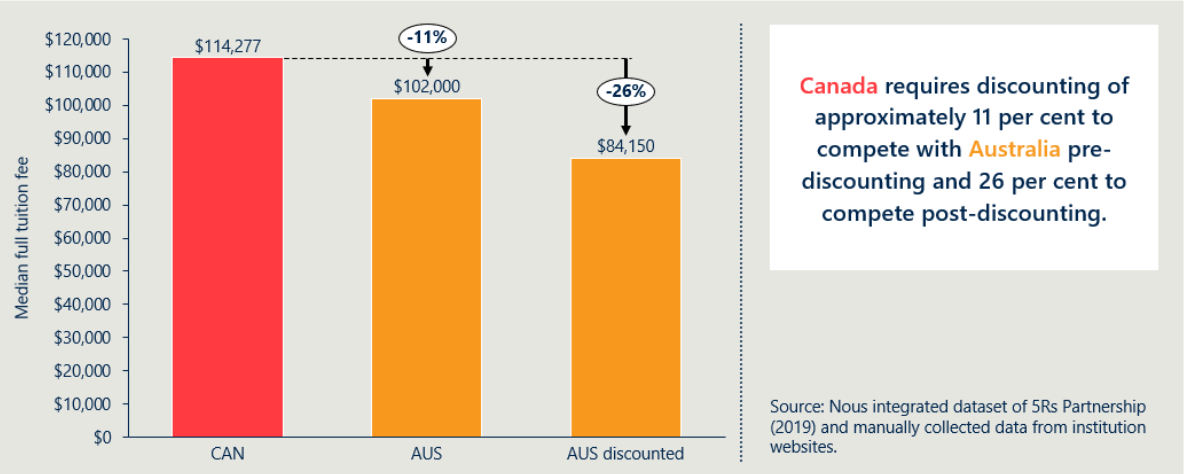
For the USA, the level of further discounting required is contingent upon assumptions made on current discounting practices. A range between 17 and 58 per cent is required if Australia is not assumed to discount, and discounts of between 31 and 66 per cent are required if Australia is assumed to discount (see Figure 13 below).

**Figure 13 | Discounting required by the USA to compete with Australia**



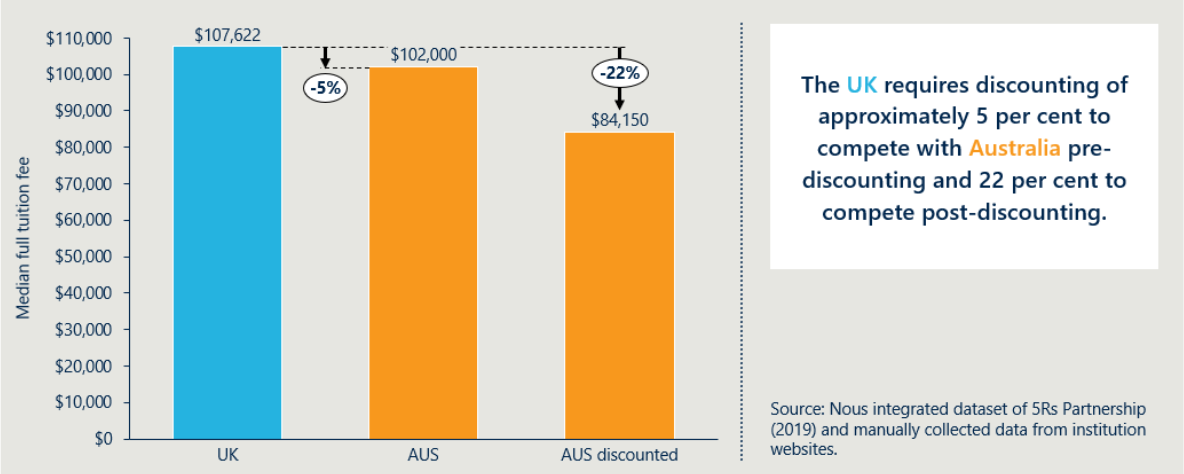

For Canada, discounting in the order of 11 per cent is required to compete with Australia on sticker price, and 26 per cent is required if Australia is assumed to discount (see Figure 14 overleaf). This range is significantly lower than the ranges required by the USA, reflecting Canada's stronger price competitiveness relative to the USA.

**Figure 14 | Discounting required by Canada to compete with Australia**




For the UK, a discount of only 5 per cent is required to compete with Australia if Australia is assumed to not discount, and 22 per cent is required if Australia is assumed to discount (see Figure 15 below). This range is lower than the discounting ranges of both the USA and Canada.

**Figure 15 | Discounting required by the UK to compete with Australia**



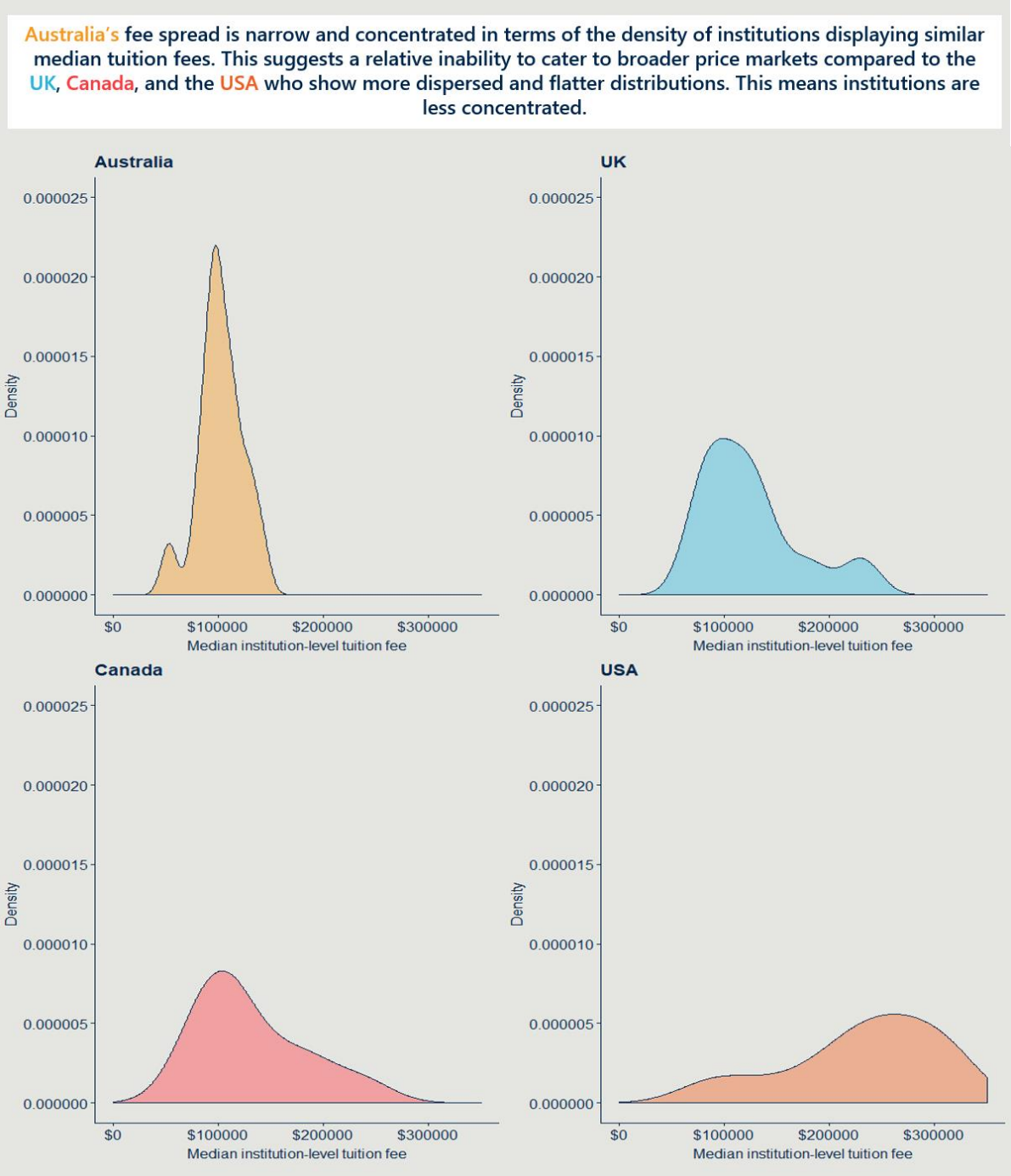

## Implications for Australia

- Sizeable wholescale discounting by the USA and Canada is needed to compete with Australia if no discounting is assumed. As it is assumed that Australia does engage in systematic discounting, factoring this in highlights that Australia as a whole has a significant buffer in price compared with the USA, Canada and the UK.

### 3.1.4 The spread of fees both across and within Australia is lower than all competitor countries and cities

Australia possesses a unique fee landscape in comparison to other destination countries. This difference is visible and pronounced both across and within cities. Australia's tuition fees are much more compressed compared with other countries (see Figure 16 below). In effect, once a student selects their degree and study destination as Australia, the range of fee options they face across cities is significantly smaller than other countries.

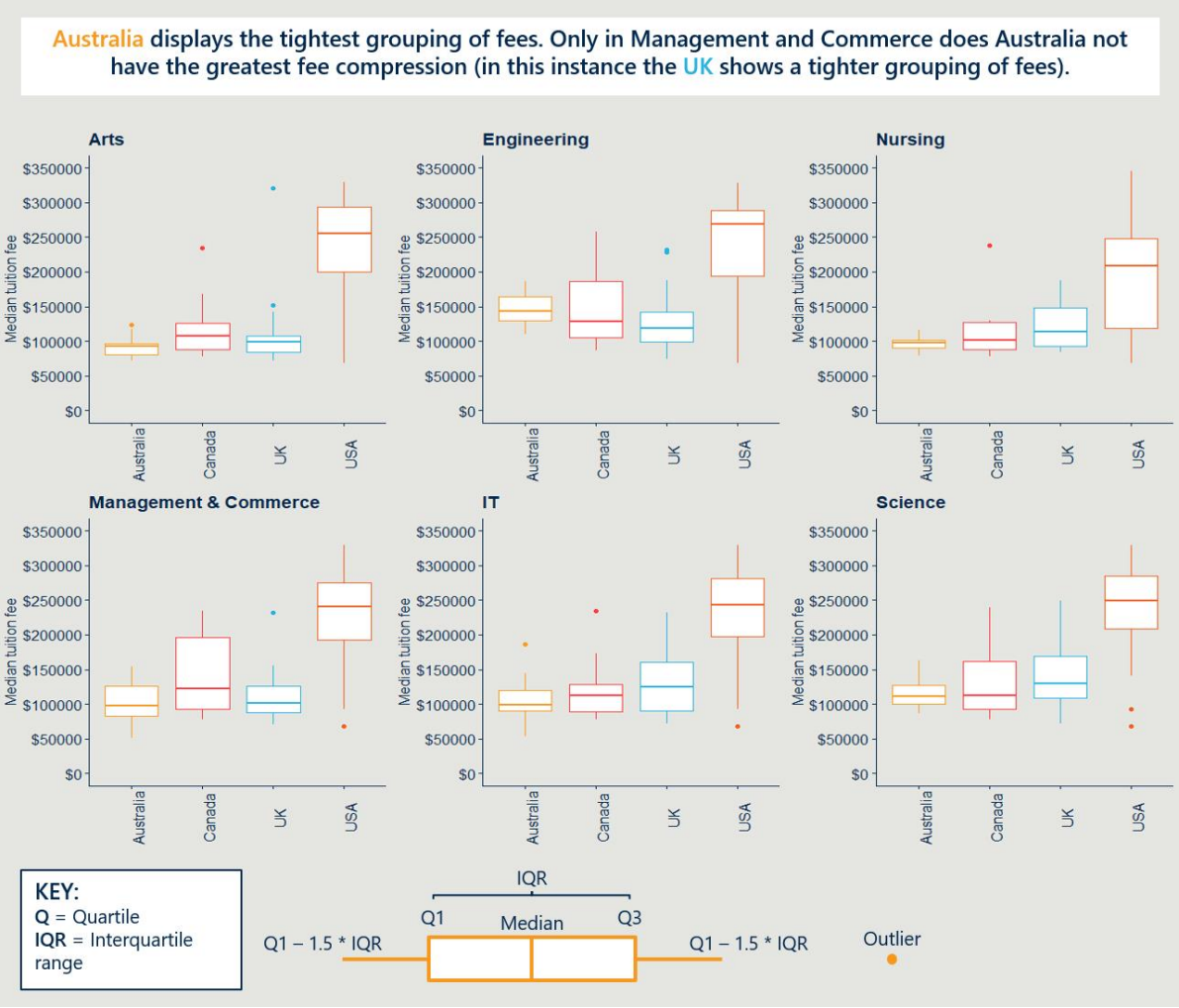
**Figure 16 | Density distribution of median undergraduate institution fees by country**



This price compression effect suggests a pseudo market calibration for fees occurs in Australia. Australia's narrow and tall distribution points to a relative lack of market depth and maturity in Australia, and a potential "follow the leader" approach to pricing. This could also point to benchmarking practices that only factor domestic competition rather than global competitor countries. In contrast, other key destination countries with multiple cities and institutions show less concentration and longer tails. This suggests that these countries cater to a broader price market and institutions may be more distinguishable on price alone compared to Australian institutions.[7]

The compression effect is seen for almost every FOE where Australia displays the tightest grouping of fees (see Figure 17 below). Only in Management and Commerce does Australia not have the greatest fee compression (in this instance the UK shows a tighter grouping of fees).

**Figure 17 | Undergraduate fee spread by country and field of education**




[7] *This project was not exhaustive in institution coverage outside of Australia (nor NUHEPs within Australia), it remains possible that the distributions of other countries may become more compressed with the addition of more institutions. Though it remains likely that their distributions may approach a "normal" shape – one that still indicates a more mature pricing market than Australia.*

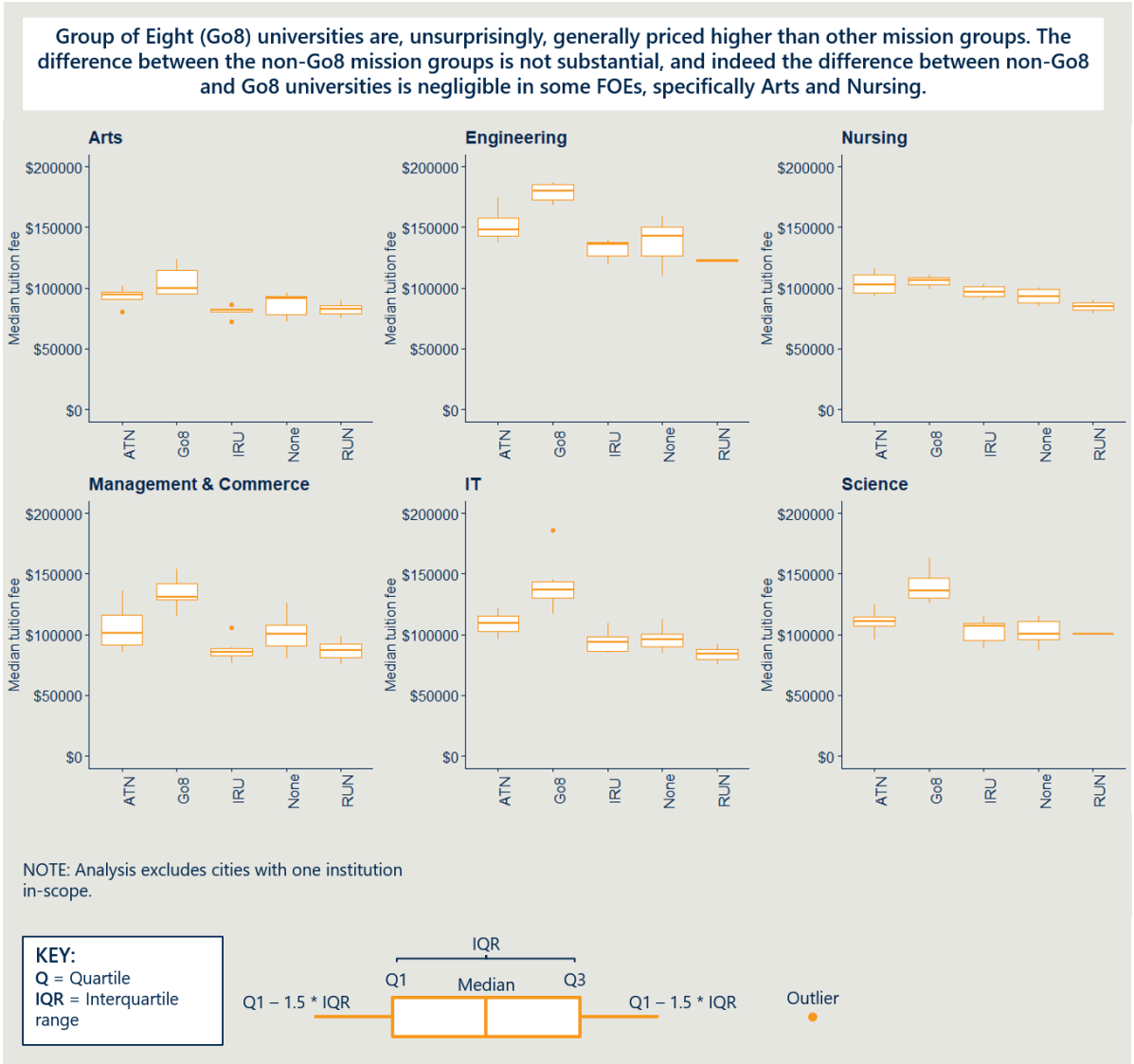
Australia, and Australian cities have the most compressed FOE prices compared with countries with more than one city.

At a city-level comparison, Australia's compression is further evidenced. Apart from a few outlier cases across FOEs, such as Sydney, Australia's city-level prices are strongly compressed around a thin band of fees. So much so, Australian cities are, on average the most compressed when compared to cities from other destination countries with more than one city.

Mission groups in Australia do not demonstrate significant price disparity, even at times inclusive of G08 universities.

The calibration effect noted above is further revealed when comparing fees across Australian university mission groups (see Figure 18 below). Group of Eight (Go8) universities are, unsurprisingly, generally priced higher than other mission groups. This however makes the Go8 universities the exception rather than the norm. The difference between the non-Go8 mission groups is not substantial, and indeed the difference between non-Go8 and Go8 universities is negligible in some FOEs, specifically Arts and Nursing.

**Figure 18 | Australian median undergraduate fee spread by mission group**



## Implications for Australia

- The spread is the span of prices between the most expensive and least expensive course in a given field or segment. In aggregate, the narrow and concentrated spread of Australia's fees suggests that Australia's higher education sector gives international students a more limited range of options.
- By comparison the USA, the UK, and Canada demonstrate greater breadth and heterogeneity in price points. This suggests that these competitor destination countries can cater to a more diverse range of student profiles and preferences.
- Australia's narrow range of fees is indicative of several possible underlying issues. First, it might reflect a lack of institutional and product diversity. Second, it might reflect an unsophisticated 'follow the leader' approach to price setting in the Australian university sector. This issue warrants further investigation.

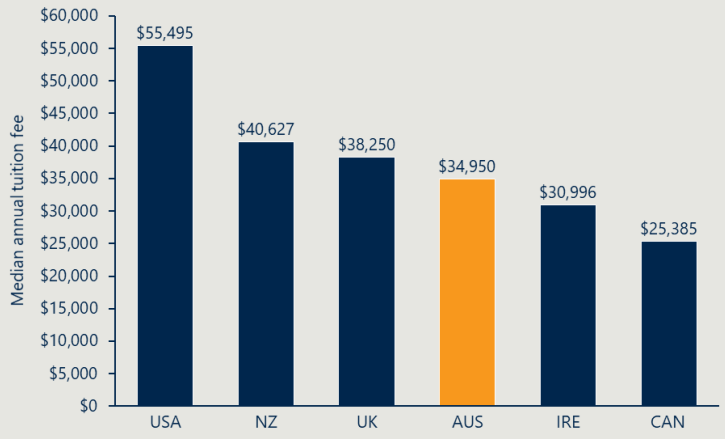
# 3.2 Australia's postgraduate fees sit at the top end of the market

Australia's postgraduate tuition fees are more expensive when compared to other destination countries. Discounting assumptions were not factored in the postgraduate sector. While is it acknowledged that discounting does occur, no clear evidence base exists to provide a useful basis for including discounting assumptions. Australian cities consistently occupy the upper-half of destination cities for price across all fields of education. Program length is a key reason impacting upon Australia's relative expensiveness in the postgraduate sector. There are pros and cons to Australia's longer program lengths, and it should not be assumed that wholescale systematic discounting is warranted. Nonetheless, discounting in some areas may be more warranted in the postgraduate sector.

## 3.2.1 On a per annum basis, the cost of postgraduate programs in Australia appears competitive, but total cost is less competitive due to an above average course length

Australia's aggregate annual postgraduate fee competitiveness is strong. Australia's annual median fee for postgraduate courses is 7 per cent lower than the market median. Australia is also 37 per cent lower than the USA, 14 per cent lower than New Zealand and 9 per cent lower than the UK (see Figure 19 below).

**Figure 19 | Median annual postgraduate cost by country**

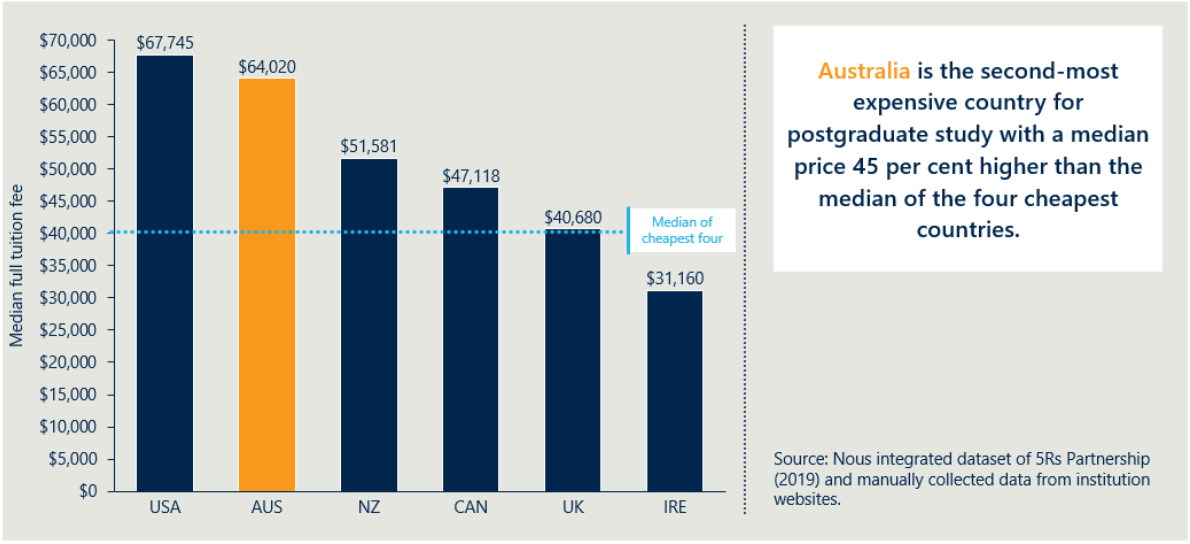



**Australia is highly competitive for annual postgraduate costs with a median fee just under 7 per cent below the global median of in-scope destination countries.**

Source: Nous integrated dataset of 5Rs Partnership (2019) and manually collected data from institution websites.

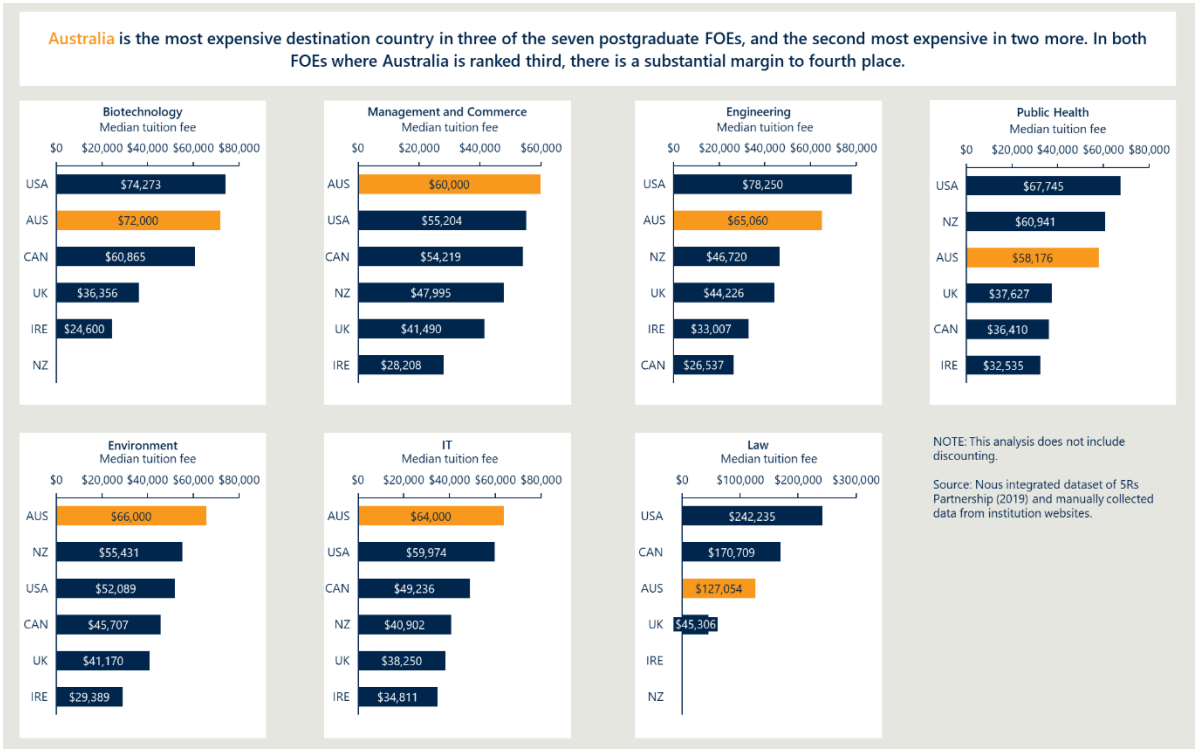
Australia's cost-competitiveness substantially declines, however, when analysing total cost of courses (see Figure 20 below). Australia is the second-most expensive country overall, positioned only 5 per cent below the USA but a significant 19 per cent higher than the next-ranked, New Zealand. This suggests that at a country-level, Australia and the USA are more closely related competitors than any of the other countries.

### Figure 20 | Median total postgraduate cost by country



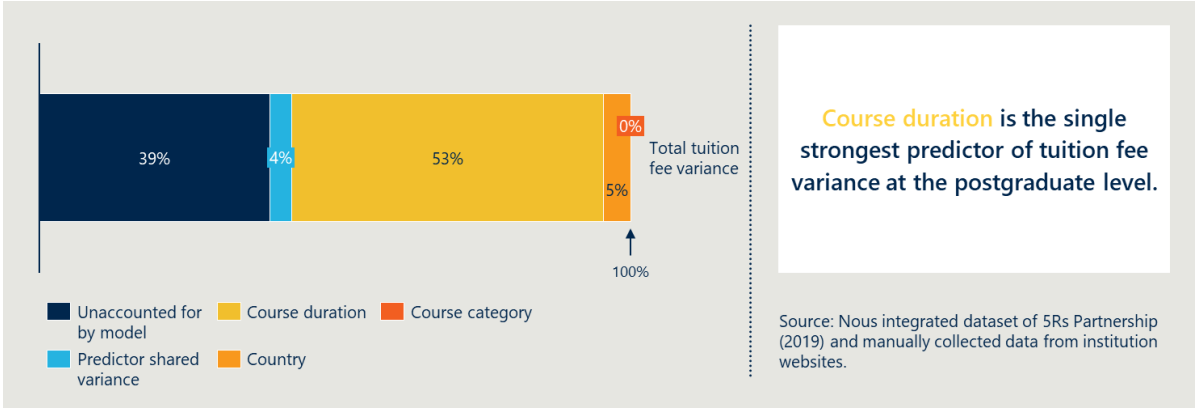

At the FOE level, Australia's median total fee ranks generally either as first or second most expensive (see Figure 21 below). Australia is ranked first in Management and Commerce, Environment, and IT. Australia ranks second most expensive in Biotechnology and Engineering. The gap between Australia and the next most expensive countries in these two FOEs is significant – between $12,000 to $19,000.

### Figure 21 | Median postgraduate tuition fee by country and field of education



Course duration is the evident driver of Australia's declining position between annual and total cost. Course duration is also the strongest predictor of total postgraduate course cost out of a range of predictive factors. Duration alone contributes to one-half of the variance evident in tuition fees at the postgraduate level. This result is statistically significant (see Appendix E for more information) and makes it the strongest single predictor of the cost of a postgraduate course globally (see Figure 22 below). Given the large number of influencing factors at play in higher education and pricing, this is a strong result for a regression model with only three predictor variables.

**Figure 22 | Variance explained in postgraduate tuition fees by key predictors**




Australia's course length is the longest among all competitor countries, likely driven by AQF requirements.

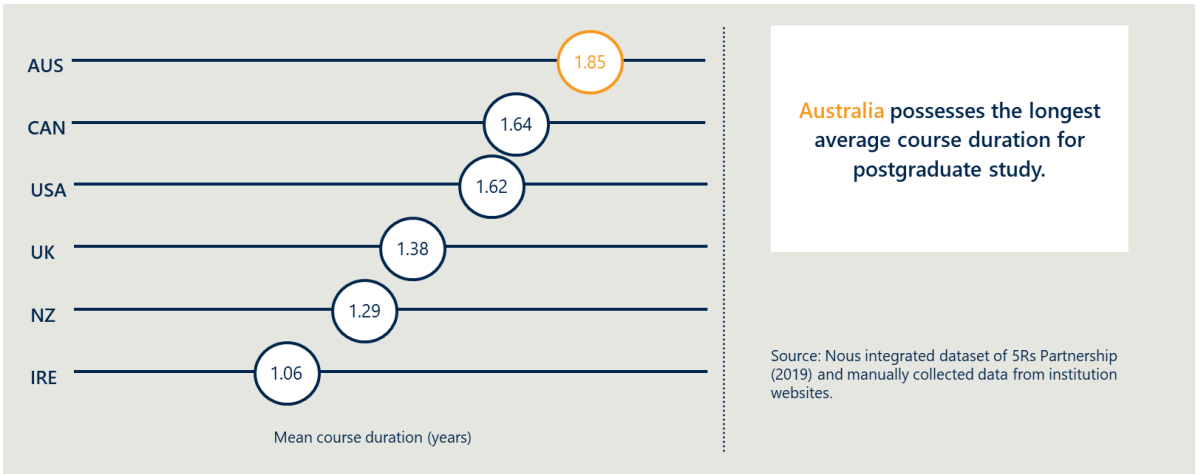
Over 60% of course data collected were 2 years in length, an additional 26% being 1.5 year in length.

Analysis of course duration reveals that Australia's courses are noticeably longer than the other destination countries (see Figure 23 below). This largely stems from the volume of training required to meet the AQF framework. The AQF framework notes the following average volume of training requirements for specific transitions:

- 1.5 years for a student transitioning to a masters degree following a level 7 (bachelor) degree in the same discipline
- 2 years for a student transitioning to a masters degree following a level 7 (bachelor) degree in a different discipline

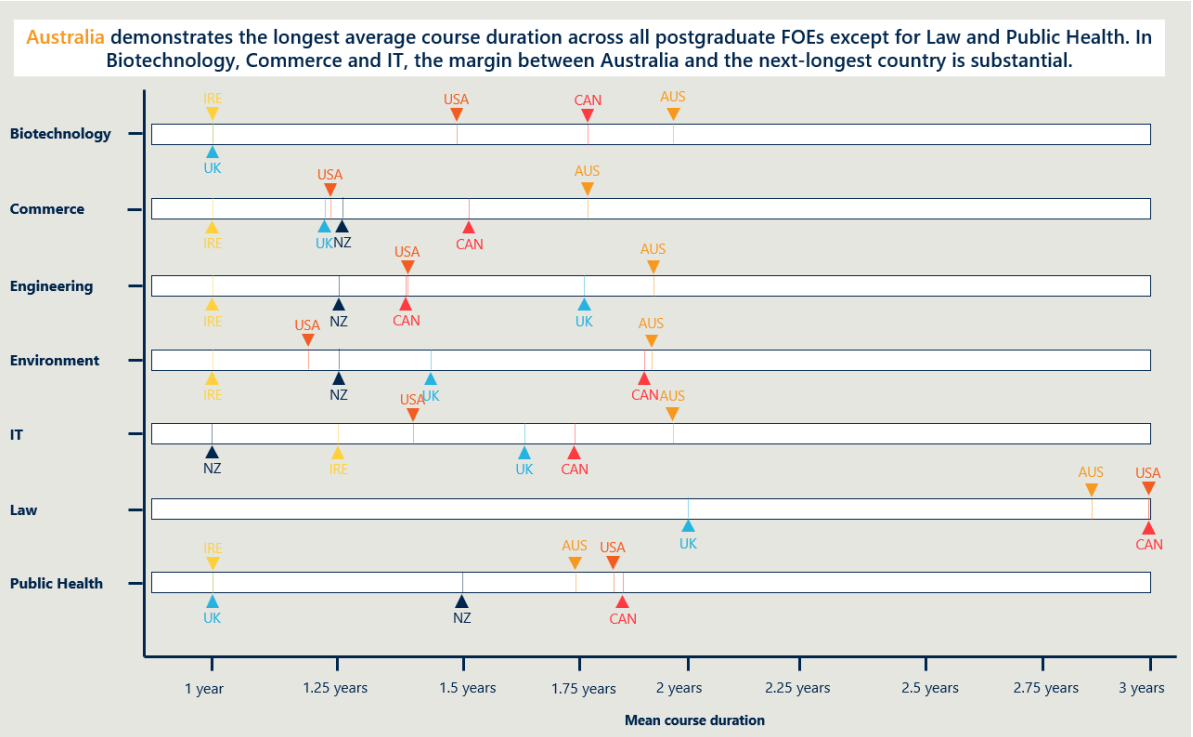
The end result is an average duration in Australia that is 11 per cent longer than the overall market average of 1.66 years.

**Figure 23 | Average postgraduate course duration by country**



The pattern of longer course length being the key reason for higher total cost is consistently evident at the FOE level (see Figure 24). Australia's average course duration is longer than the market average across every postgraduate in-scope FOE, except for Law and Public Health. When considering the postgraduate level as a whole, this means students will not only make a larger financial investment in Australia (except for the USA), but also a larger time investment which holds its own social and economic challenges in addition to increasing total living costs.

**Figure 24 | Average postgraduate course duration by field of education for Australia**




## Implications for Australia

- The bias towards two-year masters programs by coursework puts Australia at the top end of all other countries in terms of average postgraduate program length.
- Australia is ranked first or second in terms of total fees in five of seven FOEs. In each of these, average course length is over 12 per cent or higher than the international median, highlighting that course length is consistently a key factor driving Australia's higher priced postgraduate courses.
- It is possible that when many masters programs were adjusted to be two years in length to meet AQF requirements, there was not sufficient consideration given to the impact on tuition fees compared to other countries. The fact that international student enrolments in postgraduate programs has grown so strongly, suggests that this has not had a severe negative impact, although it is not possible to observe might have otherwise been the case.
- While Australia's longer course lengths do lead to higher tuition fees (and also higher cost of living), this is not necessarily a disadvantage in the eyes of all students. Longer course lengths can provide prospective students with greater access when they do not have a relevant discipline background, when they are looking for more in-depth and rigorous program elements, and when they are seeking more opportunities for work integrated learning. The opportunities that derive from longer course should be highlighted strongly when marketing Australian postgraduate courses.

- In the longer-term, Australian institutions may need to consider whether to reduce Australia's total course fees, particularly in a more competitive or constrained environment.

### 3.2.2 Significant discounting is needed for Australia to compete on price alone

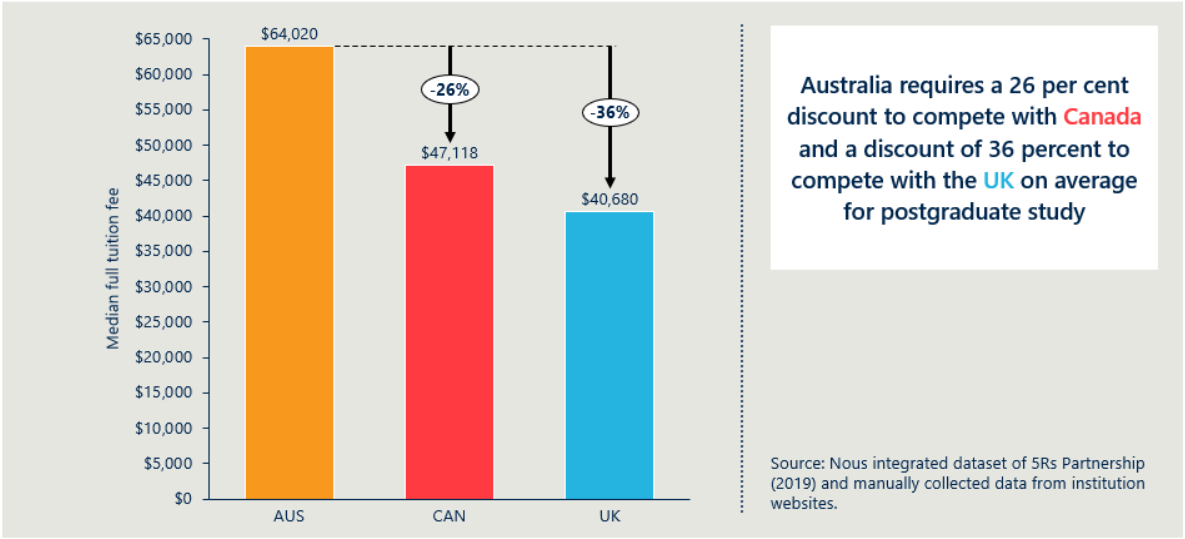
There is the potential that some Australian institutions are already conducting significant discounting and are price competitive. This analysis highlights the level of systematic discounting required across Australia to compete with key competitor countries.

While it has been noted that longer program length, hence longer program fee, does provide benefits, it is instructive to understand the scale of discounting required were Australia to find itself needing to compete more on price.

As noted previously however, discounting assumptions have not been included in postgraduate analysis as robust data on discounting practices does not exist. It is acknowledged though that discounting does occur both at the undergraduate and postgraduate level.

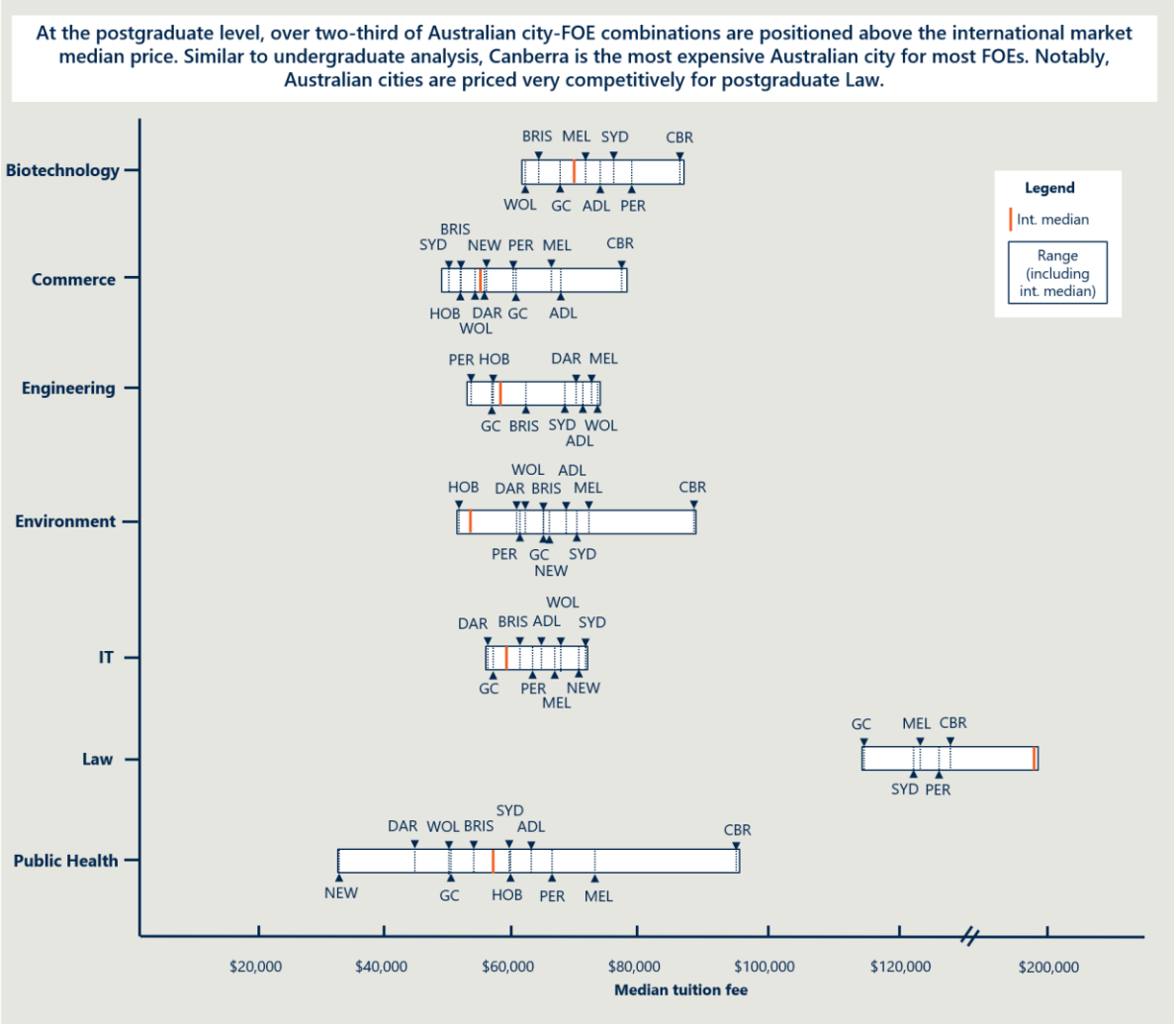
At a sticker price comparison, for Australia's median postgraduate fee to equal Canada's, Australia requires a considerable discount of just over one-quarter of total fees. An even greater amount of discounting is required to compete with the UK. Australian institutions would have to on average reduce fees by over one third (see Figure 25 below).

**Figure 25 | Discount required for Australia to compete with Canada and the UK**




As expected, given Australia's relatively higher postgraduate fees, over two-thirds of city-FOE combinations sit above the market median (see Figure 26 overleaf). Cities with particularly high proportions of above-average fees include Adelaide, Canberra, Gold Coast, Melbourne, Perth, Sydney and Wollongong. Each of these cities are above the median in at least four of the seven FOEs. Of note are Sydney and Melbourne who each are above the median in five and six of the seven FOEs respectively.

**Figure 26 | Australian cities median fee across postgraduate FOEs**




## Implications for Australia

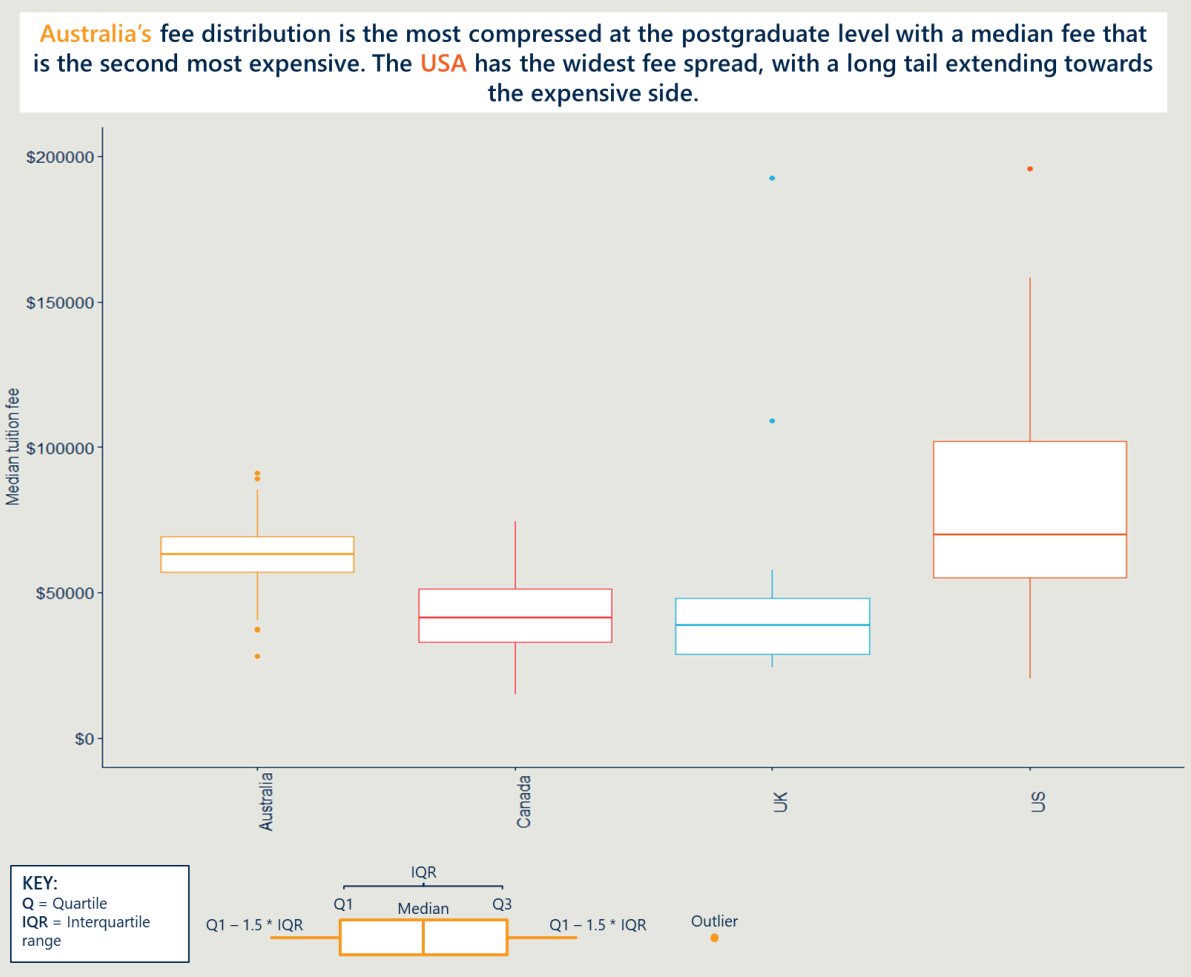
- The analysis indicates that a large systematic discount of above 25 per cent would be required for Australia to be price competitive with postgraduate programs in Canada and the UK, noting that price is one of many choice factors.
- Given consistently higher prices (with the exception of postgraduate law), a shock in the global economy that increases the price sensitivity of international students could have an adverse impact on Australia's postgraduate student flows.
- Institutions, particularly those in non-capital cities, may wish to re-examine their pricing for postgraduate programs as many are positioned close to or above the global median price in a given FOE.

### 3.2.3 There is a narrower spread of postgraduate course fees both between and within Australian cities relative to competitor countries and cities

While Australia's fees are the most compressed amongst in scope competitor countries, postgraduate fees are generally more compressed in all countries compared with undergraduate fees.

Australia's fees at the postgraduate level are more compressed than other destination countries (see Figure 27 below). This is consistent with the tight compression seen at the undergraduate level. Again, this suggests that once an international student has decided on Australia as a destination country, price may not be a significant factor in their decision-making since cities are largely similar. Unlike the undergraduate level however, postgraduate fees in other destination countries are also quite compressed. Fees in Canada and the UK show similar levels of compression, though the UK has some institutions that are more expensive outliers. The USA however generally shows a greater spread of fees.

**Figure 27 | Distribution of median postgraduate institution fees by country**

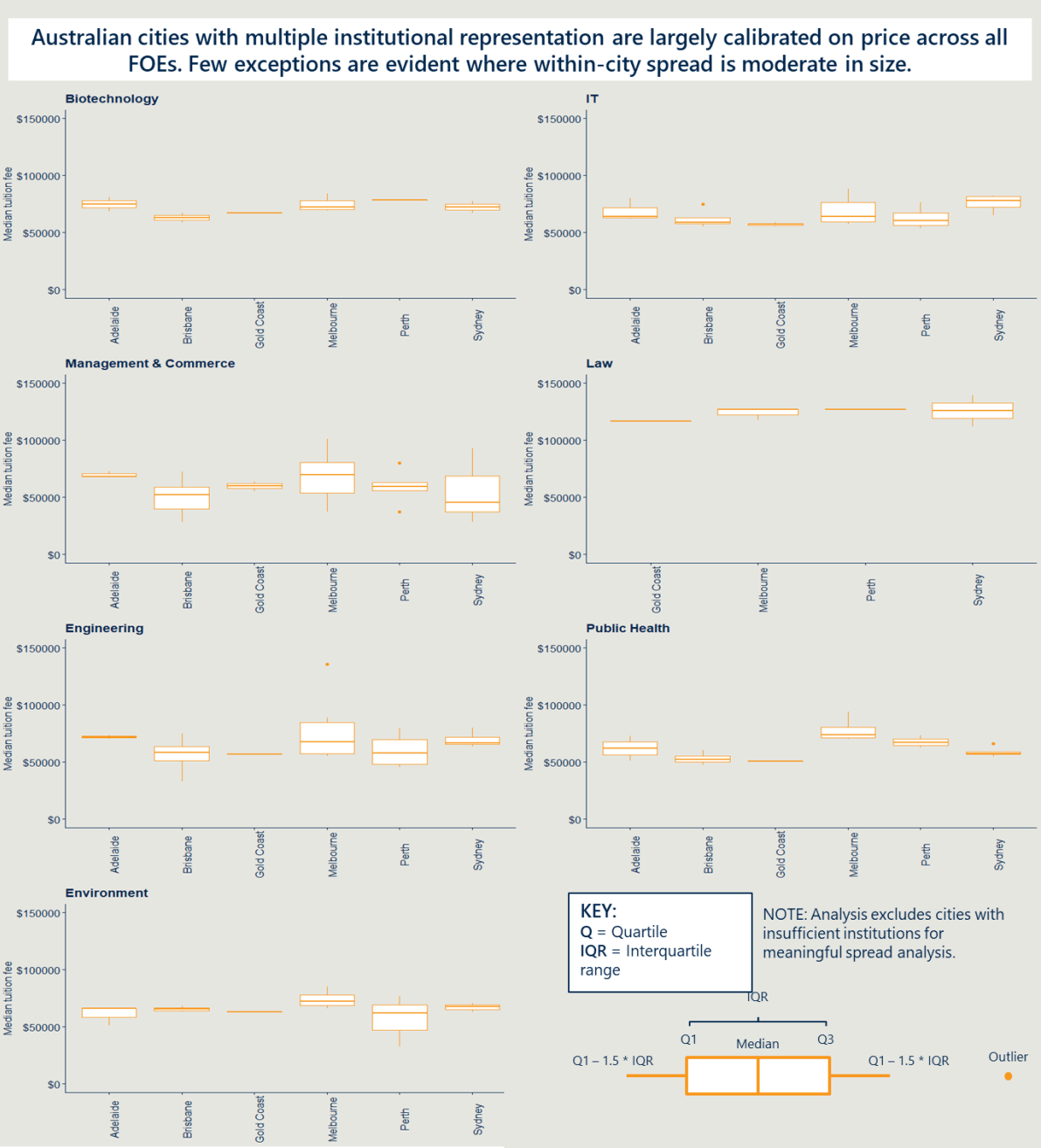



Analysis of fee spread at the country/FOE level further highlights Australia's fee compression. In all FOEs, apart from Management and Commerce and Public Health, Australia has lower fee diversity. In some FOEs, in particular Management and Commerce and IT, fee compression across all countries is minimal.

Postgraduate fee compression in Australia is consistently seen at multiple levels, whether it be country, FOE, or city-based analysis.

This compression effect is again visible upon analysis at the city-level (see Figure 28 below). Similar to undergraduate analysis, Australia's institutions appear to be locked in a form of market calibration with little price differentiation across and within cities. Melbourne displays a marginally wider range of fees between its institutions in three FOEs, but even these ranges occupy a relatively small band of fees in comparison to the range sizes of other countries.

**Figure 28 | Australian postgraduate fee spread by city and field of education**



## Implications for Australia

- Australia's fee compression at the postgraduate level is not as pronounced as at the undergraduate level and other countries, particularly Canada and the UK, show a similar lack of fee diversity.
- Lack of fee differentiation across study destination countries is a potential indicator of a general lack of maturity and sophistication in the pricing of options provided to international students.
- Given its strong growth in the postgraduate sector, there is an opportunity for Australia to develop a market leading position by catering to a more diverse range of prospective students spanning lower and higher willingness to pay. This would require Australian institutions to be more targeted and explicit about the differentiated segments of the market they are seeking to attract.

# 4 Cost of living comparison

*This section of the report examines Australia's relative position when it comes to cost of living. This is an important component to the affordability analysis. Cost of living comprises both prices and consumption. Prices were identified using Numbeo, an online price comparison site. Eight scenarios were developed to conduct an international comparison of consumption. Analysis in this section outlines where Australia, and Australian cities, sit in relation to key international markets for cost of living.*

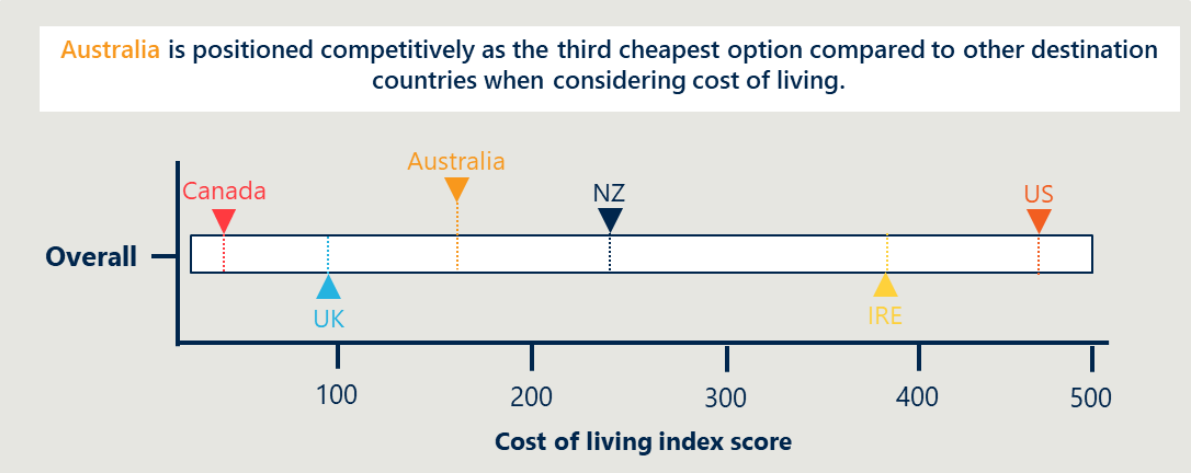
## 4.1 Australian cities occupy much of the competitive middle ground in relation to cost of living

Australia is a comparatively affordable study destination for international students. To compare countries and cities, a "cost of living index" with a minimum score of 0 and a maximum score of 500 was developed (see Appendix F for further methodological detail). Australia received an overall score of 163, placing it as the third most affordable country (see Figure 29 below).

Prices across a number of goods and services were included in the development of this index (see Appendix D for detail). Health insurance, while being an important cost for students, was not included due to the difficulties in collating comparable costs and coverage. Separate analysis of data from institution, government and insurance provider websites in each country[8] indicates that Australia's health insurance is comparable to the UK, Canada, Ireland and New Zealand. The USA appears to be the standout country with higher health insurance costs.

The USA is the most expensive place to live as an international student. The USA is followed by Ireland, and while only the city of Dublin was represented in this report, research illustrates that Ireland overall is an expensive place to live, with costs being the second highest in the European Union.[9]

**Figure 29 | Cost of living score by country across all eight scenarios[10]**




[8] Analysis was conducted by visiting a range of official government and university websites across each destination country to create an average health insurance cost

[9] Hennigan, M (2017), *Dublin cost of living same as London's: Irish prices 2nd highest in EU, accessed Sep 2019 at* http://www.finfacts.ie/Irish_finance_news/articleDetail.php?Dublin-cost-of-living-same-as-London-s-Irish-prices-2nd-highest-in-EU-797

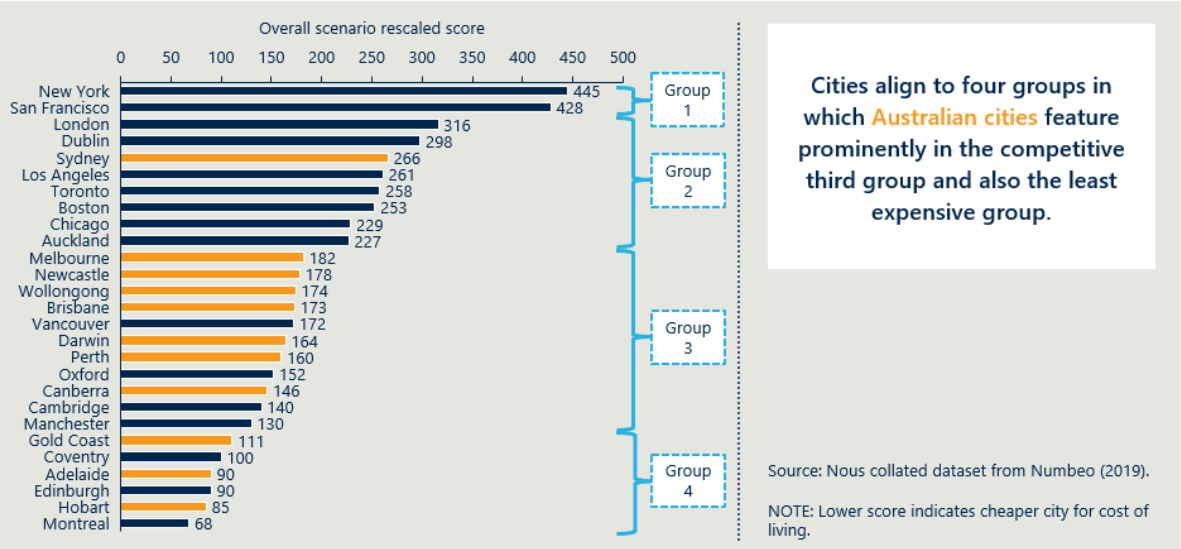
[10] The positioning of Canada close to 0 on the index does not indicate that it is extremely inexpensive to study there. Instead it highlights Canada's comparative inexpensiveness when considering other destination countries.

At the city-level, Australian cities are similarly well positioned as reasonably priced cost of living options. Four key cost of living groups can be identified: 1) very expensive, 2) expensive, 3) moderate, and 4) less expensive (see Figure 30 below). Most Australian cities are in group 3, the moderate priced category. For the majority of Australian cities in group 3, there is minimal difference between their overall score. Australian cities also occupy half of the positions in the less expensive group.

Within Australia, cities in both regional and metropolitan regions are both relatively dispersed among the groups. This suggests that cities generally do not break according to metro and regional divide.

The key outlier for Australia in this analysis is Sydney, which sits in group 2. The large gap between Sydney and other Australian cities is supported by research from Worldwide Cost of Living 2019 Survey[11] and the Mercer 2019 Cost of Living Ranking.[12] Sydney's positioning in the expensive group places it on par with other major international study and tourist destinations like London and Los Angeles.

**Figure 30 | Overall scenario score by city**

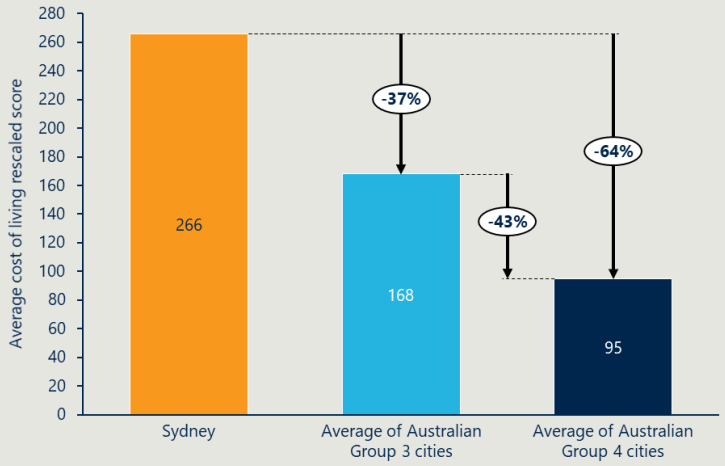



The extent of Sydney's expensiveness is further highlighted when examining its relativity to Australian city group averages. Sydney is 37 per cent more expensive than the average of Australian cities in group 3, and 64 per cent more expensive than Australian cities in group 4 (see Figure 31 overleaf).

[11] The Economist (2019), *Worldwide Cost of Living, accessed June 2019 at* https://www.eiu.com/topic/worldwide-cost-of-living

[12] Mercer (2019), *Cost of living city ranking*, accessed June 2019 at https://mobilityexchange.mercer.com/Insights/cost-of-living-rankings

**Figure 31 | Sydney's price differential compared to average of other Australian cities**




Sydney is between approximately one-third and two-thirds more expensive than the average cost of living score of the other Australian cities according to their cost of living group.

Source: Nous collated dataset from Numbeo (2019).

NOTE: Lower score indicates cheaper city for cost of living.

## Implications for Australia

- Australian cities are comparatively affordable study destinations for international students, and this can continue to be communicated strongly to prospective students.
- Sydney is at a significant cost of living disadvantage compared with other Australian cities. Melbourne, while often singled out as another expensive city, is part of the moderate cost of living group.
- The fact that Sydney continues to be the prime study destination underscores its overall attractiveness as a study destination of choice.
- Several Australian cities in the moderate cost of living group (including Newcastle, Wollongong, Darwin and Perth) should be mindful about claiming a cost of living advantage compared to other destinations given there is only a small difference between a large number of cities in Australia.
- Cities in the lower cost of living group (including Gold Coast, Adelaide and Hobart) appear to have a genuine cost of living advantage that can be used as a meaningful selling point.

## 4.2 City's positions fluctuate across the cost of living scenarios, but not substantially

The eight scenarios created for this report provide a proxy for student spend, ranging from lower cost of living scenarios to higher cost of living scenarios. City's rank positions fluctuate across these scenarios, but not substantially. Those cities at the lower cost range in Figure 30 generally tend to be lower cost across most scenarios and vice-versa for more expensive cities.

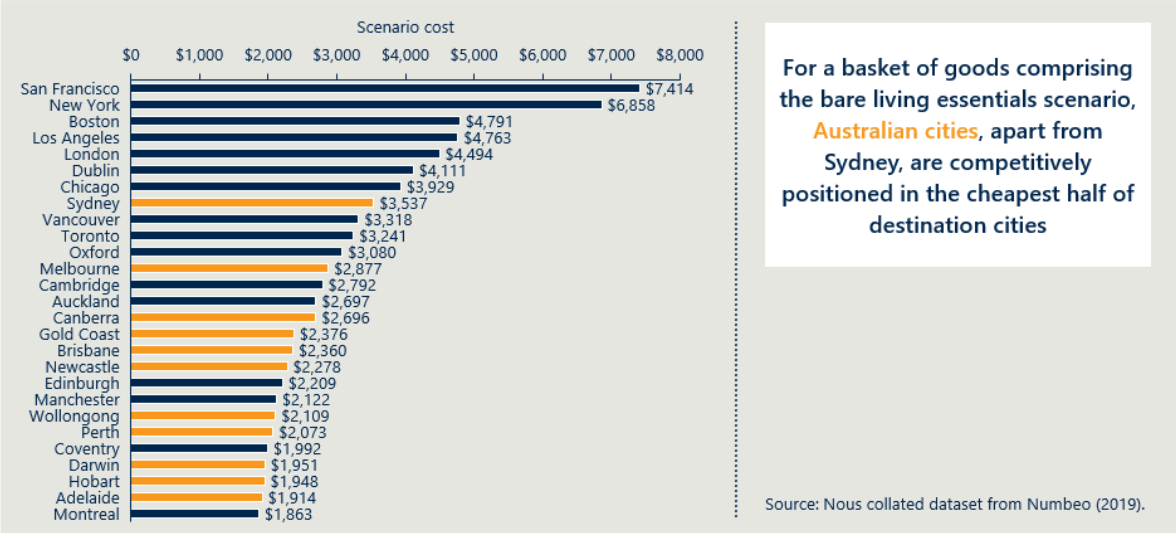
Three scenarios provide a lens through which to visualise the position of cities:

- bare living essentials (expensive scenario)
- weekly shop (medium scenario)
- general transport scenario (less expensive scenario).

Bare living essentials are an important scenario, as they represent a range of relatively universal goods that international students purchase. This includes expenditures such as average monthly rent price as well as monthly internet and utilities prices. The inclusion of rent makes this an expensive scenario compared to

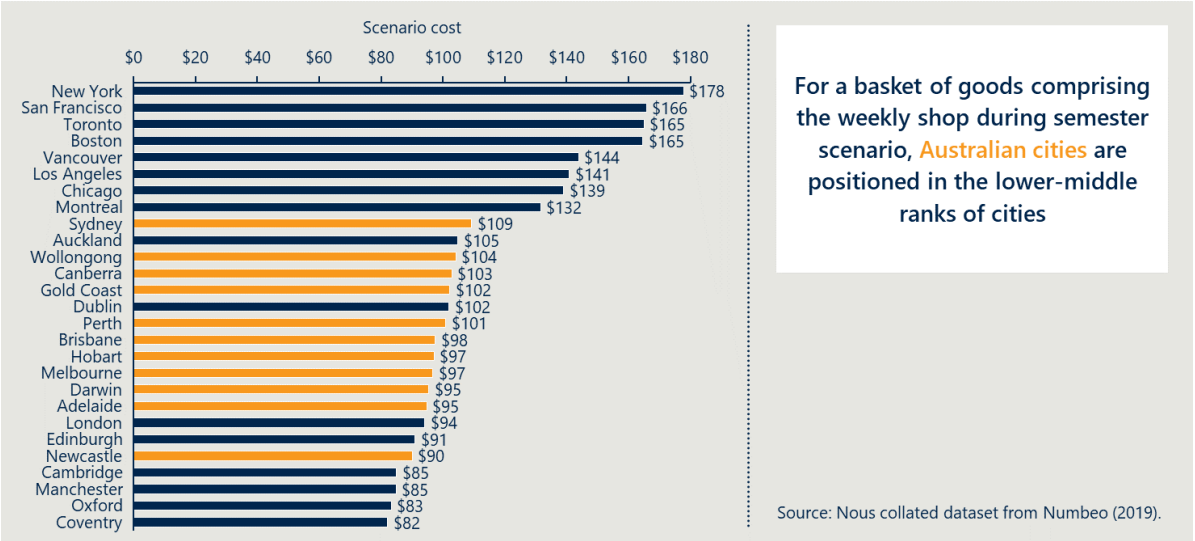
the other seven that were developed. Australian cities are somewhat dispersed in this scenario, but largely feature in the cheapest half of all destination cities, apart from Sydney (see Figure 32 below). Regionality of cities does not appear to be a driving factor in cost of living rank, with regional Australian cities being spread evenly throughout city positions. Melbourne is again the second-most expensive Australian city.

**Figure 32 | City costs for bare living essentials scenario**




The weekly shop scenario is a mid-priced basket of goods in comparison to the bare-living essentials. This basket includes goods such as a variety of fruit and vegetables, as well as other common products such as milk, chicken, beef, bread and eggs. This grocery basket of goods represents a likely consumption scenario for international students. For this scenario, Australian cities are concentrated more so in the middle ranks of destination cities (see Figure 33 below). A difference of 19 per cent separates the highest ranked Australian city, Sydney, from the cheapest ranked Australian city, Newcastle.

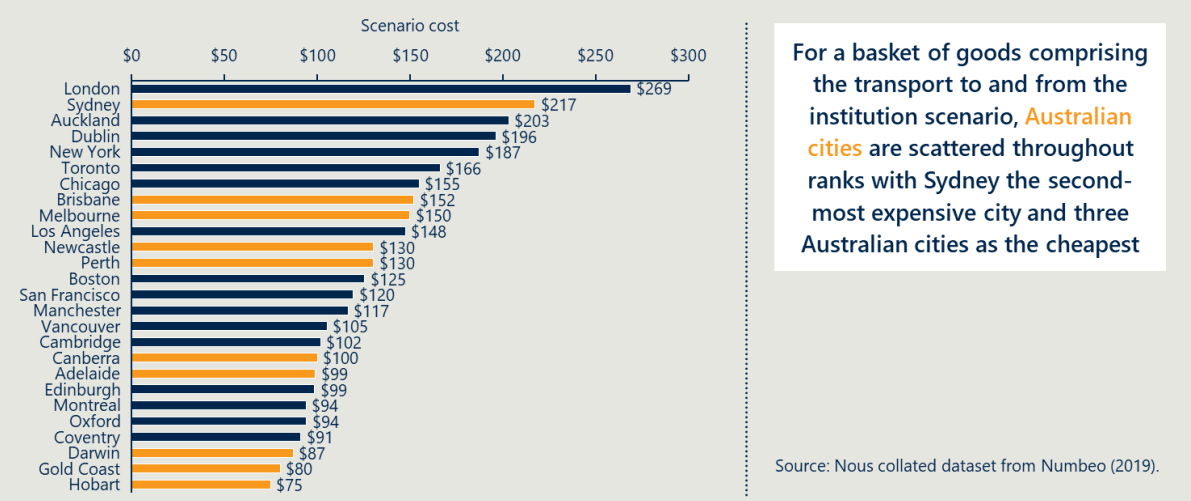
**Figure 33 | City costs for weekly shop during semester scenario**




The general transport basket represents an example of a less expensive basket of goods, given that the only item is a monthly transport pass. For this basket, Australian cities are dispersed throughout in-scope destination cities (see Figure 34 overleaf). Three cities, Sydney, Brisbane and Melbourne feature in the top ten most expensive cities. In this collection of top ten cities for transport price, Sydney is the second-most

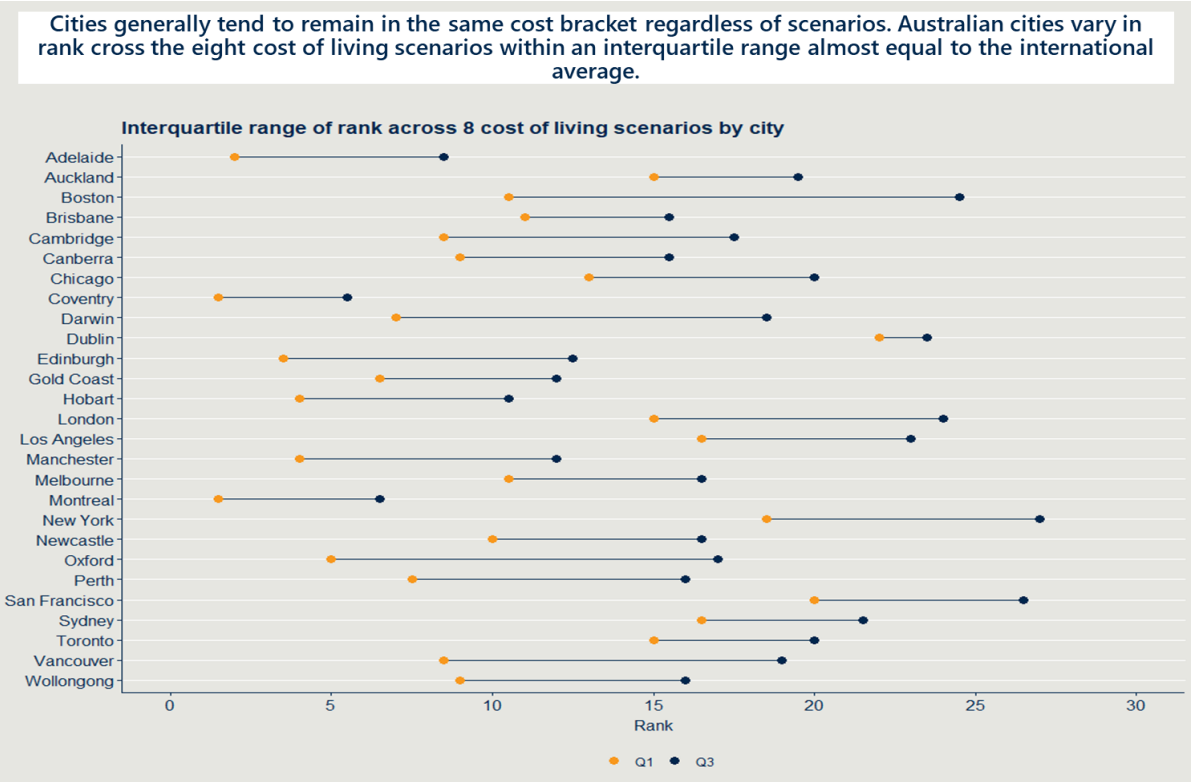
expensive city, but is a substantial 21 per cent cheaper than London, the most expensive city. The wide dispersion of Australian cities evident in this analysis is unique to this scenario compared to the previous two.

### Figure 34 | City costs for general transport scenario (monthly transport pass)




As the above three scenarios illustrate, while cities certainly fluctuate across the scenarios in terms of their relative rank position, overall, shifts in rank are not substantial. Cities on average shift by a rank of 7 between scenarios, with Australia's cities reflecting this average (see Figure 35 below).[13]

### Figure 35 | Cities rank range between scenarios




[13] The interquartile range was used instead of the full range as a one of rank difference meant that the true average rank shift is not captured. By using the interquartile range, one-off outliers have been excluded.

## Implications for Australia

- The consistency of city's rank positions indicates that Australian cities are generally affordable and well placed across a range of consumption scenarios. Australian cities in particular are well positioned in the middle-to-bottom ranks for core day-to-day living expenses (rent and utilities) and weekly groceries.
- The higher cost of living in Sydney is not driven by the cost of daily groceries, but rather is driven by the cost of rent and transport. Note that this analysis does not take into account the differences in transport concessions available to international students, which would ameliorate differences between cities.

# 5 Affordability index

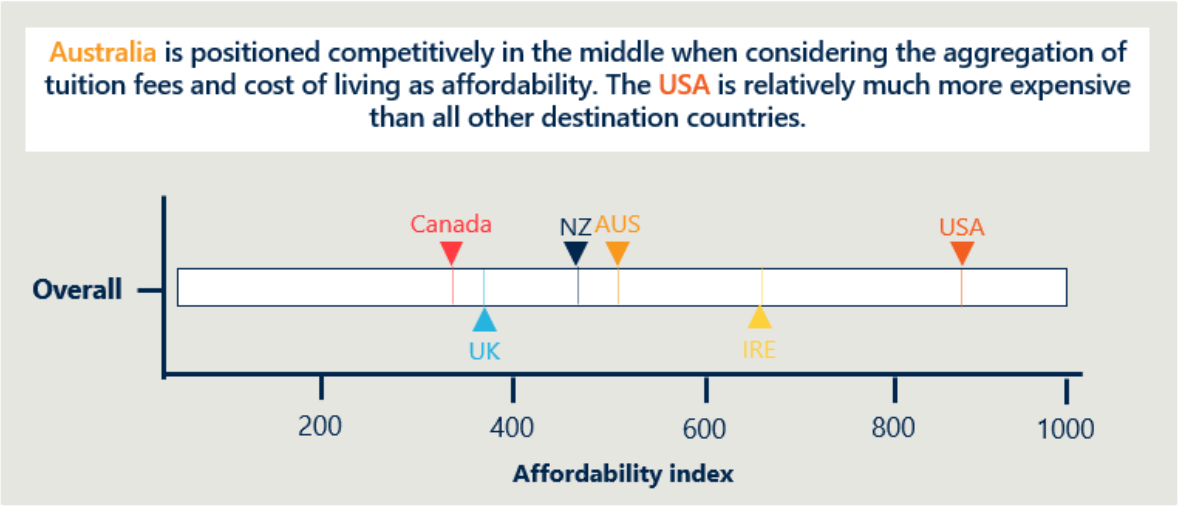
*This section integrates fees and cost of living to create a city-level Affordability Index. The Affordability Index provides an indication of overall price competitiveness of cities. Drawing on analysis across the fee and cost of living comparison sections, a single composite metric has been created whereby cities were given a standardised score out of 500 across each of these two components. This has been used as the basis to compare cities. This analysis delivers insight to understand how Australian cities overall affordability compares to competitor cities.*

## 5.1 Australia represents a moderately affordable proposition for international students

Australia is a moderately affordable study destination when considering overall affordability. On aggregate, Australia sits in the middle of the in-scope countries on the Affordability Index (see Figure 36 below). Country's index scores were calculated by amalgamating analysis across the tuition fee and cost of living analysis. Analysis was scaled on an index between 0 – 1000, with more affordable countries being closer to 0, and less affordable countries being closer to 1000.

Australia scores very closely to New Zealand, which is ranked as the third cheapest country. Ireland and the USA are evidently much less affordable than the other destination countries. Canada represents the most affordable option for students on aggregate, with the UK marginally behind it.

**Figure 36 | Country-level Affordability Index**




The Affordability Index can be further represented at the city-level with cities scores across the two components, cost of living and tuition fees, being highlighted. Many Australian cities are positioned very competitively on the Affordability Index (see Figure 37 overleaf). Australian cities largely sit in the lower-middle portion of the tuition fee component and the middle of the cost of living component. Australian cities are mostly condensed in a small and competitive portion of the index. Key USA destinations such as Boston, San Francisco and New York occupy the upper thresholds of the index. Conversely, the UK is largely well positioned on the index with three cities, Coventry, Edinburgh and Manchester placed in the very bottom, indicating a highly competitive overall price for study and living. Key exceptions for the UK are Oxford and Cambridge, which sit high on the tuition fee component.

While there is a positive correlation between cost of living and tuition fees at the city-level, it is only a moderate correlation. This means just because a city is expensive for living costs does not necessarily

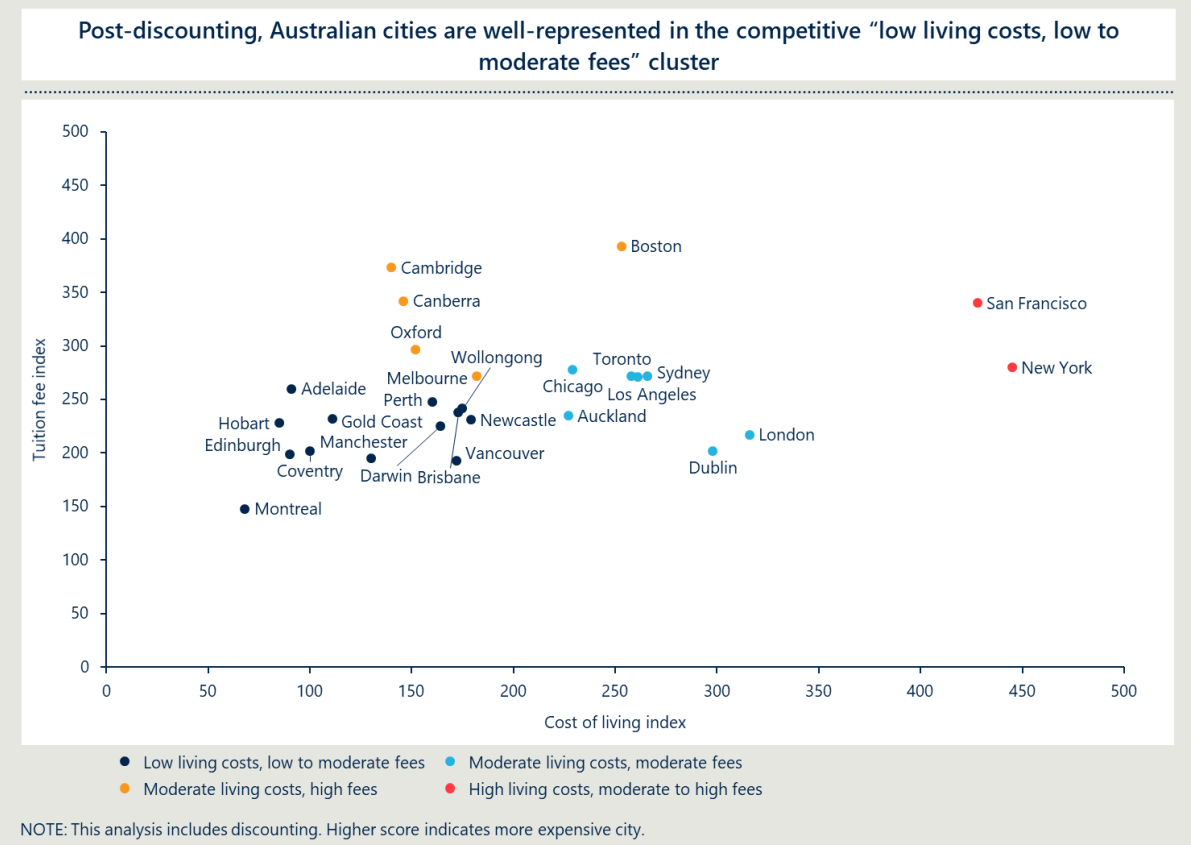
mean it is commensurately as expensive for tuition. Instead, cities can be aggregated into smaller competitive groups using a clustering algorithm on the affordability index. Four groups are identified through this clustering process:

1. Low living costs, low to moderate fees
2. Moderate living costs, moderate fees
3. Moderate living costs, high fees
4. High living costs, moderate to high fees

Australian cities largely sit in the 'low living cost, low to moderate fees' group with Canberra and Sydney being the only outliers.

The clustering process highlights which international cities can be considered equivalent to Australian cities in terms of affordability. The Affordability Index further demonstrates that cities diverge more on cost of living than they do on tuition fees. The spread between Montreal (least expensive cost of living) and New York (most expensive cost of living) is greater than the spread between Montreal (least expensive tuition fees) and Boston (most expensive tuition fees).

**Figure 37 | Affordability Index with clusters**

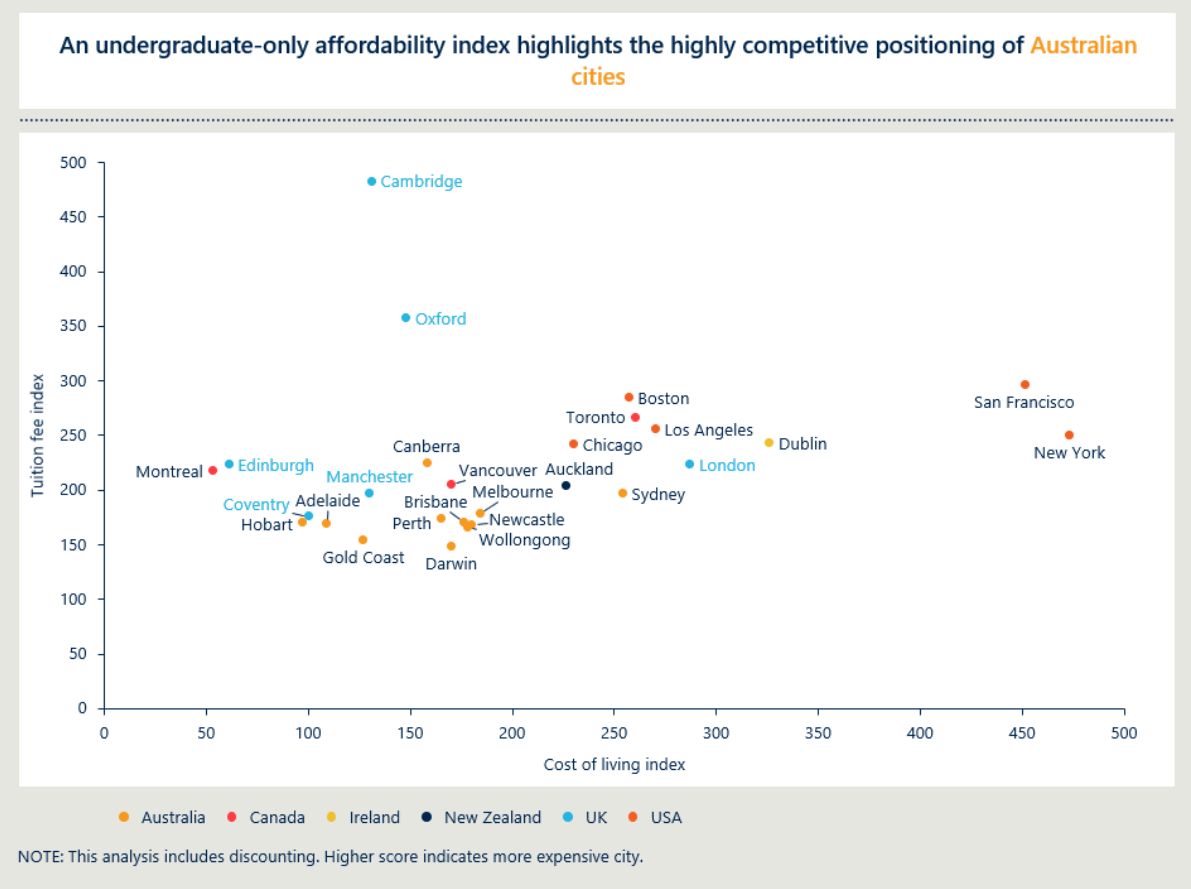



NOTE: This analysis includes discounting. Higher score indicates more expensive city.

The Affordability Index can be further decomposed into an index for each course level, where the tuition fee component is comprised of only one course level and the cost of living component being weighted based on the average course length of the city.

For undergraduate study, Australian cities represent very affordable options for students (see Figure 38 below). Australian cities occupy much of the low living cost and low to moderate tuition fee space. Conversely, several cities in the USA and the UK represent some of the least affordable options for students.

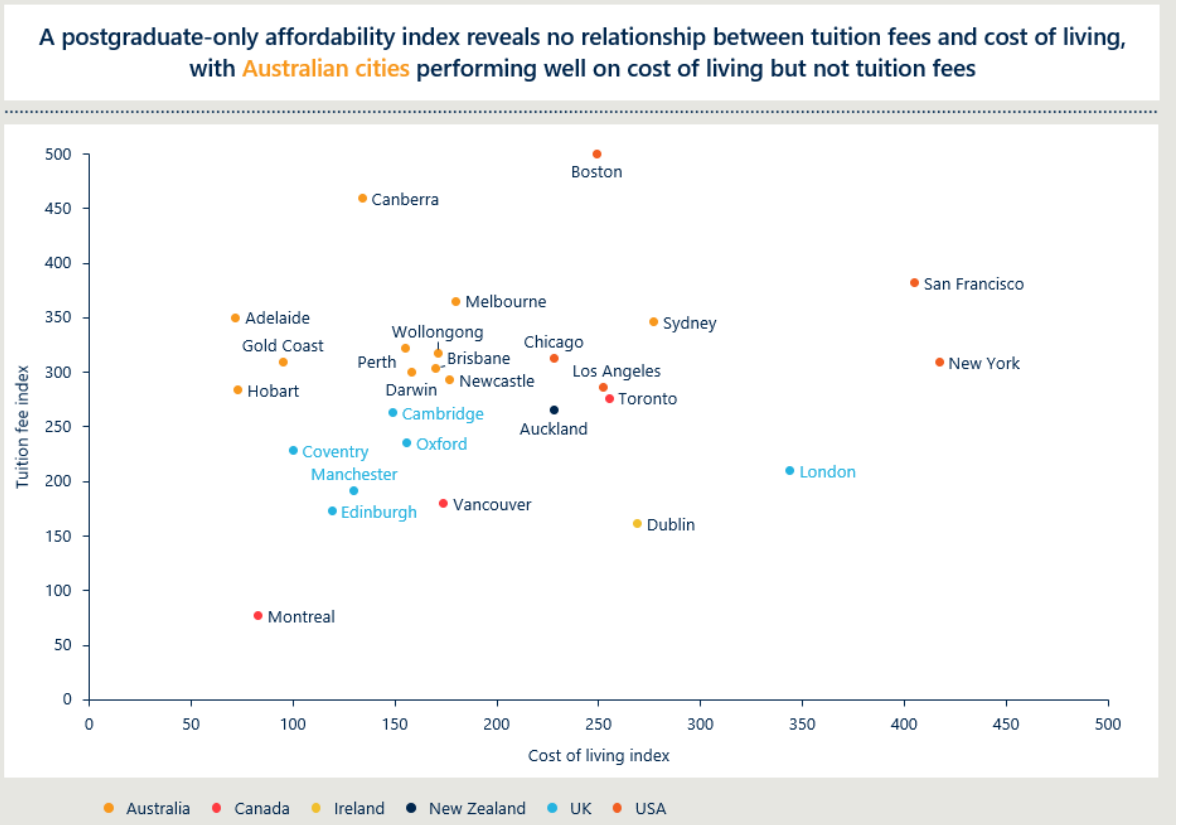
**Figure 38 | Undergraduate-only Affordability Index**




NOTE: This analysis includes discounting. Higher score indicates more expensive city.

For postgraduate study, unsurprisingly, Australian cities perform less favourably than for undergraduate study (see Figure 39 below). The primary driver of this weakening of relative positioning for Australian cities is the longer average course duration. Not only does this increase total program fees but it also increases relative living costs, resulting in a higher Affordability Index position. Australian cities are positioned entirely above a tuition fee index score of 250 (the midpoint). Canberra in particular stands out as the second most expensive city for tuition overall.

**Figure 39 | Postgraduate-only Affordability Index**




NOTE: This analysis does not include discounting. Higher score indicates more expensive city.

## Implications for Australia

- The Affordability Index is an aggregate measure incorporating the relative competitiveness of study destinations in terms of tuition fees and cost of living.
- Australia, at an aggregate level, is a moderately affordable study destination. However, some of Australia's direct competitors like the UK and Canada have a more affordable offer. This implies that Australia will need to continue competing on a range of other factors, aside from cost alone, to ensure it retains and improves its global position.
- Australian cities overall are positioned well in terms of their affordability across tuition fees and cost of living. Most cities sit in either the 'low living cost, low to moderate fees', or the 'moderate living cost, moderate fees.' The key outlier is Canberra, which has fees placing it in the 'high fee' category despite comparatively low cost of living.
- Australia perform strongest in the undergraduate sector where Australian cities represent some of the most affordable options. At the postgraduate sector however, Australian cities are less affordable, largely driven by the tuition fee component of the Affordability Index.

# Part 3 | Employment returns analysis

This part of the report focuses on comparing the employment returns of international students. Scope is limited to international students who study abroad and then return to their home country to work. This eliminates the effects of domestic migration policy and economic conditions in destination countries. Scope is also limited to comparing Australia, the UK, and the USA due to data limitations.

While this part of the report seeks to isolate employment returns based on country of study, it is clear that many factors influence this return. For instance, economic factors in the source country impact employment, as do individual factors such as years of prior work experience. Furthermore, international students who study abroad will often be from a higher socioeconomic status (SES) background and as such, likely to get good jobs due to connections and networks, regardless of where they studied. While this report seeks to determine differences in employment returns across multiple dimensions (country, level of study, FOE), further research should be conducted to confirm findings.

Employment returns have been defined as the aggregation of three core components. The first two are student specific, being: 1) employment rate, and 2) salary rate and growth. The third factor is employer specific, being employer preferences for hiring graduates across destination countries. The combination of these factors has determined the final Employment Index (EI).

# 6 Employment rate analysis

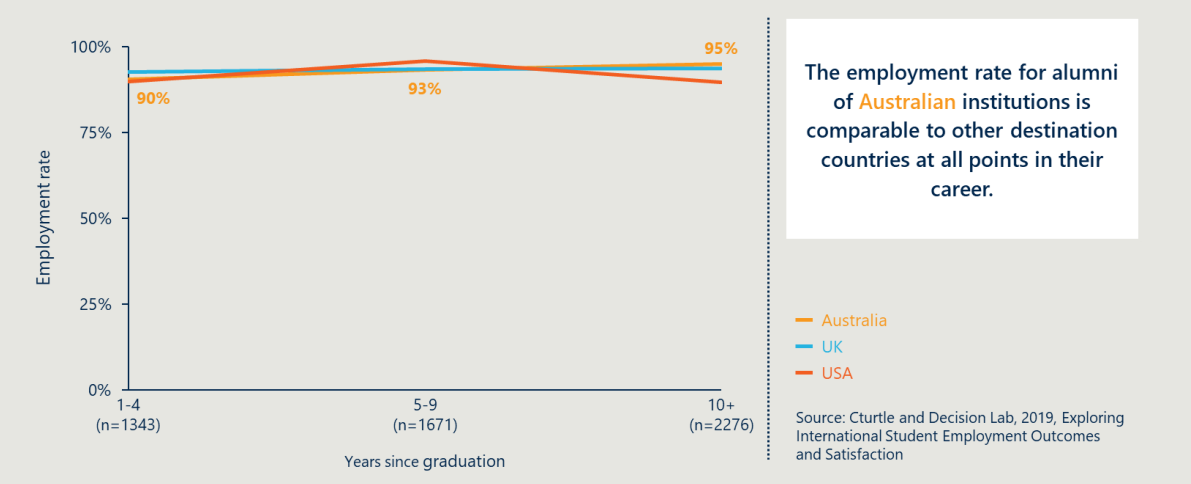
*This section presents an analysis of the employment rate of international students studying in Australia, the UK, and the USA. Much of the analysis focuses on graduate outcomes (1-4 years since graduation). It is likely that beyond 4 years since graduation, the link between employment rate and country of study is weakened and fluctuations are more indicative of alumni lifestyle choices, than they are of the quality and reputation of where they studied.*

## 6.1 Australian alumni report an employment rate that is consistently high and competitive with other study destination countries

Australian alumni report employment rates that are similar to our competitors across the short, medium, and long-term (see Figure 40 below). Reported average employment rates are high for alumni of all destination countries, ranging from 90 to 95 per cent.

It is relatively unsurprising to see such high employment rates among international students. Students who study overseas are often from high socioeconomic backgrounds and are therefore likely to have above-average levels of social and human capital, assisting them to obtain employment upon returning to their home country. Nonetheless, international study is likely to play an important role in obtaining employment. While not directly applicable to Australia, a survey conducted by Universities UK International indicated that 83 per cent of international student respondents considered a UK degree to be helpful when finding employment.[14] This finding highlights that international study does play a role when finding employment.

**Figure 40 | Employment rate over time by destination country**

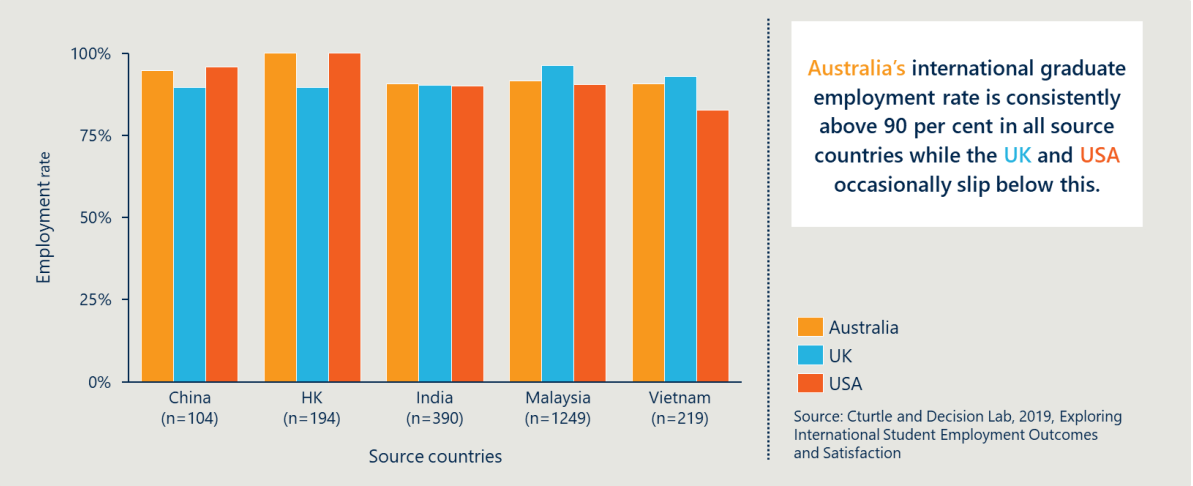



Breaking these results down by source country and focusing on graduate employment (1-4 years since graduation), Australian alumni returning home to work in China, Hong Kong, India and Malaysia report average graduate employment rates, that are very similar to, or higher than, USA alumni (see Figure 41 overleaf). In Malaysia and Vietnam, UK alumni report the highest average graduate employment rate.

[14] Universities UK International (2019), *International Graduate Outcomes 2019*, accessed June 2019 at https://www.universitiesuk.ac.uk/International/Documents/international_graduate_outcomes.pdf

While it is difficult to isolate the reason for the different results according to source country, and further data is required to ensure a robust sample size, one possible reason relates to the nature of the geopolitical and education relationship between countries. For instance, the Malaysian education system has historically been influenced by the UK education system. This may result in Malaysian employers having a better understanding of the qualifications obtained at UK institutions. Additionally, there are several UK higher education institutions with branch campuses in Malaysia. This may boost the brand recognition of UK institutions among Malaysian employers and make them more inclined to employ graduates of these institutions.

**Figure 41 | Graduate employment rate by source country and destination country**




## Implications for Australia

- All international graduates tend to report relatively high employment rates- this is to be expected given the above average levels of social and human capital of international students. However, Australia's international graduate employment rate is consistently above 90 per cent in all source countries, while the UK and the USA occasionally slip below this rate.
- This consistently high graduate employment rate suggests that employers across different source markets recognise and value the quality of Australian higher education. This recognition is likely to be more important immediately after graduation when other differentiators, like work experience and professional networks, are less of a factor.

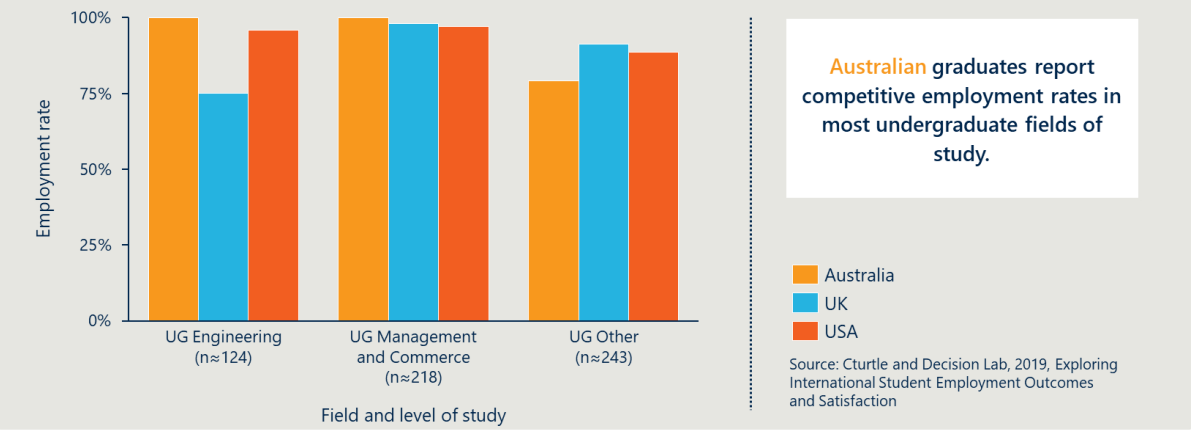
## 6.2 In the key fields of Management and Commerce and Engineering, Australia performs comparatively better at an undergraduate level than postgraduate

At the undergraduate level, international alumni from Australia report strong graduate employment rates in Management and Commerce, and Engineering, with an employment rate of 100 per cent (see Figure 42 below). While it likely that that this result does not reflect the true graduate employment rate (and that sample size may distort results), it is indicative of the strength of Australian degrees in overseas labour markets.

Employment rates are consistently high for undergraduate Management and Commerce graduates from all destination countries (see Figure 42 overleaf). This may be the result of institutions being aware of the

importance of such degrees for international students and focusing on providing an education experience that boosts the employability of graduates in this field.

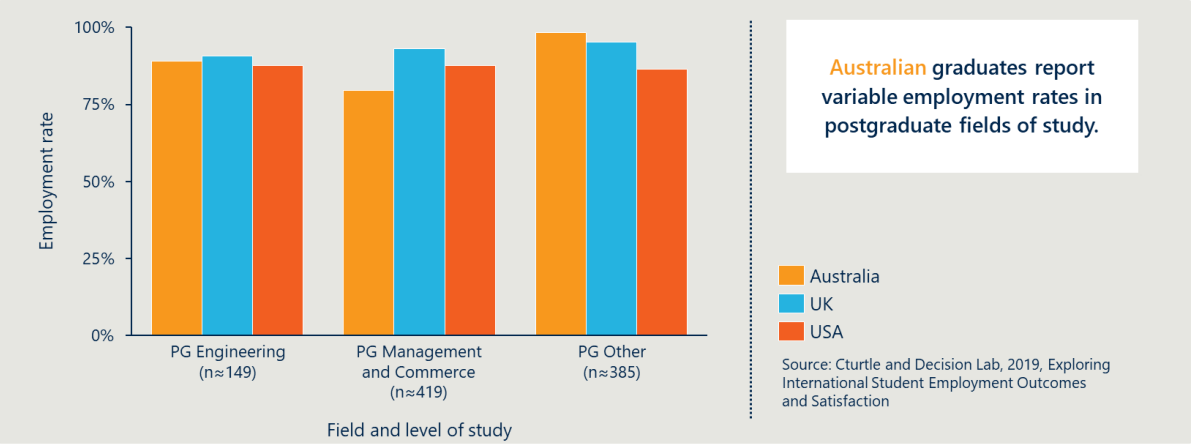
**Figure 42 | Graduate employment rate by undergraduate field of study and destination country**




For postgraduate degrees, Australian alumni report variable graduate employment rates. Postgraduate Engineering and 'Other' students from Australia report graduate employment rates which are similar or higher than competitor countries. However, postgraduate Management and Commerce students from Australia report a substantially lower graduate employment rate than their UK or USA counterparts.

Interestingly, UK postgraduate alumni report consistently higher graduate employment rates than alumni of the USA (see Figure 43 below).

**Figure 43 | Graduate employment rate by postgraduate field of study and destination country**




## Implications for Australia

- Alumni from Australian institutions report strong employment results in undergraduate Management and Commerce, and Engineering, degrees that receive that receive high volume student flows. This is a virtuous cycle between employment outcomes and student recruitment. Australian institutions should consider how to achieve a similar outcome in other FOEs.
- Contrary to undergraduate employment outcomes, employment returns from a postgraduate degree in Australia are lower in the key fields of Management and Commerce, and Engineering. If Australia is to continue to grow postgraduate enrolments, this is an issue that warrants attention and further research.

# 7 Salary analysis

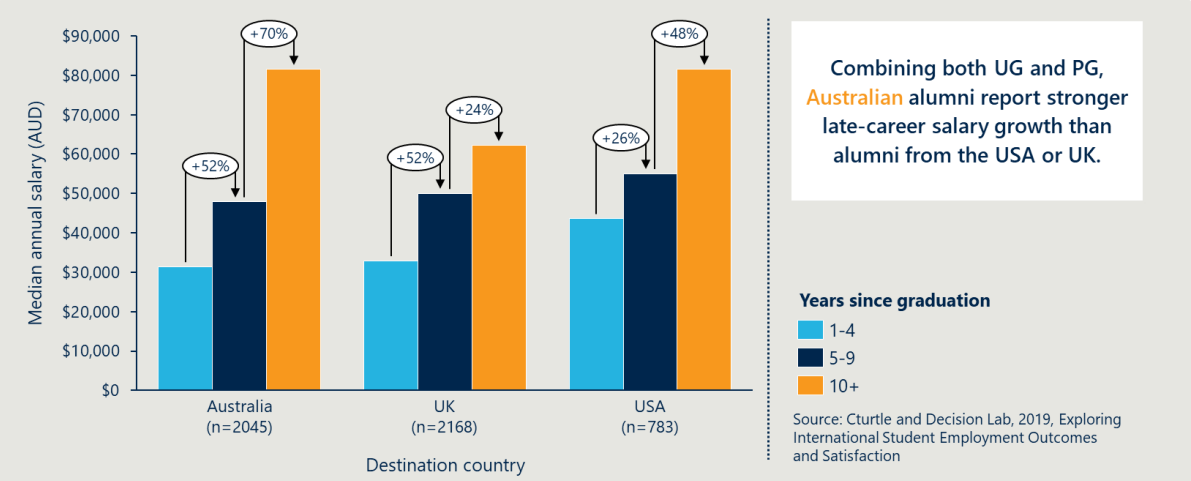
*This section examines and presents findings on both salary growth and reported long-term salary for international students studying in Australia, the UK, and the USA. Analysis is presented across multiple lenses, including source country, level, and field of education. This analysis delivers insight regarding both graduate and long-term salary outcomes for international students.*

## 7.1 Australian alumni report stronger salary growth over the mid to long-term compared to USA or UK alumni

Combining both undergraduate and postgraduate responses, international graduates of Australian institutions report the lowest graduate (1 – 4 years since graduation) salary compared to our key competitors, though the difference between Australia and the UK is marginal (see Figure 44 below). Alumni of institutions in the USA report a 39 per cent higher median annual graduate salary than Australian graduates, across all levels and fields of study. In graduate recruitment, it is likely that country and institution of study are the primary differentiators, as graduates don't have work experience and networks yet. The findings in Figure 44 suggest that employers generally hire graduates from institutions in the USA into higher paying positions, revealing their underlying preference for USA graduates in the absence of other differentiating factors.

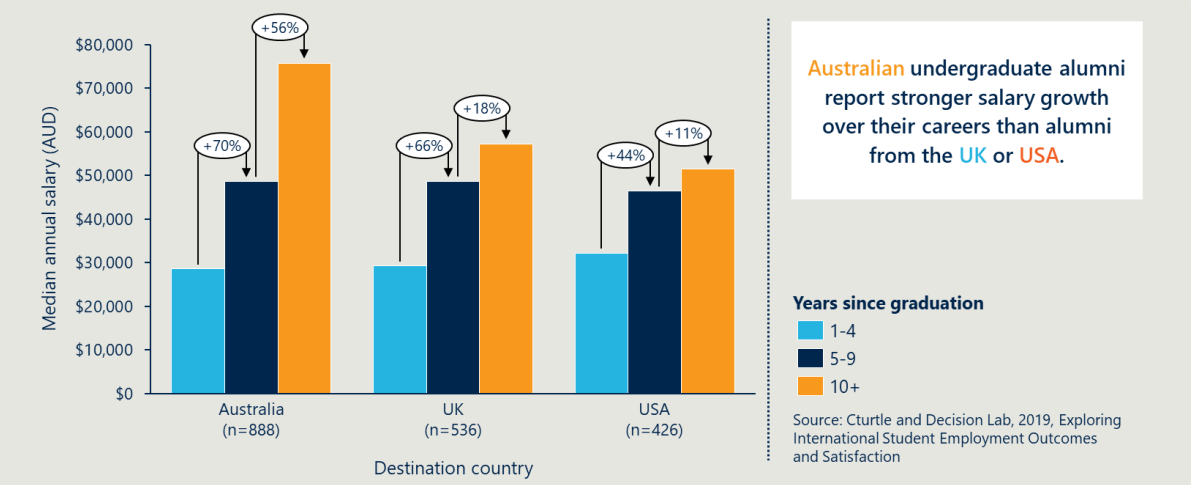
Over the course of their career however, alumni of Australian institutions receive the strongest salary increases. Between 5-9 years since graduation and 10+ years since graduation, alumni of Australian universities report a salary increase of 70 per cent. This is substantially higher than the UK (24 per cent), and the USA (48 per cent). The large salary increase later in their careers, means that alumni of Australian institutions sit almost at parity with alumni of institutions in the USA when considering median long-term salary.

**Figure 44 | Median annual salary over time by destination country**



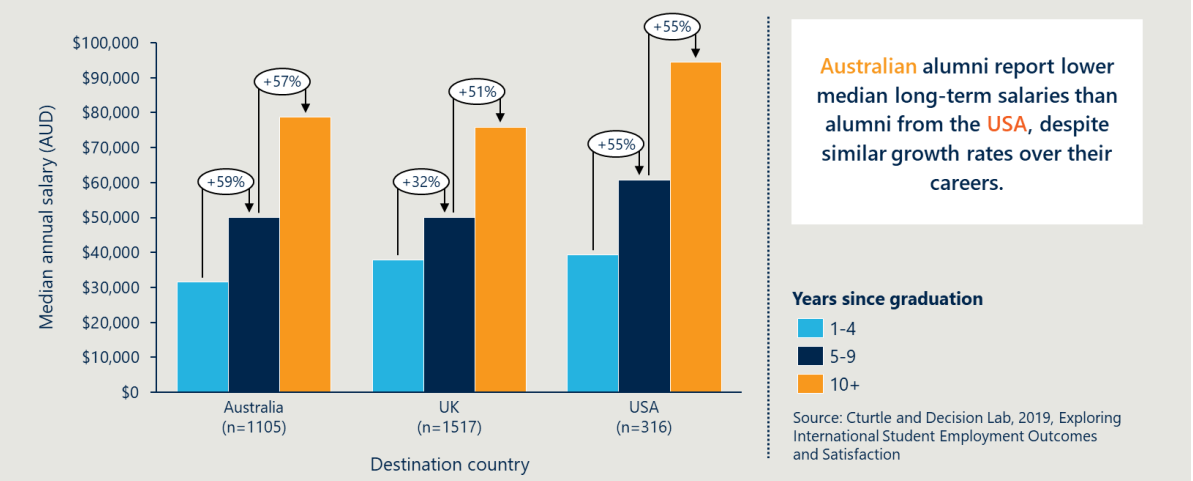

The driver of this mid-to-late career salary growth can be seen in Figure 45 overleaf, whereby Australian undergraduate alumni report stronger growth rates in their mid to late careers than UK or USA alumni. This results in Australian undergraduate alumni reporting the highest long-term salary compared to the UK or USA.

**Figure 45 | Median annual salary over time by destination country (undergraduate)**




This trend is not mirrored at the postgraduate level, where Australian postgraduate alumni report salary growth rates in line with our competitors (see Figure 46 below). Students who studied at institutions in the USA report the highest long-term postgraduate salary.

**Figure 46 | Median annual salary over time by destination country (postgraduate)**




## Implications for Australia

- Australia ranks third in median *graduate* salary, lagging slightly behind the USA and the UK. However, graduates of Australian institutions report higher *long-term* salaries which are very competitive, particularly compared with those reported by UK alumni.
- Alumni of Australian institutions see an especially strong salary growth in the medium-term. This could point to a strength of Australian institutions in preparing graduates for mid-career or management positions. This is particularly true for undergraduate students studying in Australia. More research would be required to validate and better understand the apparent acceleration in salary trajectory of the graduates of Australian institutions over time.

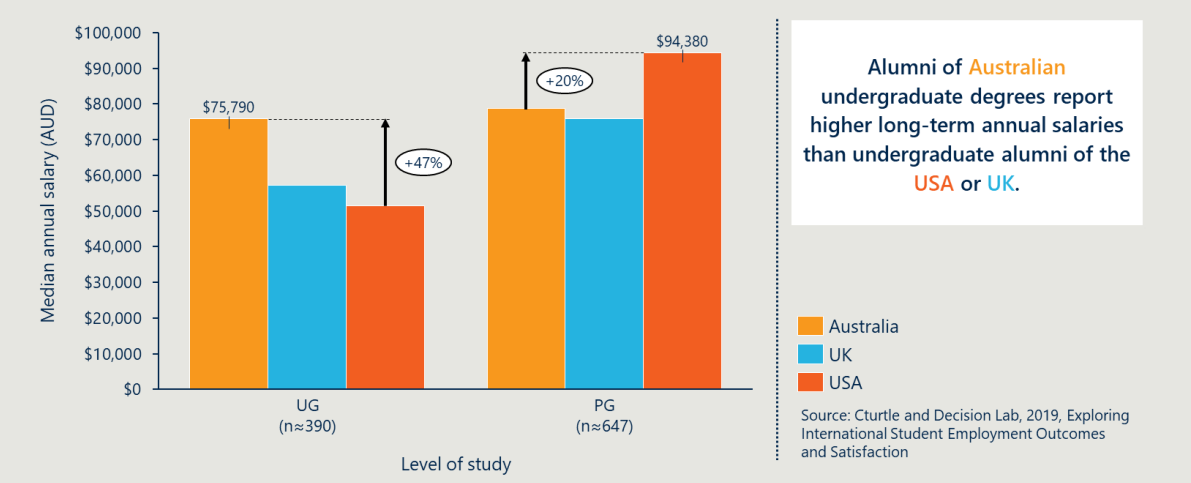
## 7.2 Australian undergraduate alumni report consistently high long-term salaries, but we are less competitive at a postgraduate level

Australian international student alumni who studied undergraduate degrees report long-term annual salaries that are substantially higher than their USA and UK counterparts.

Australian international student alumni who studied undergraduate degrees report earning long-term annual salaries that are substantially higher than their USA and UK counterparts (see Figure 47 below). Australian undergraduate alumni report a long-term salary that is 47 per cent higher than those reported by alumni of institutions in the USA.

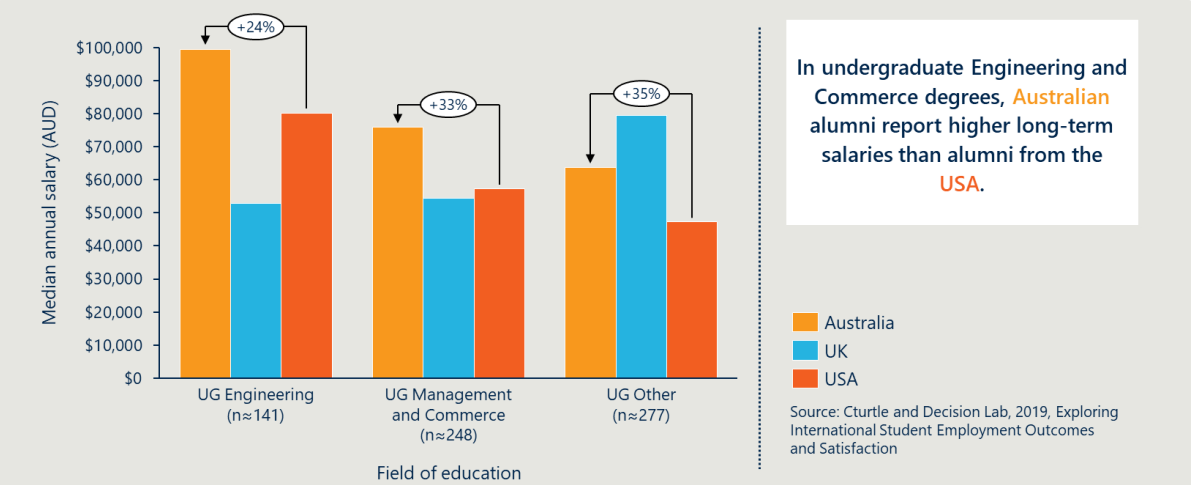
This situation is reversed at the postgraduate level. USA alumni, who studied postgraduate degrees, report a median long-term salary that is 20 per cent higher than Australian alumni. This is of some concern for Australia. As Australia pushes to move up the value chain of higher education delivery, and increasingly sees more enrolments in postgraduate qualifications, there may be the realisation that student investment in Australian education is not delivering commensurate returns. This move toward postgraduate delivery becomes even more important in the context of key source markets, like Malaysia and China, developing more mature domestic undergraduate offers. This will require Australia to have a strong postgraduate offer to compete on employment returns as undergraduate numbers potentially decline.

**Figure 47 | Median annual long-term salary by level of study and destination country**




Similar trends can be seen across different fields of study. At the undergraduate level, Australian international alumni report higher long-term salaries than USA international alumni, across every field of study (see Figure 48 overleaf). For both Engineering and Management and Commerce, Australian alumni report higher median salaries than both the UK and USA, while UK alumni report substantially higher salaries in the 'Other' category.

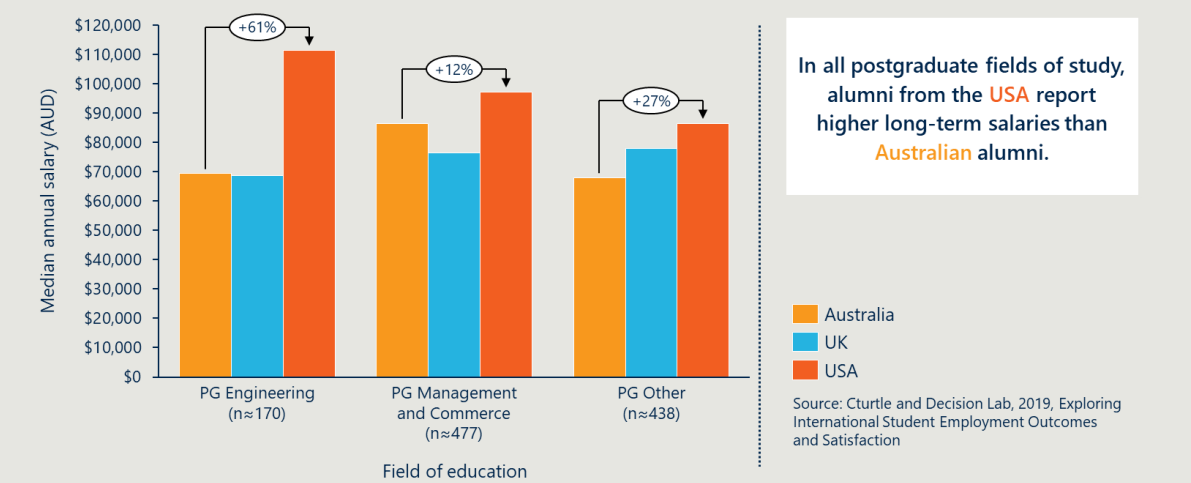
**Figure 48 | Median annual long-term salary by field of study and destination country (undergraduate)[15]**




At the postgraduate level, Australia's performance is substantially weaker (see Figure 49 below). Australia lags behind the USA in all three fields of study but is second place in Management and Commerce and Engineering (noting the difference between Australia and the UK for Engineering is almost negligible). Australia is a distant third place in the 'Other' category, where the UK is a closer competitor to the USA.

Considering both undergraduate and postgraduate results, the consistency of findings between level of study and across all fields of education, strengthens the case that country of study does play a role in impacting long-term salary outcomes.

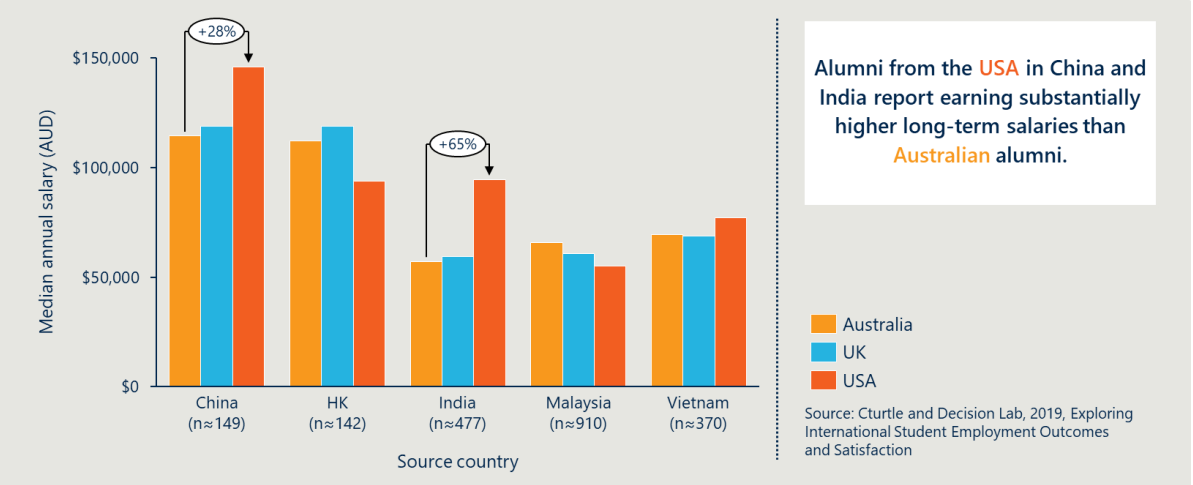
**Figure 49 | Median annual long-term salary by field of study and destination country (postgraduate)**




From a source market perspective, despite alumni of Australia and the USA reporting similar graduate employment rates in the key source countries of China and India (see Figure 41), USA alumni in these countries report significantly higher long-term salaries (combined undergraduate and postgraduate data) (see Figure 50 overleaf). This may illustrate that, in these two markets, alumni of institutions in the USA rise up the employment chain faster than alumni of Australian institutions. In other key source countries, Australian alumni report the highest median long-term salary for the Malaysian market and the second-highest for Hong Kong and Vietnam.

[15] Note: Only fields of study which have a sufficiently large sample size are included in the analysis.

**Figure 50 | Median annual long-term salary by source and destination country**




## Implications for Australia

- Australian undergraduate alumni report higher long-term salaries than UK and USA alumni by a significant margin.
- The high salaries reported by those completing undergraduate Engineering and Management and Commerce degrees is further strengthened by strong graduate employment rates. Australian undergraduate Engineering and Management and Commerce alumni appear to be highly valued overseas. They have the best start to their careers (as evidenced by them having the highest graduate employment rates) and progress the fastest (as evidenced by them having the highest long-term salary).
- However, Australia is falling behind in salary outcomes for international postgraduate alumni, particularly when compared to the USA. This is consistent with the poorer reported employment rates and it will be important to investigate why this is the case if Australia is to remain an attractive study destination at a postgraduate level.
- While sample sizes are low, it is concerning that reported long-term salaries for Australian alumni are substantially lower than the USA in the key source markets of China and India. This phenomenon requires further exploration as it may point to a potential risk that Australia is not producing the types of employees that succeed in the long run in these two important markets.

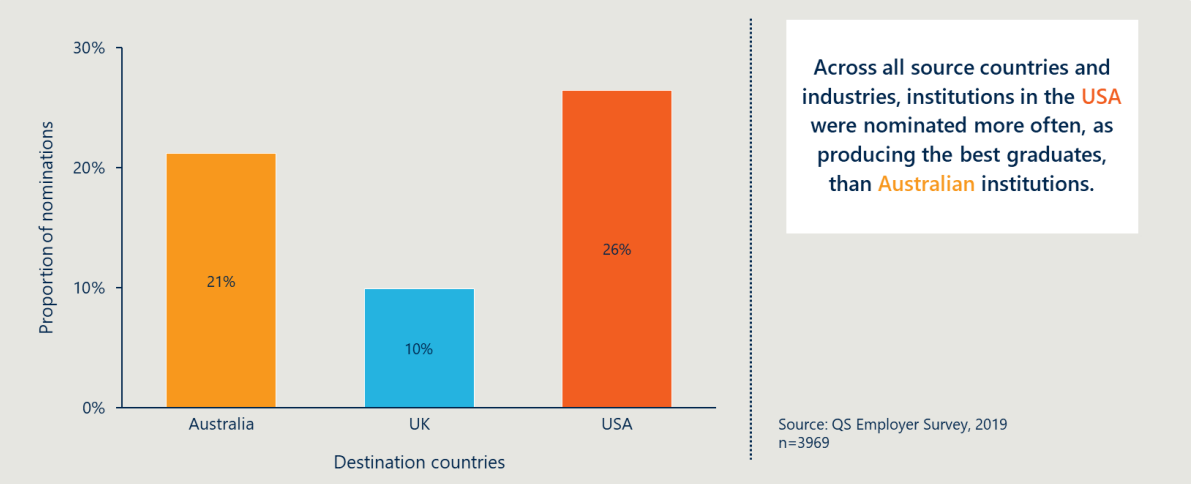
# 8 Employer nominations and skills

*This section explores employer perceptions of graduates who studied internationally. It draws upon analysis of employer nominations of the institutions that they believe produce the best graduates internationally, skills that employers' value, and how satisfied employers are with the skills of international students. These insights provide context to the trends explored in Sections 6 and 7 above.*

## 8.1 International employers tend to prefer hiring graduates from institutions in the USA, but Australia comes a close second

Institutions in the USA accounted for 26 per cent of the international institutions nominated by employers as producing the best graduates, while Australian institutions made up 21 per cent (see Figure 51 below). Combined, the three primary destination countries for international higher education made up 56 per cent of the nominated international institutions. Institutions in the UK accounted for just 10 per cent of employer nominations.

**Figure 51 | Employer nominations of international institutions by destination country**

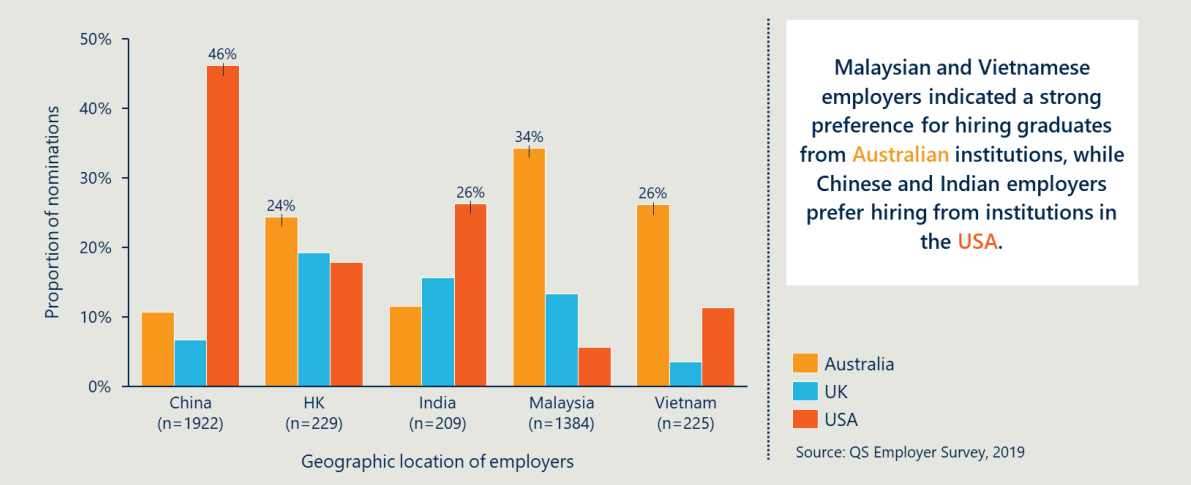



Interesting trends emerge when looking at nominations according to where the employer is located. 46 per cent of the international institutions nominated by Chinese employers were institutions in the USA and just 10 per cent were Australian institutions (see Figure 52 below). This demonstrates a strong preference among Chinese employers for graduates from institutions in the USA. It is likely that this result also explains why institutions in the USA receive more overall nominations than Australian institutions in Figure 51, as Chinese employers made up 48 per cent of the employer sample.

This might also explain why alumni from institutions in the USA receive a higher long-term annual salary in China, than alumni from Australian institutions. Broadly, employer preferences illustrated in Figure 52 overleaf align with findings regarding median annual long-term salary by source country, illustrated in Figure 50 in Section 7.2. Countries in which Australian institutions are frequently nominated by employers (Hong Kong, Malaysia and Vietnam) are countries where alumni from Australian institutions receive strong annual long-term salaries. On the other hand, countries in which Australian institutions are nominated less frequently, China and India, align with countries in which Australian alumni receive lower long-term annual salaries.

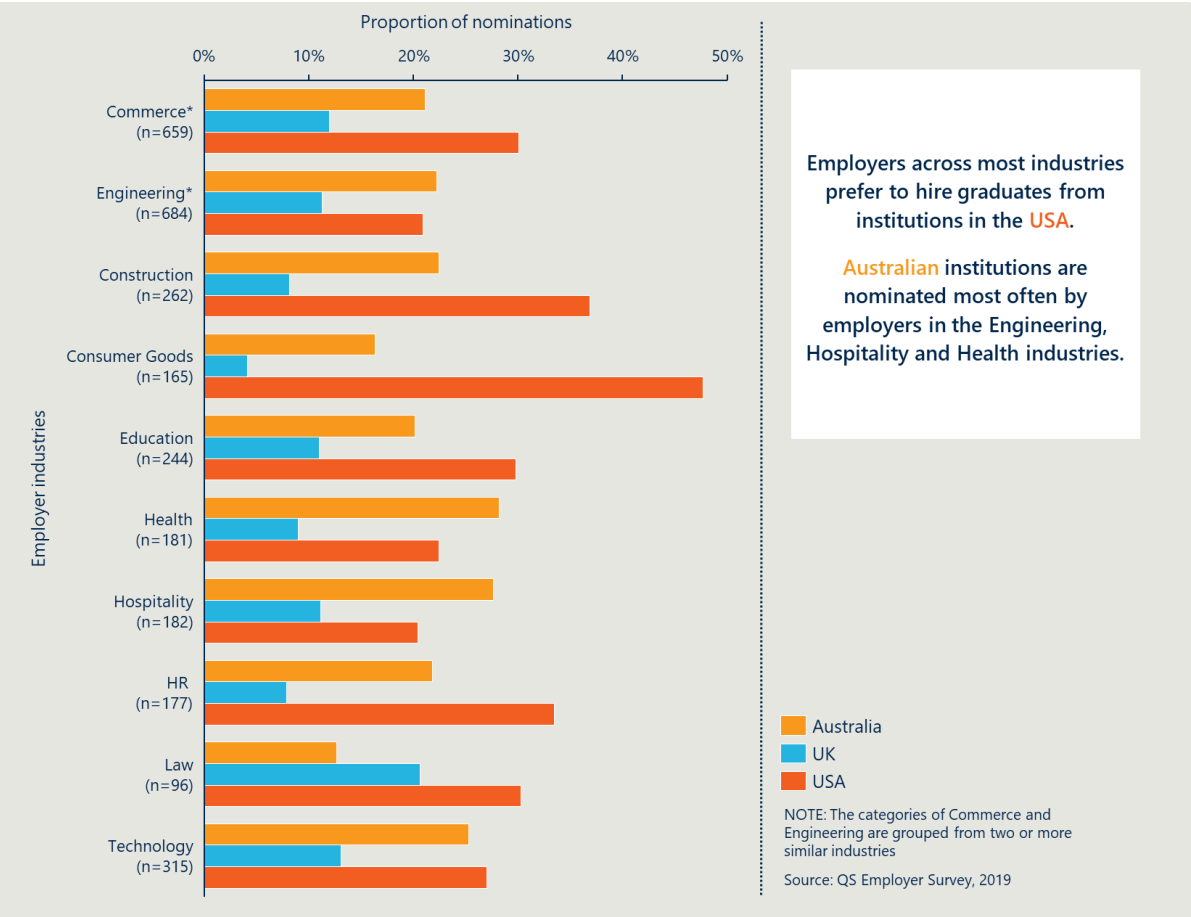
It should also be noted that Australian institutions were nominated most often by employers in Malaysia, Vietnam and Hong Kong.

**Figure 52 | Employer nominations of international institutions by source and destination country**




Employers in almost every industry expressed a preference for hiring graduates from institutions in the USA (see Figure 53 below). Despite this, international employers in Commerce, Engineering, Construction, Health, Hospitality and Technology industries nominated a high proportion of Australian institutions as producing the best graduates. Institutions in the UK receive fewer employer nominations than institutions in both the USA and Australia in all industries, except Law.

**Figure 53 | Employer nominations of international institutions by industry and destination country**



## Implications for Australia

- Employers across source countries view Australian institutions as producing highly capable, job-ready graduates. This is an endorsement of the overall quality of Australia's higher education system.
- However, employers in China and India value institutions in the USA more highly than Australian institutions. Australia is ranked a distant second behind the USA by Chinese employers, and last by Indian employers. This finding warrants further examination, given these two countries contribute the greatest numbers of international students in Australia.
- The geographic distribution of employer institution preferences appears to correlate strongly with the annual long-term salary of international students. Countries in which Australian institutions are frequently nominated by employers are the same countries in which Australian alumni receive higher long-term annual salaries. This may suggest that the initial perception of Australian institutions and graduates may have a lasting impact on students.
- Australia performs strongly across all industry groups in the eyes of employers. In particular, Australia performs well in Technology and Commerce, and ranks number one in Engineering for proportion of employer nominations. These are some of the industries in which Australia produces the largest numbers of international graduates.
- There are other industries where Australia receives the most employer nominations, including Health and Hospitality; these are not currently the courses which attract the greatest numbers of international students. There may, therefore, be an opportunity for Australia to exploit strengths in these areas outside of Engineering, IT and Commerce to garner increased market share.

## 8.2 The attributes valued by employers vary by country, but the key skills desired remain largely the same

Employers across the source markets consistently value professional experience very highly, with the exception of Chinese employers (see Figure 54 overleaf). Just seven per cent of Chinese employers report professional experience as a recruitment priority. This is especially interesting when compared to 40 per cent of Vietnamese employers reporting that professional experience is a recruitment priority. Similarly, 25 per cent of Vietnamese employers reported that extra-curricular activities are valued in recruitment compared to just three per cent of Chinese employers.

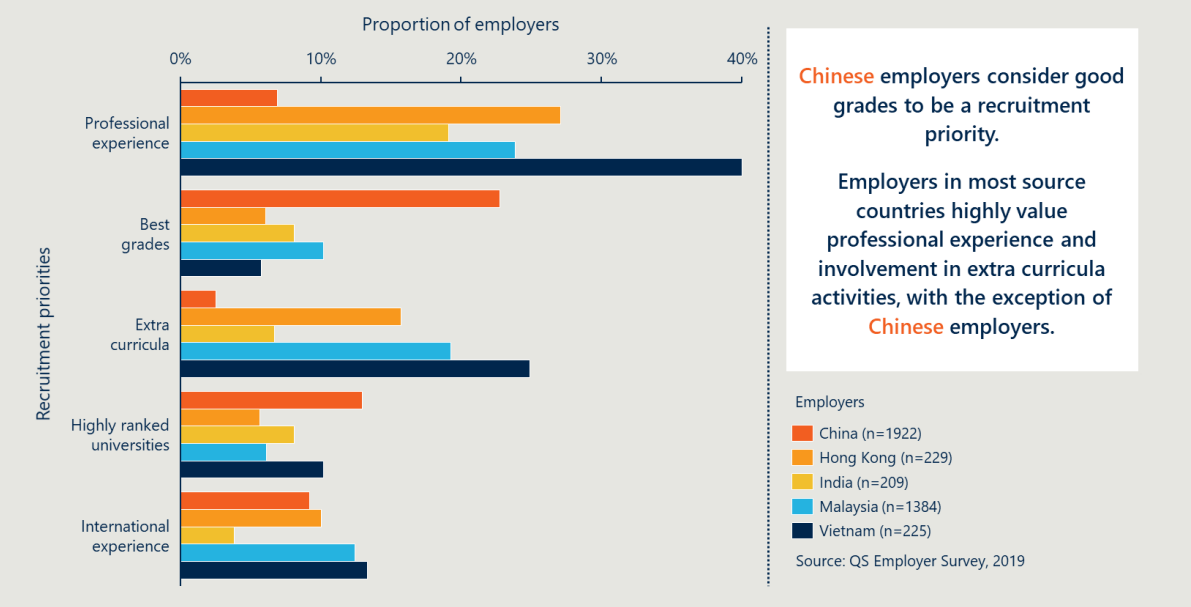
Chinese employers continue to be distinctive, with 23 per cent reporting that good grades are a recruitment priority. This is substantially higher than other source countries and is the attribute reported as important most frequently by Chinese employers.

The strong preference expressed by Chinese employers for hiring graduates with good grades and from a highly ranked university, may begin to explain their preference for hiring from institutions in the USA (Figure 52 above). Similarly, Malaysian employers expressed a strong preference for hiring graduates from Australian institutions (Figure 52) while also stating their preference for hiring graduates with professional experience and extra-curricular activities (Figure 54). This may suggest that graduates are exposed to more work experience opportunities through their degrees in Australia, making them more employable when they return home to Malaysia.

It is advisable that further research is conducted to better understand the various employer preferences and to monitor changes over time. It is clear also that any further research should be conducted at multiple levels of the hiring and employment cycle, from initial employer impressions of destination countries, to initial employer preferences of graduates, to skills and attributes that will enable graduates to succeed in the long-term.

It is interesting to note that just four per cent of Indian employers reported that "international experience" is a recruitment priority. As Australia's second biggest source market, it is somewhat concerning that Indian employers do not value international experience as highly as other countries. As such, it will be important for Australia to ensure Indian students graduate from Australian institutions with other experiences and attributes that are valued by employers. For example, 19 per cent of Indian employers reported that professional experience is a recruitment priority (Figure 54).

**Figure 54 | Attributes valued by employers by source country**



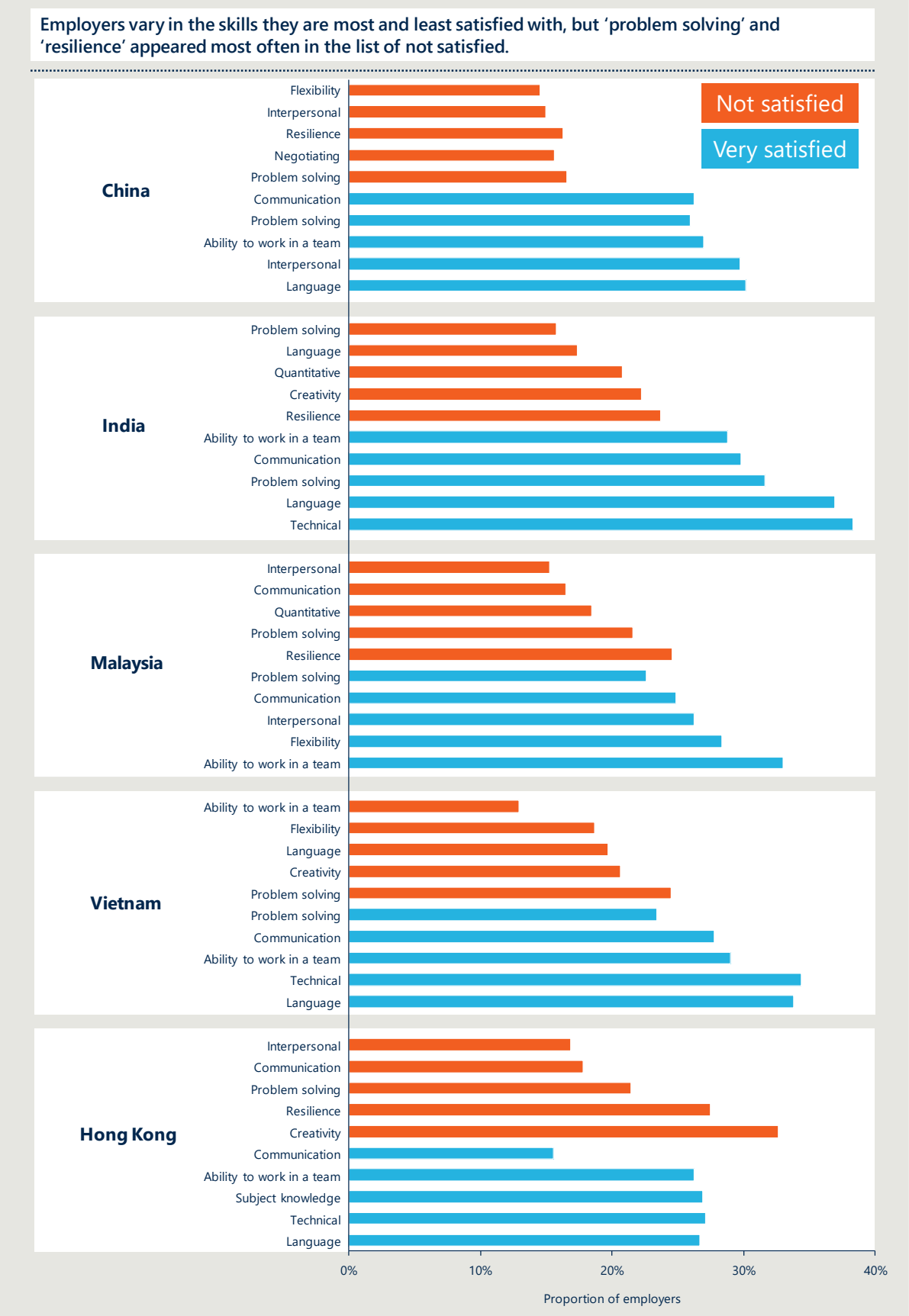

While the attributes valued by employers differ, the key skills that employers deem to be 'very important' are similar across source countries. The top three skills valued by employers across all source countries are communication, ability to work in a team, and problem solving. The order in which these three top skills were ranked differed slightly across source countries (see Table 1 below). It is important for institutions in Australia to note the prevailing importance of these skills to employers in key source markets, tailoring the student experience to meet these employer preferences.

**Table 1 | Top three skills classified as 'very important', and associated proportion of votes, by employers by source country**

| # | China | Hong Kong | India | Malaysia | Vietnam |
|---|---|---|---|---|---|
| 1 | Communication (8.0%) | Ability to work in a team (11.2%) | Ability to work in a team (9.0%) | Ability to work in a team (9.7%) | Problem solving (9.8%) |
| 2 | Ability to work in a team (7.9%) | Problem solving (10.6%) | Communication (8.7%) | Communication (9.0%) | Ability to work in a team (9.7%) |
| 3 | Problem solving (7.6%) | Communication (9.8%) | Problem solving (8.7%) | Problem solving (8.7%) | Communication (9.4%) |

The vast majority of employers, across most source countries, report being satisfied or very satisfied that their graduates exhibit the top three skills. Interestingly, the skill most commonly noted in the top 5 skills employers were most dissatisfied with was 'problem solving', illustrating that there are mixed views in all countries regarding international graduates' abilities to solve problems. The second most frequently noted skill employers are dissatisfied with was 'resilience'. The top 5 skills employers are very satisfied, and not satisfied with is displayed below (see Figure 55 overleaf).

## Figure 55 | Employer satisfaction with graduate's display of very important skills



## Implications for Australia

- Australian institutions may benefit from a more in-depth analysis of their student mix and the development of those attributes and skills desired by employers in key source markets. This would enable students from different source countries to focus on the development of specific attributes and skills that would maximise their employability upon returning home.
    - For instance, institutions with a high proportion of Vietnamese students could seek to increase the level of professional experience opportunities provided to students.
    - Those with high proportions of students from Hong Kong and Malaysia may wish to increase the level of extra-curricular activities, or ensure students are aware of existing activities, given the preferences expressed by employers in those countries.
- All Australian higher education institutions should continue to embed 'soft skills' into course design given the universal desirability of these skills across all source markets. Employers consistently nominate communication, problem solving and the ability to work in a team as core skills that are "very important".

# 9 Employment Index

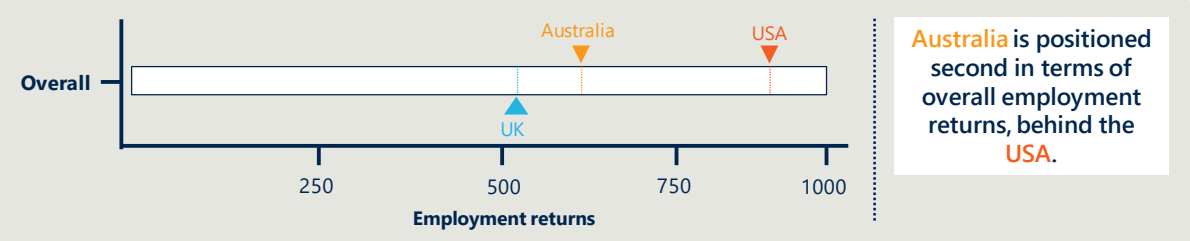
*This section integrates the analyses conducted above in employment rate, salary, and employer nominations of institutions to create an Employment Index. This index provides a holistic view, from both the student and employer perspective, as to the relative benefit of studying in key countries. Countries have been given a standardised score out of 1,000 that has been used as the basis for comparison. This analysis delivers insight to understand how Australia compares against the UK and USA at an overall employment level, by level of study, by FOE, and by source country.*

## 9.1 Australia's overall Employment Index results place it second, with some variation across level, field of study and source country

Each destination country's overall employment returns have been summarised into a single score, to be compared on the Employment Index. The index integrates average salaries at a graduate, mid-term and long-term level, in addition to average graduate employment rates and employer nominations of preferred institutions.

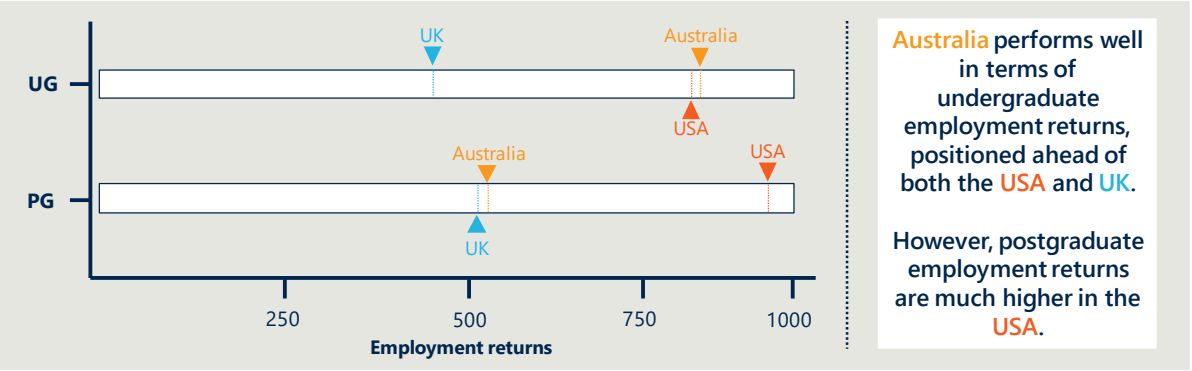
At the overall level, Australia is positioned second between the USA, which is ranked first, and the UK (see Figure 56 below). All three countries are positioned well as strong destinations for international students in terms of employment returns, however the USA displays the strongest employment returns.

**Figure 56 | Overall Employment Index**




Disaggregating the Employment Index by level of study highlights Australia's strong position in the undergraduate market and relatively weaker position in the postgraduate market (see Figure 57 overleaf). At the undergraduate level, Australia displays the strongest employment returns compared to our competitors. The USA comes a close second while the UK lags behind both countries. The story for all three countries shifts considerably at the postgraduate level. Here, the USA performs substantially better than Australia and the UK, while Australia outperforms the UK by a small margin.

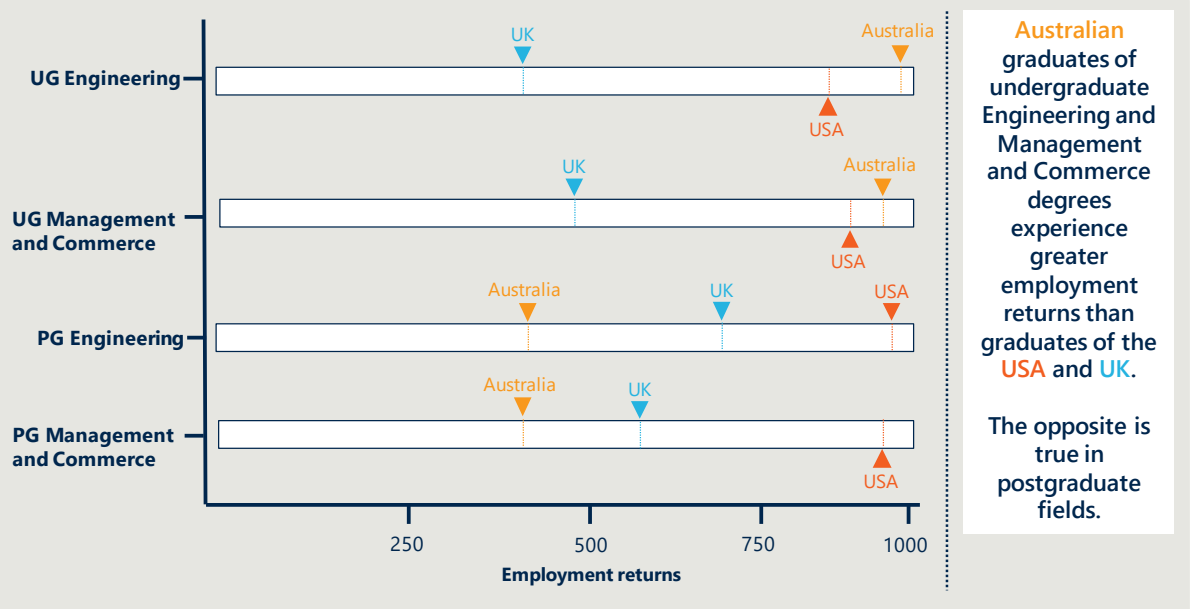
Figure 57 | Employment index by level of study[16]




Australia performs better in undergraduate fields of education than postgraduate.

In line with Figure 57 presented above, Australia performs better in undergraduate FOEs than postgraduate. Australia produces graduates who experience the strongest employment returns for the key undergraduate fields of Management and Commerce and Engineering (see Figure 58 below). However, in the same postgraduate FOEs, Australia falls behind. In both postgraduate fields, both the UK and Australia lag behind the USA by a substantial margin.

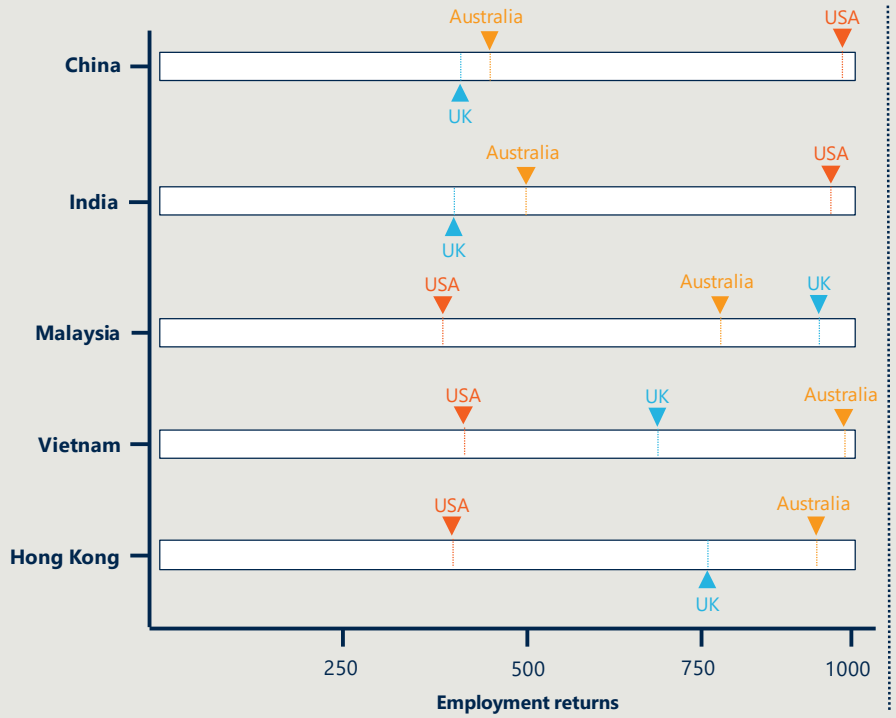
Figure 58 | Employment index by field of education




International alumni from Australian institutions are considered more employable than our competitors in two of our key source markets; Vietnam and Hong Kong (see Figure 59 overleaf). However, in China and India, Australia's two largest source markets, Australian alumni report weaker employment returns. Australia ranks second in these two markets, with the UK ranked third. The gap between Australia and the UK in both countries is not substantially large. The USA is significantly ahead in both critical markets.

[16] A country's relative position near 1,000 does not necessarily indicate they provide perfect employment returns. This result simply indicates that this country provides excellent employment returns vis a vis the other two countries.

Figure 59 | Employment index by source country




Australian graduates are very employable in Vietnam, Hong Kong and Malaysia but lag behind the USA in China and India.

## Implications for Australia

- The Employment Index is a composite measure integrating employment rate, salaries and employer nominations of preferred institutions.
- While Australia is ranked behind the UK in terms of student flows, Australia's overall employment returns, as measured by the Employment Index, place it higher than the UK. This suggests that Australia can market itself strongly on its ability to provide strong employment returns to international students to try to increase its overall market share.
- Closing the gap between Australia and the USA in terms of employment returns in China and India appears to be an important strategic focus. The lower employment returns in these two countries appears to start even before graduates enter the market, as highlighted by employer's hiring preferences.
- China is also distinctive in terms of attributes desired from graduates, preferring good grades and a highly ranked university over work experience. Further research is needed to better understand this preference, and to monitor changes over time.
- A focus on improving postgraduate employment also appears to be necessary. As Australia seeks to attract more international postgraduate students, the employability of these graduates will become an important point of comparison with our competitors. For Australia to remain relevant and attractive as a study destination, Australian institutions will need to focus on providing a postgraduate study experience which positions our graduates for demonstrably strong employment returns over their careers.

# Part 4 | ROI analysis

This part of the report focuses on comparing the return-on-investment (ROI) of three core competitor destination countries. These countries are Australia, the UK, and the USA. ROI is, for this purpose, defined as the aggregation of the two key index outputs addressed in this report:

1. Affordability Index
2. Employment Index

The integration of these two indices produces an overall perspective on value-for-money at the country-level.

ROI analysis has been conducted at four levels: 1) aggregate ROI across countries, 2) undergraduate and postgraduate, 3) field of education, and 4) source country.

# 10 ROI Comparison

*This section integrates the Affordability Index and the Employment Index to form a holistic view of value for money by different market segmentations. Both the Affordability Index and Employment Index are scored on a 1-1000 scale, meaning that comparative positioning on both indices can be easily analysed and visualised. ROI analysis has been conducted at multiple levels to analyse Australia's comparative strengths and areas of improvement.*

## 10.1 Australia provides moderate returns at a moderate cost

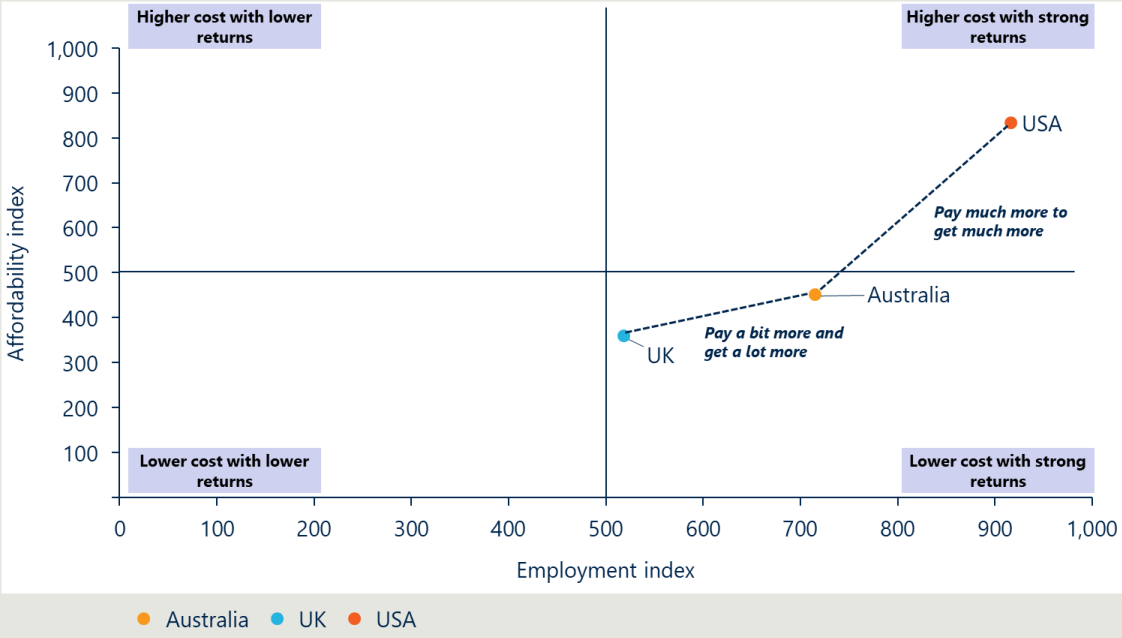
The overall ROI of the USA, the UK, and Australia illustrates that there is a relationship between the cost of international study in a destination country, and the overall returns delivered for that study. The USA costs the most, but provides the highest employment returns, while the UK costs the least, but provides the lowest returns. Australia sits in the middle of these two countries, providing moderate returns at a moderate cost.

Australia delivers arguably the strongest ROI of the three countries.

Australia, despite sitting between the USA and UK for affordability and employment returns, delivers arguably the most ideal ROI. Students studying in Australia pay, on average, higher fees than those studying in the UK, but they receive disproportionately larger returns in employment outcomes. Those students who choose to study in the USA do receive much stronger employment outcomes than those in Australia, but this is matched by significantly higher fees. As such, students studying in Australia are ideally placed in terms of costs and returns, both on a relative and absolute basis.

**Figure 60 | Overall Return on Investment**

**Australia is positioned within the 'moderate cost with moderate returns' segment of the market and can be considered ideally placed given its relative position to the UK and USA.**




NOTE: This analysis includes discounting. Higher score on the affordability index indicates more expensive country while higher score on employment index indicates stronger employment returns.

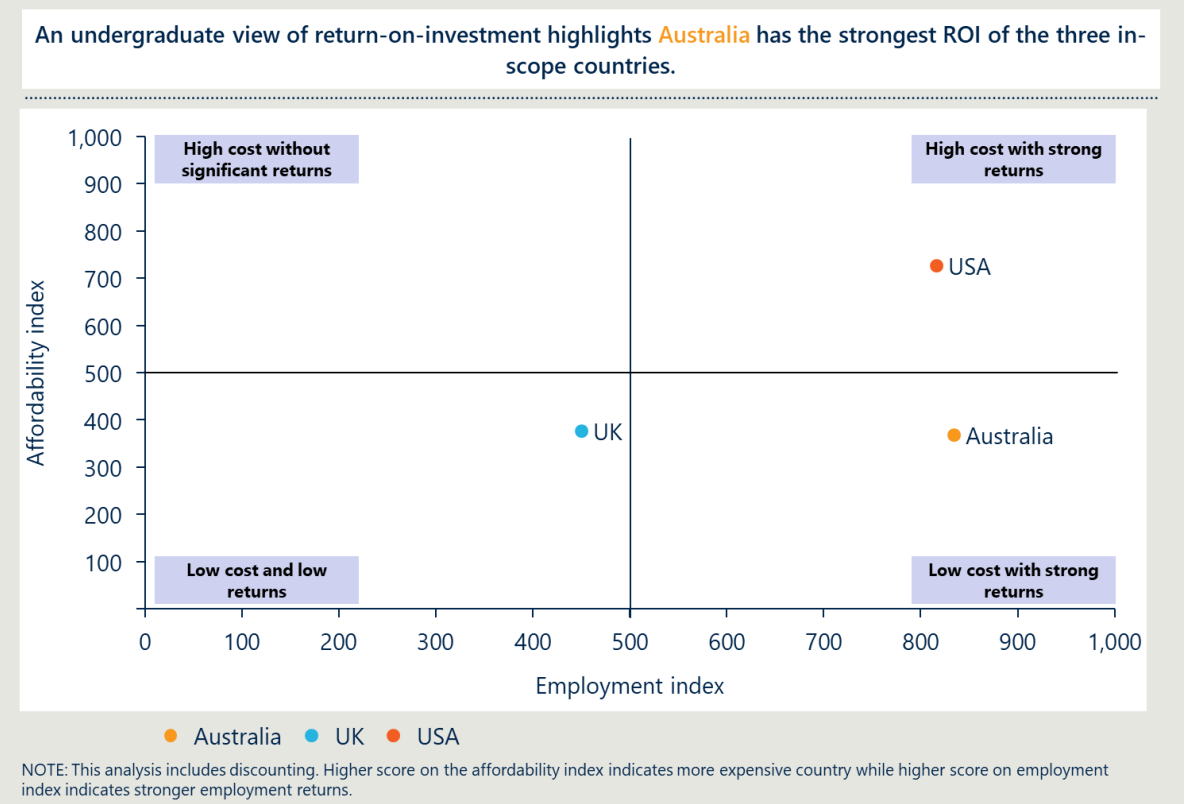
## Implications for Australia

- The Return on Investment (ROI) analysis aggregates the measures of affordability (as measured by the Affordability Index) and employment (as measured by the Employment Index).
- When compared with the UK and the USA, Australia's ROI is positioned within the 'moderate cost with moderate returns' segment of the international education market.
- Australia's ROI can also be considered ideally positioned given that:
  - Compared to the UK, prospective students can "pay a bit more and get a lot more" in return by choosing Australia
  - Compared to the USA, prospective students would need to "pay much more to get much more" in return.
- At an overall level, Australia should not look to directly compare its value proposition with the USA. In the USA, students pay much more, and in return receive comparatively better employment returns. Australia competes more directly with the UK.

# 10.2 Students receive a better ROI in UG than PG in Australia

ROI can also be analysed by course level. At the undergraduate level, Australia is the most attractive destination country by a substantial margin (see Figure 61 below). This is because Australia provides the strongest employment returns at the lowest price point. The USA's employment returns are similar to Australia, but the average affordability is significantly higher. The UK demonstrates similar affordability to Australia but has substantially lower employment returns.

**Figure 61 | Undergraduate return-on-investment**

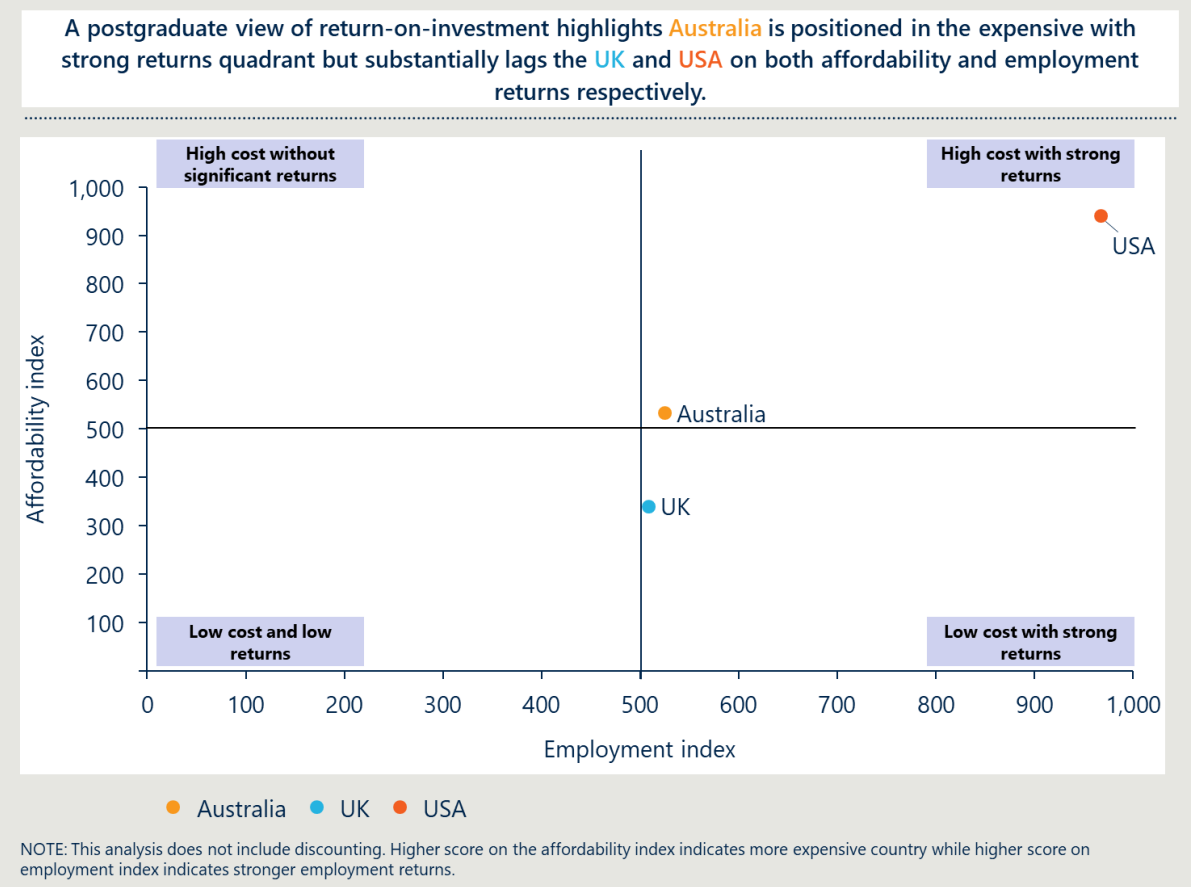



NOTE: This analysis includes discounting. Higher score on the affordability index indicates more expensive country while higher score on employment index indicates stronger employment returns.

At the postgraduate level, Australia provides the lowest ROI of the three countries (see Figure 62 below). Students studying in Australia pay substantially more than those studying in the UK, but receive marginal improvements in employment returns. Students studying in the USA pay significantly more than those in Australia, but receive commensurate employment returns.

The UK and the USA may generally be attractive to different segments of the postgraduate student population. Those that are more frugal may seek out the UK, while those that care strongest about employment returns, regardless of cost, would seek out the USA.

**Figure 62 | Postgraduate return-on-investment**[17]



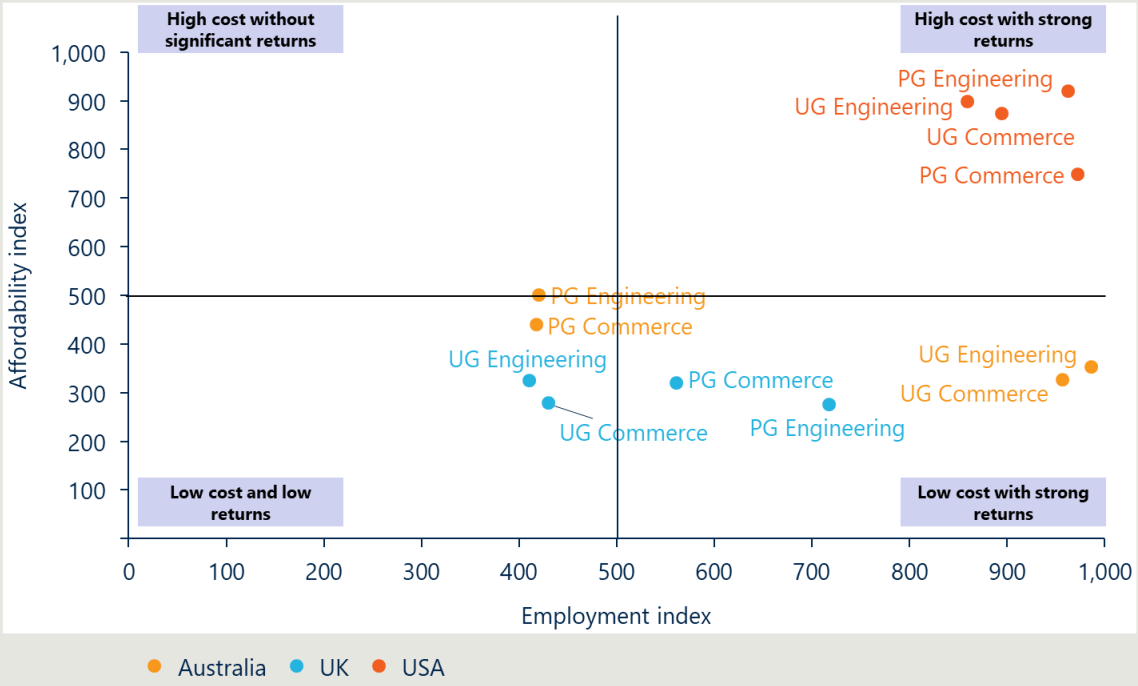

NOTE: This analysis does not include discounting. Higher score on the affordability index indicates more expensive country while higher score on employment index indicates stronger employment returns.

An analysis of Management and Commerce and Engineering, FOEs with sufficient affordability and employment data, further highlights Australia's strength in the undergraduate market compared with the postgraduate market. Both undergraduate fields of education continue to sit in the 'low cost with strong returns' quadrant. Australia's postgraduate options however either sit on the cusp of the 'high cost without significant returns quadrant' or sit within this quadrant.

[17] Note, despite Australia and the USA having similar postgraduate tuition prices, these two countries are positioned significantly apart on the ROI index due to the USA having a much higher cost of living score.

Figure 63 | Field of education return-on-investment

A field of education view of return-on-investment highlights that for Australia, postgraduate engineering is in the weakest strategic quadrant with postgraduate commerce positioned close to this quadrant. Both undergraduate FOEs for Australia hold the strongest strategic position of all country-FOE combinations.




NOTE: This analysis includes discounting. Higher score on the affordability index indicates more expensive country while higher score on employment index indicates stronger employment returns.

## Implications for Australia

- Australia's ROI in the undergraduate field makes it the most attractive destination overall for undergraduate students. Australia produces the strongest score on both the Affordability Index and Employment Index, and as a result its overall value proposition is much stronger than either the UK or the USA.
- As has been highlighted in both Part 2 and 3 of this report, Australia's value for money proposition at the postgraduate level is not as strong as at the undergraduate level. The combination of being more expensive, and delivering middling employment returns places Australia third behind the UK and the USA in terms of ROI. This is of concern given postgraduate enrolments have begun to outpace undergraduate enrolments in Australia. Further research to determine the cause of this result and any appropriate corrective course of action is recommended.

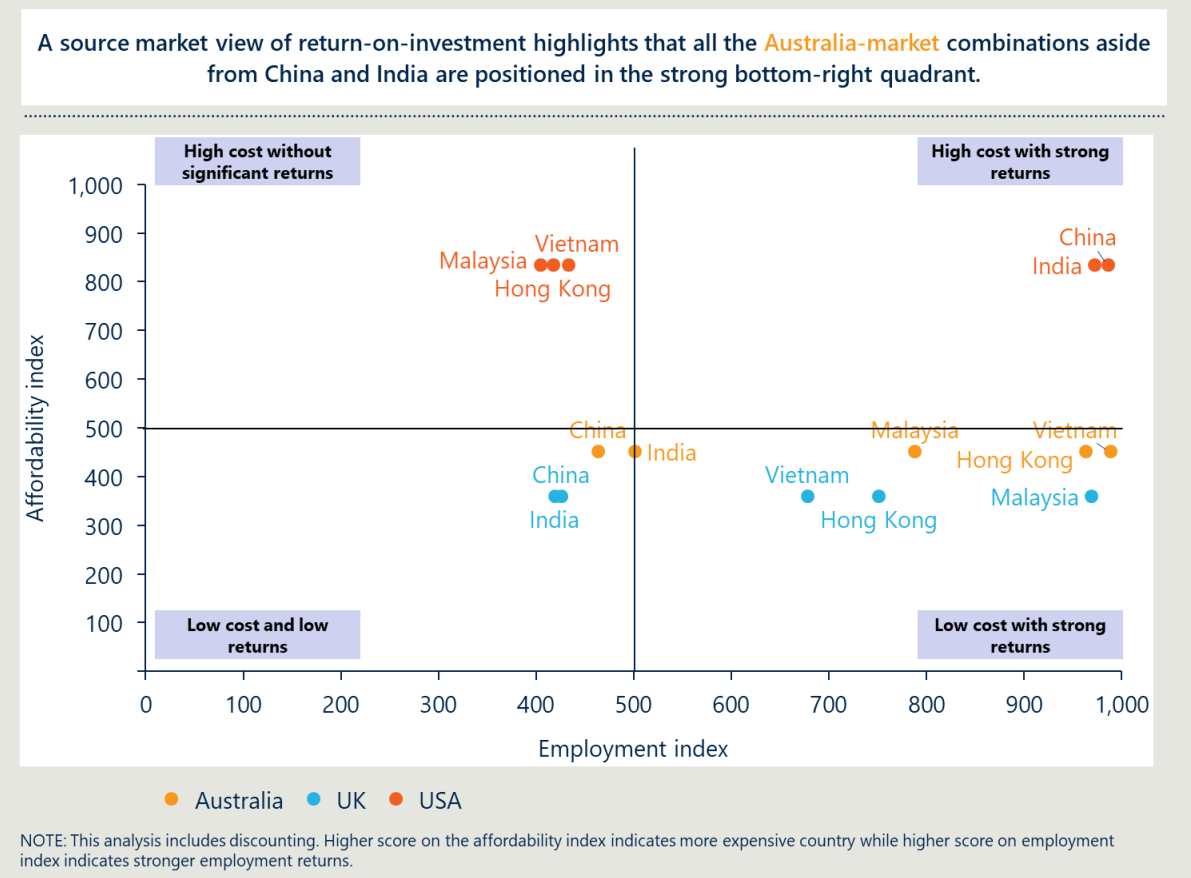
## 10.3 Australia provides the strongest ROI to students from Vietnam and Hong Kong

ROI can also be examined according to the source markets where international students come from. This analysis is presented below for the key markets of China, India, Malaysia, Vietnam and Hong Kong (see Figure 64).

At an aggregate level, Australia provides the strongest ROI for students from Vietnam and Hong Kong and provides the second-best ROI to students from Malaysia. The UK is ranked first for ROI for Malaysia and second for Vietnam and Hong Kong. Students from Hong Kong, Malaysia, and Vietnam studying in the USA receive a significantly lower ROI and sit in the 'high cost without significant returns' quadrant.

Across all three destination countries, Chinese and Indian students broadly receive employment returns that are commensurate with their investment. Chinese and Indian students studying in the UK, on average, pay a lower amount in fees and living costs, but also receive lower employment returns, while those who choose the USA face higher study and living costs, but see stronger employment returns. Chinese and Indian students studying in Australia sit in a similar quadrant to the UK, with students paying more on average than the UK, but receiving better employment returns. Chinese and Indian students however receive a substantially lower ROI in Australia than students from other source markets.

**Figure 64 | Source market return-on-investment**




NOTE: This analysis includes discounting. Higher score on the affordability index indicates more expensive country while higher score on employment index indicates stronger employment returns.

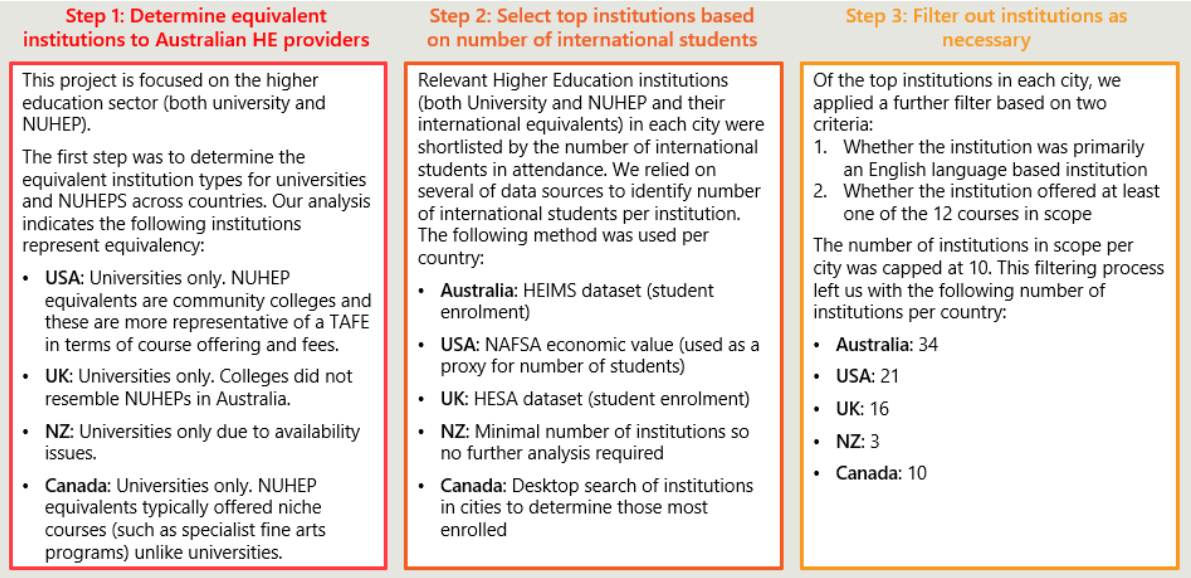
## Implications for Australia

- While data availability limits the extent to which source country analysis can be conducted at a more granular level, the high-level results point to some apparent strengths and areas of improvement for Australia.
    - Australia provides the strongest ROI for Vietnam and Hong Kong and provides a competitive ROI for Malaysia.
    - The lower employment returns for China and India, noted in section 9.1, result in a lower ROI for students from these two source markets studying in Australia compared with other source markets. This has not appeared to have had any material impact on the flow of Chinese and Indian students to Australia to date, but it is not possible to assess what might have otherwise been the case.

# Appendix A In-scope institutions

*This Appendix outlines the final list of in-scope institutions by country and city.*

### Figure 65 | Shortlist process to determine institutions




The final list of institutions for Australia is presented in Table 2 below. **Bold** institutions indicate a Non-University Higher Education Provider (NUHEP).

### Table 2 | In-scope Australian institutions

| Country | City | Institutions |
|---|---|---|
| Australia | Adelaide | Flinders University, The University of Adelaide |
| | Brisbane | Central Queensland University, Griffith University, Queensland University of Technology, The University of Queensland, **Holmes Institute, Kaplan Business School** |
| | Canberra | Australian National University, University of Canberra |
| | Darwin | Charles Darwin University |
| | Gold Coast | Bond University, Griffith University, Southern Cross University |
| | Hobart | University of Tasmania |
| | Melbourne | Deakin University, La Trobe University, Monash University, RMIT, Swinburne University of Technology, University of Melbourne, Victoria University, **Kaplan Business School** |
| | Newcastle | University of Newcastle |

| | | |
|---|---|---|
| | Perth | Curtin University, Edith Cowan University, Murdoch University, University of Western Australia, **Kaplan Business School** |
| | Sydney | Macquarie University, University of New South Wales, The University of Sydney, University of Technology Sydney, Western Sydney University, **Holmes Institute, International College of Management, Kaplan Business School** |
| | Wollongong | University of Wollongong |

The final list of institutions for countries other than Australia is presented in Table 3 below.

**Table 3 | In-scope international institutions**

| Country | City | Institutions |
|---|---|---|
| New Zealand | Auckland | Auckland University of Technology, Massey University, University of Auckland |
| Canada | Montreal | McGill University, Concordia University |
| | Toronto | University of Toronto, York University, Ryerson University, Trent University |
| | Vancouver | University of British Columbia, Simon Fraser University, Kwantlen Polytechnic University, University of the Fraser Valley |
| United Kingdom | Coventry | Coventry University, The University of Warwick |
| | Edinburgh | The University of Edinburgh, Heriot-Watt University, Edinburgh Napier University, Queen Margaret University Edinburgh |
| | London | University College London, King's College London, London School of Economics, The University of Westminster, Queen Mary University of London, Brunel University London, SOAS University London, London South Bank University |
| | Manchester | The University of Manchester, The Manchester Metropolitan University |
| | Oxford | University of Oxford |
| | Cambridge | University of Cambridge |
| United States | Boston | Northeastern University, Boston University, Harvard University, Massachusetts Institute of Technology, University of Massachusetts, Suffolk University, Wentworth Institute of Technology |
| | Los Angeles | University of Southern California, University of California, Loyola Marymount University, California State University, Golden Gate University |

| | | |
|---|---|---|
| | New York | New York University, Columbia University, Stony Brook University, Fordham University, Pace University, St. John's University, Hofstra University, Long Island University, Adelphi University, Yeshiva University |
| Ireland | Dublin | Trinity College Dublin, University College Dublin, Dublin City University, Maynooth University |

# Appendix B In-scope fields of education

*This Appendix outlines the final list of in-scope FOEs with indicative program titles and their inclusion and exclusion criteria.*

There is limited consistency in the programs offered across institutions and countries. To create a comparable and standardised analysis of tuition fees, a list of key fields of education (FOEs) was constructed (Table 4 below).

Each FOE was assigned clear inclusion and exclusion criteria which enabled comprehensive and accurate data collection for institutions located outside of Australia. Majors that were well-defined, mutually-exclusive and known to be offered internationally were selected as inclusion and exclusion criteria. Similar FOEs were included at both undergraduate and postgraduate level including Management and Commerce, Engineering, and Information Technology.

**Table 4 | In-scope fields of education**

| Programs | Inclusion criteria | Exclusion criteria |
|---|---|---|
| **B. Comm, B. Business** | Majors in management, accounting, marketing, business administration | Economics, finance, human resources, actuarial science |
| **M. Comm, M. Professional Accounting** | Majors in management, accounting, marketing, business administration | Economics, finance, human resources, actuarial science |
| **B. Engineering** | Majors in civil, chemical, electrical, mechanical, mining, mechatronic | Engineering science, software engineering |
| **M. Engineering** | Master degrees in the civil, chemical, electrical, mechanical, mining, and mechatronic fields | Engineering science, software engineering |
| **Juris Doctor*** | Juris Doctor | Criminology and justice, any law specialisations (i.e. taxation law major) |
| **B. Science** | Majors in biology, physics, chemistry | Psychology, biomedical science, bioinformatics, archaeology, geography, marine science, zoology, ecology, genetics, data science |
| **M. Environment, M. Biotechnology** | Master degrees in the environment, environment and sustainability environmental science, and biotechnology fields | Food science, data science, physical and biological sciences, zoology, ecology, marine science, biotechnology, materials science |
| **B. Info Tech, B. Info Sys, B. Comp Sci** | Majors in information technology, information systems, computer science | Software engineering |

| | | |
|---|---|---|
| **M. Info Tech, M. Info Sys, M. Comp Sci** | Master degrees in the information technology, information systems, and computer science fields | Software engineering |
| **B. Nursing** | Nursing | Audiology, dentistry, exercise science, medicine, nutrition and dietetics, occupational therapy, pharmacy, psychology, social work |
| **M. Public Health** | Public health | Audiology, dentistry, exercise science, medicine, nutrition and dietetics, occupational therapy, pharmacy, psychology, social work |
| **Bachelor Arts** | Majors not in fields listed above | Management, accounting, marketing, business administration, engineering, biology, physics, chemistry, Information technology, information systems, computer science, nursing |

# Appendix C Discounting

*This Appendix outlines the background research and final discounting numbers used in the report.*

### Undergraduate considerations

Discounting practices at the institutional level are opaque and mandatory reporting practices are not a requirement. However, there remains sufficient evidence to suggest systematic discounting occurs at the undergraduate level for both the USA and Australia. Research conducted by the National Association of College and University Business Officers (NACUBO) in the USA highlights the prevalence of discounting by US institutions. In 2018-19, estimates of discounting value were 52.2 percent for first-time, full-time students and 46.3 percent for all undergraduates on aggregate. It was estimated that 89.8 percent of all freshmen received financial aid from universities[18]. An estimated discount rate of 50 percent was selected for the purposes of this project.

No formal publications like Nacubo's Tuition Discounting Study, exists for Australian institutions. Instead, understanding of fee discounting in Australia was driven by previous Nous analysis of Studymove data. Studymove represents a data set of scholarships by institution in Australia for domestic and international students. Nous analysis of average scholarship and discount amounts in Australia for international students revealed a likely discounting range of 10-25 percent across all institutions. For simplicity, this project adopted a midpoint discount value of 17.5 percent for undergraduate study in Australia.

Similar information for the remaining in-scope destination countries was not identified through desktop research or through consultation with experts in the field. As such, this project did not include a discounting component for undergraduate fees in Canada, Ireland, New Zealand, and the UK.

Analysis and insight in this section has been visualised at both sticker and discounted price to account for the opacity in determining the true net-price cost of an undergraduate degree.

### Postgraduate considerations

Unlike the undergraduate field, there is no evidence to suggest that systematic discounting occurs in the postgraduate field. While postgraduate scholarships and other incentives exist, such as the Late Endeavour Leadership Program in Australia, a substantial proportion of postgraduate scholarships appear to focus on research programs. Research programs were out-of-scope for this project and are not indicative of the fee structures used for coursework programs. Furthermore, discounting itself likely occurs on a more ad-hoc nature. As such, discounting was not included in the postgraduate component of this project.

### Final discounting numbers

**Table 5 | Discounting numbers by country**

| Course level | Country | Discount amount |
|---|---|---|
| Undergraduate | Australia | 17.5% |
| Undergraduate | USA | 50% |

[18] NACUBO, Sep 19, Private colleges now use nearly half of tuition revenue for financial aid, https://www.nacubo.org/Press-Releases/2019/Private-Colleges-Now-Use-Nearly-Half-of-Tuition-Revenue-For-Financial-Aid, accessed 6 June 2019

# Appendix D Cost of living scenarios

*This Appendix outlines the baskets of goods which comprise the eight developed cost of living scenarios.*

Desktop research highlighted a dearth of literature and data regarding international student cost of living, expenditure and lifestyle. This gap in evidence was particularly pronounced when a country lens was applied, and almost no evidence was available at the city-level. Resolution of the data absence required a secondary research methodology to be devised to leverage the data available through online sources.

The online city-based price repository Numbeo was used to obtain cost of living data. Numbeo is a database where city residents can enter the price of a collection of goods at any time, and the responses are curated by the Numbeo team to remove outlier entries and stabilise any incorrect fluctuations. Raw data for all items available in the cost of living dataset on Numbeo was extracted using a web scraping algorithm which returned values in Australian dollars for each city.

To enable a focused exploration of living costs relevant to international students, eight scenarios were developed, each comprising a different basket of goods. The eight scenarios were developed to encapsulate the entirety of the international student lifecycle to understand city-level competitiveness across a student's journey. The eight scenarios and their item composition are presented in Table 6 below.

**Table 6 | Composition of cost of living scenarios**

| Scenario | Item composition |
|---|---|
| Scenario 1: Bare living essentials | • 1 month of 1 bedroom rent in city center<br>• Internet for a month<br>• Utilities for a month |
| Scenario 2: Stocking up wardrobe | • 2 pairs of jeans<br>• 2 summer dresses<br>• 1 pair of Nike runners<br>• 1 pair of men's business shoes |
| Scenario 3: O-Week party | • 12 bottles of domestic beer<br>• 1 bottle of water<br>• 1 meal at McDonalds |
| Scenario 4: Weekly shop during semester | • 2 x 1kg chicken breast<br>• 2 x 1kg beef<br>• 1 x 1 litre milk<br>• 1 loaf of bread<br>• 1kg rice<br>• 1 carton of eggs<br>• 1kg cheese<br>• 1kg apples<br>• 1kg tomato<br>• 1kg potato<br>• 1kg onion<br>• 1 head of lettuce<br>• 5 bottles of water |

| | |
|---|---|
| Scenario 5: Travel out and picnic | • 43 litres of gasoline (43L is what a Ford Fiesta's tank is, which is a common hire and student car)<br>• 4 bottles of water<br>• 1 carton of eggs<br>• 1 loaf of bread |
| Scenario 6: Exam preparation and cramming | • 1 bottle of water<br>• 5 x cappuccinos<br>• 5 x meals at McDonalds<br>• 1 domestic beer at a restaurant<br>• 1 imported beer at a restaurant |
| Scenario 7: General transport to and from institution | • Monthly transport pass (or GoCard equivalent) |
| Scenario 8: Dinner and movie with friends | • 1 movie ticket<br>• 1 bottle of Coke/Pepsi<br>• 1 meal at an inexpensive restaurant<br>• 1 domestic beer at a restaurant |

# Appendix E Postgraduate fee regression results

*This appendix provides statistical outputs for the regression model used to predict postgraduate tuition fees.*

A linear regression model was used, governed by the equation:

$$y = b_1x_1 + b_2x_2 + b_3x_3$$

Where:

- $b_1$ = Course category
- $b_2$ = Country
- $b_3$ = Course duration

Table 7 below presents regression outputs and tests of statistical significance. The overall model was statistically significant, $F$ (12,457) = 62.94, $p$ < .001, where the predictors explained 62.3% of the variance unadjusted, and 61.3 per cent of the variance once adjusted ($R^2$ = 0.623, Adj. $R^2$ = 0.613).

**Table 7 | Regression model outputs**

| Predictor | Estimate | *SE* | *t* |
|---|---|---|---|
| Course category – Commerce and Business | -0.673 | 0.538 | -1.25 |
| Course category – Engineering | -0.236 | 0.570 | -0.41 |
| Course category – Environment | -0.562 | 0.601 | -0.94 |
| Course category – Information Technology | -0.476 | 0.561 | -0.85 |
| Course category – Law | 2.954 | 0.788 | 2.35*** |
| Course category – Public Health | -1.229 | 0.591 | -2.08* |
| Country – Canada | -2.086 | 0.545 | -3.83*** |
| Country – Ireland | -1.676 | 0.737 | -2.27* |
| Country – New Zealand | 1.009 | 0.818 | 1.23 |
| Country – UK | -0.460 | 0.395 | -2.26 |
| Country - USA | 2.222 | 0.345 | 6.44*** |
| Course duration | 4.322 | 0.250 | 17.32*** |

Note: * $p$ < .05, ** $p$ < .01, *** $p$ < .001. The course category "Biotechnology" and the country "Australia" are omitted from this table as the model used these two levels of the predictor variables as references.

Table 8 below highlights the proportion of variance in tuition fees explained by each predictor independent of the effects of the other predictors. This is represented in the semi-partial eta squared column. These effect sizes can be interpreted as percentages after multiplying them by 100.

**Table 8 | Proportion variance in tuition fees**

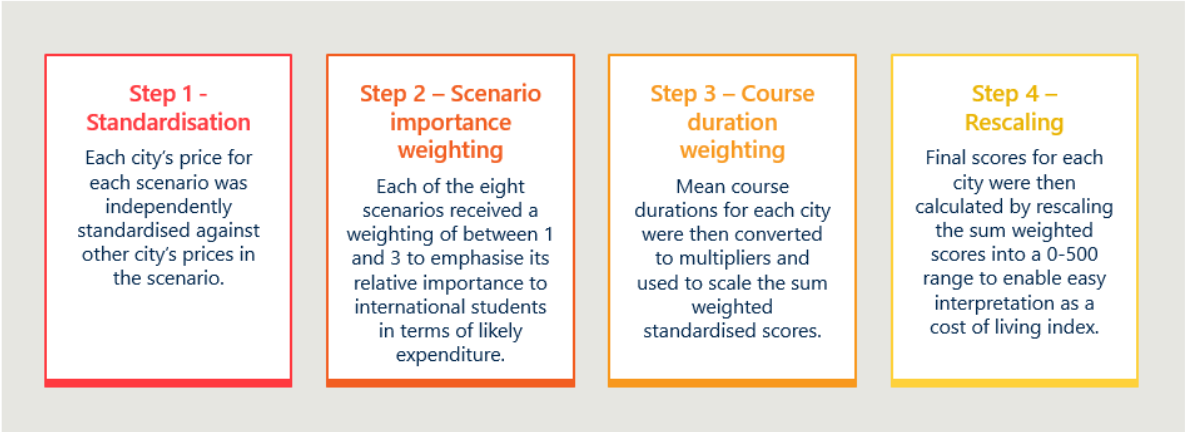
| Predictor | Sums of squares residuals | Semi-partial correlation squared |
|---|---|---|
| Course category | 283.37 | 0.0002 |
| Country | 708.72 | 0.0462 |
| Course duration | 2390.00 | 0.5269 |

# Appendix F Cost of living index methodology

*This Appendix outlines the methodology that was used to calculate the cost of living index.*

The overarching process used to calculate the index is presented in Figure 66 below. Each component is then explained in more detail underneath. Broadly, the process aimed to capture variance across the eight cost of living scenarios and provided a summative indication of relative cost of living beyond comparing raw prices. This approach was adopted because total price differed enormously between the eight scenarios. A simple sum across the scenarios would have been unduly influenced by the few very expensive scenarios while the relative nuances of less expensive scenarios would have been lost.

**Figure 66 | Process used to calculate cost of living index**




### Step 1 – Standardisation

This process is important as the orders of magnitude differences in sum price between the different scenario are removed by standardisation. Each city's score is benchmarked relative to the mean and standard deviation of each scenario.

### Step 2 – Scenario importance weighting

Weights were developed to emphasise scenarios which are critical to international student life. Performing this after the standardisation means the raw price magnitudes are not a conflating factor and the weights applied in this step only change scores by a maximum of a factor of three. The weights were developed after examining expenditure proportions provided by Study in Australia[19]. Analysis of expenditure highlighted three "tiers" of contributing proportions and these were fitted onto the eight scenarios using a one-three scale seen in Table 9 below.

**Table 9 | Weighting of scenarios**

| Scenario | Weight |
|---|---|
| Scenario 1: Bare Living Essentials | 3 |
| Scenario 2: Stocking Up Wardrobe | 2 |
| Scenario 3: O-Week Party | 1 |

[19] Study Australia, 2019, Education and living costs in Australia, https://www.studyinaustralia.gov.au/english/live-in-australia/living-costs

| Scenario | Weight |
|---|---|
| Scenario 4: Weekly Shop During Semester | 3 |
| Scenario 5: Travel Out and Picnic | 1 |
| Scenario 6: Exam Preparation and Cramming | 1 |
| Scenario 7: General Transport to and from Institution | 3 |
| Scenario 8: Dinner and Movie with Friends | 2 |

### Step 3 – Course duration weighting

Mean course duration for each course level was then calculated for each city. These respective averages were standardised and then converted into multipliers such that they would slightly adjust the cost of living score. This process allows for the potential financial impact of staying in a destination city longer relative to others to be captured.

### Step 4 – Rescaling

To complete the cost of living index, scores were rescaled into a 0.5-500 range using the mathematical formula presented below. This was performed to enable easy interpretation of outputs and to facilitate a summing together with the tuition fee index to produce a 1-1000 ranged affordability index.

$$\frac{max_{new} - min_{new}}{max_{old} - min_{old}} . (score - max_{old}) + max_{new}$$

# Appendix G Tuition fee index methodology

*This Appendix outlines the methodology that was used to calculate the tuition index.*

The tuition fee index was computed independently for undergraduate and postgraduate study and then at an aggregated overall level. The undergraduate and postgraduate indices utilised the same methodology. First, a median fee was calculated for each city and course level. Median fees were then rescaled into a 0.5-500 range using the mathematical formula presented below. This was performed to enable easy interpretation of outputs and to facilitate a summing together with the cost of living index to produce a 1-1000 ranged affordability index.

$$\frac{max_{new} - min_{new}}{max_{old} - min_{old}} . (score - max_{old}) + max_{new}$$

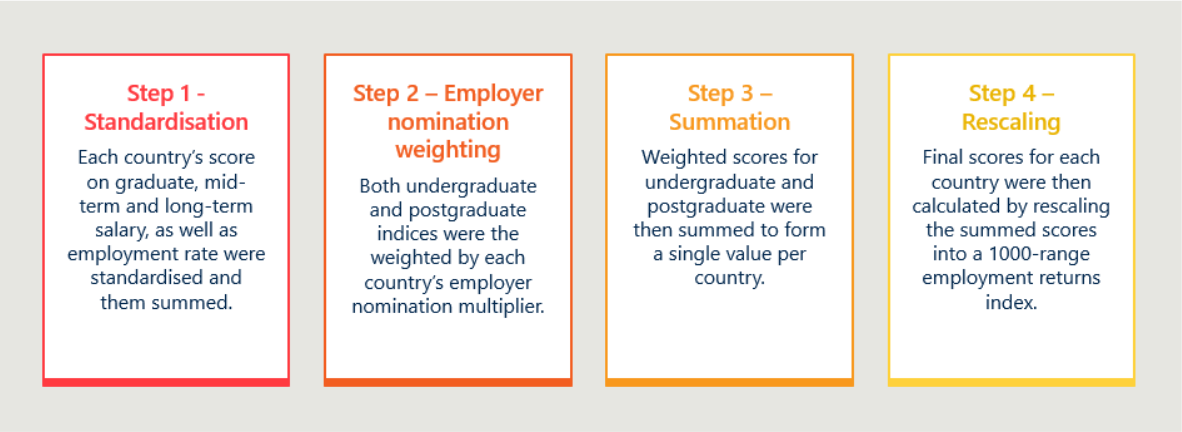
For the aggregated tuition fee index, both the undergraduate and postgraduate indices were calculated summed before being rescaled back into the 0.5-500 range using the same formula presented above.

# Appendix H Employment Returns Index methodology

*This Appendix outlines the methodology that was used to calculate the Employment Returns Index.*

The high-level methodology used to compute the overall Employment Returns Index is presented in the Figure 67 | Process for Employment Returns Index methodologybelow. The undergraduate and postgraduate indices stopped after Step 1 and were then rescaled into the 1000 range using the same formula presented below. This same stopping process was used for the source market and FOE employment returns indices which didn't require any summation of course levels.

**Figure 67 | Process for Employment Returns Index methodology**




### Step 1 – Standardisation

Each country's score is benchmarked relative to the mean and standard deviation of each metric (graduate salary, mid-term salary, long-term salary, employment rate). These individual standardised scores were then summed to produce a single score for each country at undergraduate and postgraduate levels.

### Step 2 – Employer nomination weighting

The final weights used for each country are presented as multipliers in Table 10 below.

**Table 10 | Employer nomination weighting**

| Country | Employer nomination weight |
|---|---|
| Australia | 1.21 |
| UK | 1.1 |
| USA | 1.26 |

### Step 3 – Summation

The standardised and employer nominated weighted scores for undergraduate and postgraduate for each country were then summed. This ensures variance from both course levels was equally captured.

### Step 4 – Rescaling

Scores were then rescaled into the 1000-point range using the formula below to finalise the overall Employment Returns Index.

$$\frac{max_{new} - min_{new}}{max_{old} - min_{old}} . (score - max_{old}) + max_{new}$$

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