



Transparency in Higher Education Expenditure

Australian Government Department of Education
November 2019

Contents

Glossary	iii
Acronyms	iii
Field of education abbreviations	iv
Executive summary	v
Approach to the data collection	v
The cost of teaching and scholarship in higher education	viii
How these findings compare to previous studies	xi
Costs and funding	xii
Concluding remarks	xiv
1 Background	15
1.1 Purpose and objectives	15
1.2 Changes to the exercise in 2019	16
1.3 University sample	18
1.4 Trends in higher education delivery	20
1.5 Report structure	23
2 Cost of teaching and scholarship	25
2.1 Distribution of types of costs	25
2.2 Costs by field and level of education	28
2.3 Comparing costs to base funding levels	34
2.4 Comparing changes in cost over time	38
2.5 Examining costs 'below the line'	46
2.6 Consideration of contextual factors	51
3 Discussion and key limitations	56
3.1 Key considerations in interpreting the analysis	56
3.2 Reflections on splitting teaching and research	58
3.3 Treatment and accounting for capital costs	58
3.4 The ability to allocate costs to a unit of study level	61
3.5 Other reflections from universities	64
4 Potential areas for improvement in 2020	67
4.1 Potential changes to the treatment and explanation of certain items	67
4.2 Potential changes to the data collection process	68
Limitation of our work	92
General use restriction	92

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/au/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms.

The entity named herein is a legally separate and independent entity. In providing this document, the author only acts in the named capacity and does not act in any other capacity. Nothing in this document, nor any related attachments or communications or services, have any capacity to bind any other entity under the 'Deloitte' network of member firms (including those operating in Australia).

Liability limited by a scheme approved under Professional Standards Legislation.

Charts

Chart i : Average bachelor unit costs per EFTSL by university	viii
Chart ii : Distribution of unit costs by field for bachelor studies	ix
Chart iii : Distribution of unit costs by field for postgraduate studies	x
Chart iv : Distribution of units costs by field for sub-bachelor studies	x
Chart v : Comparing average cost growth from 2017 to 2018 for bachelor studies (2017 common sample (25 universities))	xi
Chart vi : Average unit costs as a proportion of base funding for bachelor, full sample	xiii
Chart 1.1 Representativeness of the 2019 study by key university characteristics	18
Chart 1.2 : EFTSL coverage of the 2018 sample (32 universities) by level	20
Chart 1.3 : EFTSL coverage of the 2018 sample (32 universities) by field	20
Chart 1.4 : Student enrolments over time by field of education	21
Chart 1.5 : Student enrolments over time by state	21
Chart 1.6 : Total expenses and net operating result for Australian public universities (2011-17)	22
Chart 1.7 : Total revenue for Australian public universities (2011-17)	23
Chart 1.8 : Cost growth decomposed by growth in EFTSL and growth in unit costs (2012-17)	23
Chart 2.1 : Proportion of total costs attributable to teaching	26
Chart 2.2 : Proportion of costs attributable to teaching by university affiliation, 2018	26
Chart 2.3 : Proportion of teaching costs attributable to staff (versus non-staff)	27
Chart 2.4 : Average unit costs by university (all fields and levels)	28
Chart 2.5 : Sample of cost observations by field and level of education	29
Chart 2.6 : Count of outlier cost observations removed by field and level of education combination	29
Chart 2.7 : Average unit costs by field for sub-bachelor	31
Chart 2.8 : Distribution of unit costs by field for bachelor	32
Chart 2.9 : Average unit cost and dispersion by field for bachelor	33
Chart 2.10 : Average unit costs by field for postgraduate	34
Chart 2.11 : Average unit costs as a proportion of base funding for bachelor (full 2018 sample)	35
Chart 2.12 : Distribution of the average unit costs to base funding ratio, 2017 and 2018, (2017 common sample (25 universities))	37
Chart 2.13 : Comparing average costs between 2017 and 2018 for all levels of study (2017 common sample (25 universities))	39
Chart 2.14 : Comparing costs between 2017 and 2018 for sub-bachelor (2017 common sample (25 universities))	40
Chart 2.15 : Comparing costs between 2017 and 2018 for bachelor (2017 common sample (25 universities))	41
Chart 2.16 : Comparing costs between 2017 and 2018 for postgraduate (2017 common sample (25 universities))	42
Chart 2.17 : Comparing average costs between 2015 and 2018 for all levels of study (2015 common sample (17 universities)), Compound Annual Growth Rate (CAGR)	43
Chart 2.18 : Variation in capital costs per EFTSL reported 'above the line' and the optional depreciation adjustment, by university (all levels)	51
Chart 2.19 : Capital costs per EFTSL reported 'above the line' and the optional depreciation adjustment (all levels)	51
Chart 2.20 : Unit costs and deviation from average using different EFTSL thresholds, by level	52
Chart 2.21 : Correlation between scale and unit costs	53
Chart 3.1 : Average unit costs for institutions able to identify costs at a unit of study level, by level of study (all fields)	62
Chart 3.2 : Average unit costs for institutions able to identify costs at a unit of study level, by university (all fields and levels of study)	63

Chart 3.3 : Average unit costs for institutions able to identify costs at a unit of study by FOE for bachelor level study

63

Tables

Table i : Average unit cost per EFTSL	xii
Table ii : Growth over time in average unit cost per EFTSL	xii
Table iii : Teaching costs relative to CSP funding for bachelor studies	xiii
Table 1.1 : Key changes to the template for 2019	17
Table 1.2 : Planned participation by universities	19
Table 2.1 : Average unit cost per EFTSL	44
Table 2.2 : Growth over time in average unit cost per EFTSL	44
Table 2.3 : Change in costs between 2015 and 2018	45
Table 2.4 : Change in costs between 2017 and 2018	45
Table 2.5 : Change in costs per EFTSL between 2015 and 2018 (CAGR), 2015 common sample (17 universities), by line item	46
Table 2.6 : Change in costs per EFTSL between 2017 and 2018, 2017 common sample (25 universities), by line item	46
Table 2.7 : Total average impact of 'below the line' costs on teaching and scholarship costs	47
Table 2.8 : Impact of in-kind costs on total teaching and scholarship costs	48
Table 2.9 : Impact of additional partnership costs on total teaching and scholarship costs	49
Table 2.10 Impact of the optional depreciation adjustment on total teaching and scholarship costs	50
Table 3.1 : Key limitations of the exercise	56
Table 4.1 : Suggested changes to the Transparent in Higher Education Expenditure exercise	67
Table B.1: Levels of education	76
Table B.2: Fields of education	78
Chart C.1: Distribution of the average unit costs to base funding ratio, 2015, 2017 and 2018, (2015 common sample (17 universities))	88
Chart C.2: Comparing costs between 2015 and 2018 for sub-bachelor (2015 common sample (17 universities))	89
Chart C.3: Comparing costs between 2015 and 2018 for bachelor (2015 common sample (17 universities))	90
Chart C.4: Comparing costs between 2015 and 2018 for postgraduate (2015 common sample (17 universities))	91

Glossary

Acronyms

Acronym	Full name
ABC	Activity Based Costing
ATN	Australian Technology Network of Universities
CGS	Commonwealth Grant Scheme
CSP	Commonwealth Supported Place
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation
EFTSL	Equivalent Full Time Student Load
FOE	Field of Education
FTE	Full-Time Equivalent
Go8	Group of Eight
HDR	Higher Degree Research
IQR	Interquartile Range
IRU	Innovative Universities Australia
MSI	Margin for Sustainability and Investment
QILT	Quality Indicators for Learning and Teaching
RUN	Regional Universities Network
SCA	Student Contribution Amount
TCW	Transparent Costing Worksheet
TRAC	Transparent Approach to Costing
UA	Universities Australia

Field of education abbreviations

Abbreviation	Full name
MathSci	Mathematical Sciences
MedicalSci	Medical Science
OthNat-PhysSci	Other Natural and Physical Sciences
InfoTech	Information Technology
Eng&Related	Engineering and Related Technologies
Archi&Build	Architectre and Building
Environment	Environmental Studies
OthAg&Enviro	Other Agriculture, Environmental and Related Studies
MedicalStudies	Medical Studies
Nursing	Nursing
Dental	Dental Studies
Veterinary	Veterinary Studies
OthHealth	Other Health
Education	Education
Mgmt&Comm	Management and Commerce
ForeignLang	Foreign Languages and Translating
Psych	Psychology
OtherSoc&Cult	Other Society and Culture
Comms&Media	Communiation and Media Studies
OthCreative	Other Creative Arts
FoodHosp&Person	Food, Hospitality and Personal Services
MixedField	Mixed Field Programmes

Executive summary

Universities are complex institutions operating in a variety of environments with a range of missions. The *Higher Education Support Act 2003* creates the legislative framework for Australian Government support for higher education in order to support the “distinctive purpose of universities, which are:

- (i) the education of persons, enabling them to take a leadership role in the intellectual, cultural, economic and social development of their communities; and
- (ii) the creation and advancement of knowledge; and
- (iii) the application of knowledge and discoveries to the betterment of communities in Australia and internationally.”¹

The Australian Government supports teaching and scholarship activities at universities through the provision of funding. There is a collective interest in transparency regarding the use of these funds and the allocation of resources across the various activities that universities engage in. The way in which this funding is provided, in terms of the specific teaching and research activities it is intended to support, significantly influences the behaviour of universities. Understanding the extent to which funding is used to support teaching and scholarship across fields of education enables effective decision-making both within universities, and across the students, organisations and the governments which fund them.

For the Australian Government, the funding of teaching and scholarship via the Commonwealth Grant Scheme (CGS) is provided on the basis of funding clusters and student contribution bands. The CGS is designed to allocate aggregate base funding to universities in a way that appropriately reflects their respective mix of disciplines.

This model, notionally intended to capture relative average costs across disciplines, has been periodically informed by research into the costs of teaching and scholarship at universities. Analysis of the costs of teaching and scholarship at universities was previously undertaken by Deloitte Access Economics in 2011 and 2016 (both of which concerned activity in the prior calendar year).

Seeking to build on these previous exercises and develop an annually updated evidence base on the costs of teaching and scholarship at Australian universities, the Australian Department of Education (the Department) established the Transparency in Higher Education Expenditure exercise, commissioning Deloitte Access Economics to undertake this collection in 2018, 2019 and 2020. This report presents the results derived from the second year of that process, relating to university activity in the 2018 calendar year. The university sample for the rest of the report will be referred to as the 2018 sample of 32 universities, which are included in the 2019 study.

This report updates the analysis contained in the 2018 study. While this report should be seen as a stand-alone document, much of the content is consistent with that provided in the 2018 report.

Approach to the data collection

Building on the 2016 data collection,² the approach to the Transparency in Higher Education Expenditure exercise was guided by two key objectives, namely:

- Accurately measuring the costs of teaching and scholarship³ by field and level of education.

¹ Higher Education Support Act 2003, s2(1)(b).

² Unlike the 2016 study, this report does not seek to provide estimates of the reasonable costs of teaching and scholarship by field of education or to use a regression framework to identify the size of particular cost drivers. Importantly, this means that the cost estimates reflect the actual costs of teaching and scholarship for the universities concerned. This report does not explicitly analyse notions of efficiency or quality.

³ For simplicity, the ‘cost of teaching and scholarship’ is often referred to as the ‘cost of teaching’ throughout this report.

- Supporting the continued transition to a more comprehensive, systematic and streamlined data collection process over time.

To support the achievement of these objectives, the collection process, data template (or Transparent Costing Worksheet (TCW)) and an associated set of comprehensive Guidelines were developed in close collaboration with the university sector and the Department. This included endorsement of the TCW and Guidelines by a Universities Australia (UA) Reference Group (consisting of university representatives, representatives from UA, the Department, and Deloitte Access Economics) and a whole-of-sector one-day forum organised by UA to introduce and discuss the exercise with universities.

The final approach sought to establish a dataset which, to the greatest extent possible, was:

- Reliable – such that a suitable level of assurance can be established regarding the underlying data.
- Comparable – across universities, given differences in university context, and over time.
- Attributable – ensuring costs are captured only to the extent that they are incurred as a result of a defined and in-scope activity.
- Actual – in that the economic rather than the accounting measure of cost⁴ is of primary interest.

Based on these principles and in-depth consultation with the sector, a number of refinements were made to the TCW as part of the 2018 exercise.

Through the course of the 2018 exercise, universities consistently reiterated the value of keeping the structure of the TCW consistent in subsequent years. At the same time, universities provided a number of suggestions to continue to refine the TCW and supporting Guidelines. In developing the TCW and Guidelines for 2019 a number of incremental refinements were made to address feedback from universities and the UA Reference Group while keeping the core structure of both unchanged. These included:

- Inserting an optional depreciation adjustment item in the TCW to account for cases where a university has fully depreciated assets that are still in use or where historical book value differs from the cost of replacing a building in its current condition.
 - In these situations, universities were able to include an additional adjustment to account for the fact that reported depreciation may not accurately reflect the full economic costs of using buildings or other capital items for teaching activities.
- Providing greater clarity through the Data Collection Guidelines on the concepts of in-kind and third-party and partnership costs.
- Making a number of changes to improve the usability of the TCW, such as incorporating six digit Field of Education (FOE) lookup values.
- Clarifying that the inclusion of in-kind costs and separation of placement costs as being optional both through the Guidelines and TCW.
- Clarifying the ways in which the costs of teaching exchange students should be incorporated in the exercise in the Guidelines.

Following these changes, the TCW was provided to all 32 universities participating in the 2019 exercise on the 17th of June 2019 and universities were requested to complete the exercise by the 30th of July. Following submission of the template, the data was moderated and synthesised by the Deloitte Access Economics team, with follow-up discussions initiated where outliers or other uncertainties were identified.

All 32 universities participating in the 2019 data collection returned a full dataset. This sample included the 25 universities that participated in the 2018 study. The inclusion of the seven additional universities increased the coverage of the sample to 81% of enrolments by equivalent full-time student load (EFTSL) and at least 70% of institutions in each university affiliation, as well

⁴ Economic costs include both accounting costs but also the opportunity cost involved in using a given resource for a particular activity.

as a majority of universities operating in every state and territory. As such, the sample provides a robust foundation for analysing the level of, and variation in, costs across the sector. All universities are scheduled to participate in the 2020 exercise.

During the data collection window, Deloitte Access Economics consulted with participating universities to discuss the costing approaches taken, and to ensure that the TCW was completed appropriately and as consistently as possible across institutions. Universities were also able to provide a Supporting Statement alongside the collection template, outlining the methodology applied, any unique contextual considerations and relevant concerns. This process of consultation, as was the case in the 2018 exercise, reflected both the complexity and diversity of costing approaches and organisational practices across the sector and helped ensure the collection of a high quality dataset. Moreover, it was clear that a number of universities had made investments to improve both the quality of data and cost allocation methodologies relative to those used in previous studies.

Key findings from this process were that:

- Universities varied in the sophistication of their cost data collection and reporting abilities. Almost 60% of universities participating this year utilise activity-based costing (ABC) models and software platforms, or have developed their own cost allocation models which are able to report costs at a unit of study level. Others rely on more aggregated financial information, which is then allocated to more granular activities and functions. Despite these differences, similar assumptions and drivers tended to be applied in allocating costs across fields of education. Most universities recognised there was scope for improving the accuracy of their cost allocation process over time and many were actively taking steps to do so or had done so following last year's exercise.
- There continue to be challenges for many universities in separating the costs of teaching and scholarship from research activities. This is because resources are often shared between different activities and collecting data on how those resources are shared poses practical difficulties. This is particularly the case for staff time, although the use of regular staff time surveys can help provide a more accurate measure.
- The reporting of data based on fields of education has not traditionally been commonplace for universities and does not reflect universities' underlying operating structures, which are organised around faculties and schools. While universities have relatively refined data on, for example, teaching costs at the faculty or school level, mapping this to individual fields of education often requires several additional methodological steps. To the extent that individual course costs vary and universities provide different mixes of courses within a field of education, variation in course composition will impact cost relativities between universities.
- The separation of costs between different levels of study within a field of education was challenging for a number of universities, particularly for those universities whose cost allocation models do not report costs at the unit of study level. In these cases, costs were allocated across levels proportionally using EFTSL numbers, such that each level had the same average unit cost.
- Universities incur once-off or irregular costs, for example as a result of faculty restructures, redundancies and the cost of creating new faculties or offerings, meaning that the results from any one year may not reflect genuine ongoing costs. It is anticipated that the continued periodic collection of this data will provide a mechanism for accounting for this over time.
- In instances of low EFTSL delivery within a field of education, results can be highly sensitive to minor changes in costing methodology. For this reason, field and level cost observations with a student load of less than five EFTSL were omitted from the reporting.⁵ This was most commonly observed at the sub-bachelor level.

⁵ In addition to this outliers were removed where costs per EFTSL were greater than \$100,000 and an EFTSL count was less than 10, when costs per EFTSL were greater than \$300,000, or in instances where participating universities explicitly indicated that costs for a field-level combination should not be relied upon.

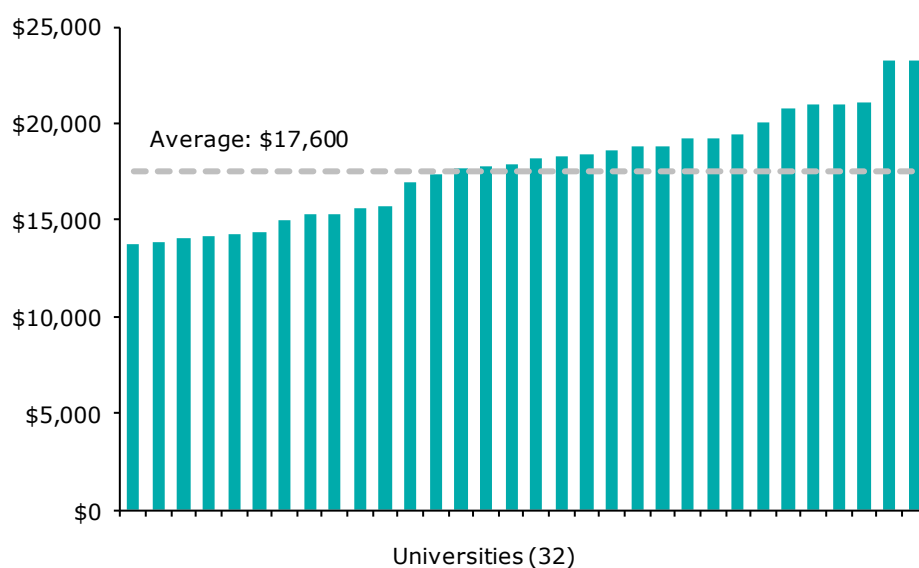
The data collection and statistical methods applied in this study were specifically designed to mitigate these limitations wherever possible – noting that in most cases they were limitations that had been encountered in a similar form in previous years. The provision of detailed Guidelines alongside consultation with universities and a subsequent data validation process was used to ensure that to the greatest extent possible the results were comparable over time and reliable.

The results of this study seek to capture the actual costs of teaching and scholarship for Australian public universities in 2018. They do not seek to capture the costs of teaching and scholarship required to meet specific quality benchmarks or to assess the relative efficiency of universities in delivering teaching and scholarship. These are nonetheless important policy questions – which were raised by a number of universities throughout consultations with the sector – that could be explored in future work.

The cost of teaching and scholarship in higher education

Across all FOEs, the average cost of bachelor teaching per EFTSL across the 32 universities sampled as part of this study was \$17,600 in 2018. Chart i below shows the distribution of the estimated average cost per EFTSL, which ranged from \$13,800 (21% below average) to \$23,300 (33% above average).

Chart i: Average bachelor unit costs per EFTSL by university



The variation in average costs reflects a range of contextual factors (such as differences arising from geography, scale, student mix, subject focus, and research intensity),⁶ as well as differences in strategic focus across institutions.

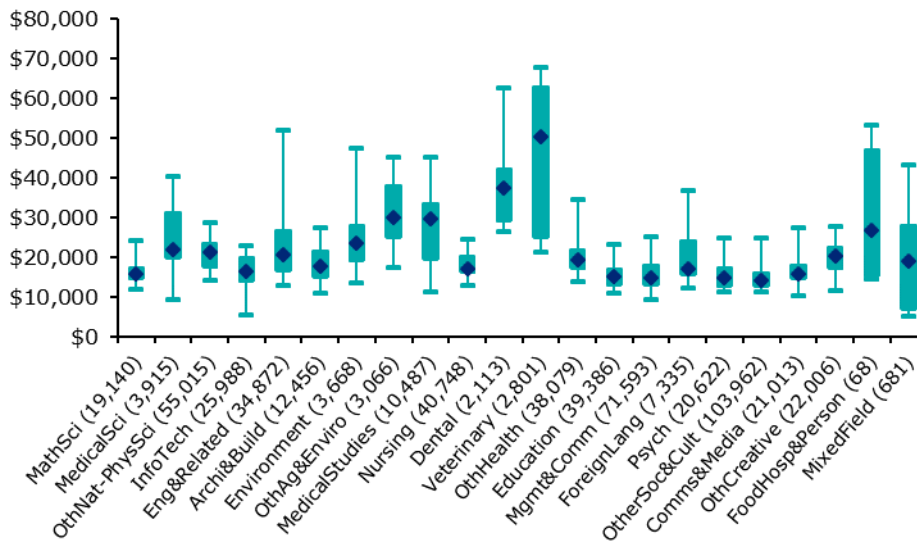
By field of education, average costs at the bachelor level range from \$14,300 per EFTSL in Other Society and Culture to \$50,200 in Veterinary Studies (Chart ii). Two other health science fields – Dental Studies (\$37,500) and Medical Studies (\$29,800) – along with Other Agriculture and Environmental Studies (\$29,900) are the next most costly, on average, at the bachelor level. Ten fields exhibit average costs per EFTSL at the bachelor level between \$14,000 and \$18,000 while a further seven exhibit average costs between \$19,000 and \$24,000.

Variation in cost at the bachelor level occurs not only across fields of education, but also across different universities delivering in the same field. Fields with higher average cost per EFTSL, such

⁶ Greater research intensity or focus within a field or institution may simultaneously drive higher costs in teaching, due to more senior professional staff with both teaching and research roles.

as Veterinary Studies and Dental Studies, tend to exhibit the widest variation in cost between universities.

Chart ii: Distribution of unit costs by field for bachelor studies

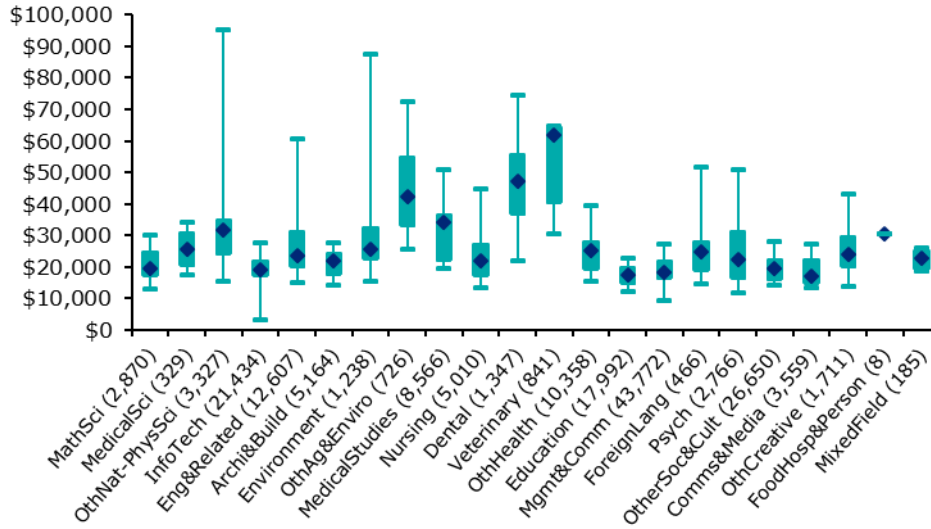


Note: 561 cost observations across 32 universities. Outliers excluded. Marker at mean, box width between 25th and 75th percentile, and tails at minimum and maximum. Total EFTSL counts are in parentheses after field labels.

Similar results by field of education are observed regarding costs per EFTSL at the postgraduate level (Chart iii). The health sciences fields – Veterinary Studies (\$61,900), Dental Studies (\$47,100) and Other Agricultural and Environmental studies (\$42,400) – exhibit the highest average cost per EFTSL at the postgraduate level, while Communications and Media (\$17,200), Education (\$17,700), and Management and Commerce (\$18,400) recorded the lowest average cost per EFTSL.

On average, the cost of postgraduate study per EFTSL is 22% (\$3,900) higher than bachelor level study. This may reflect differences in the way these qualifications are taught including potentially smaller class sizes, more senior teaching staff and different forms of instruction, among other reasons, such as the mix of fields taught. Variation in costs within fields also tends to be greater at the postgraduate level than for bachelor level studies, with the greatest variation observed in Environmental Science and Other Natural and Physical Sciences.

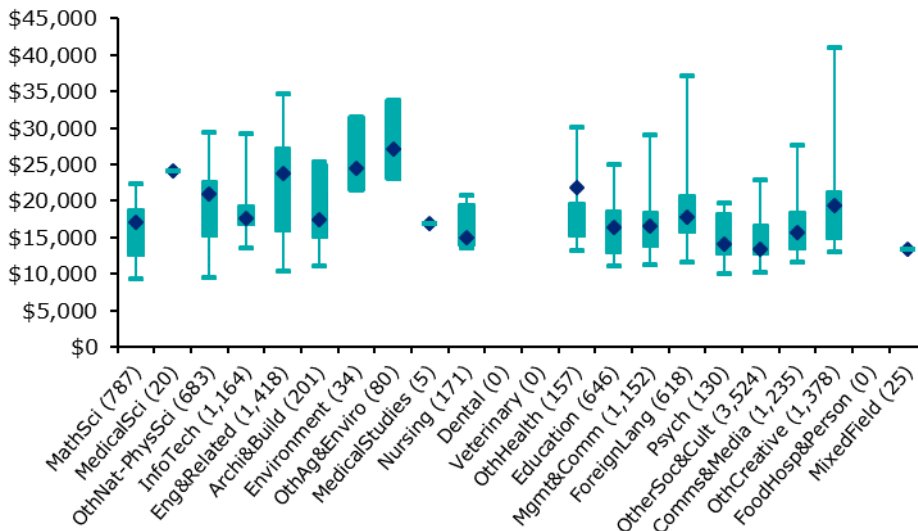
Chart iii: Distribution of unit costs by field for postgraduate studies



Note: 461 cost observations across 32 universities. Outliers excluded. Marker at mean, box width between 25th and 75th percentile, and tails at minimum and maximum. Total EFTSL counts are in parentheses after field labels.

In contrast to the postgraduate level, studies at the sub-bachelor level tend to exhibit on average lower costs per EFTSL (2% or \$400 lower) than at the bachelor level. At the sub-bachelor level, while there is less variation in average costs per EFTSL across fields compared to postgraduate and bachelor level studies, there is nonetheless comparable variation within fields (Chart iv).

Chart iv: Distribution of units costs by field for sub-bachelor studies



Note: 203 cost observations across 29 universities. Outliers excluded. Marker at mean, box width between 25th and 75th percentile, and tails at minimum and maximum. Total EFTSL counts are in parentheses after field labels.

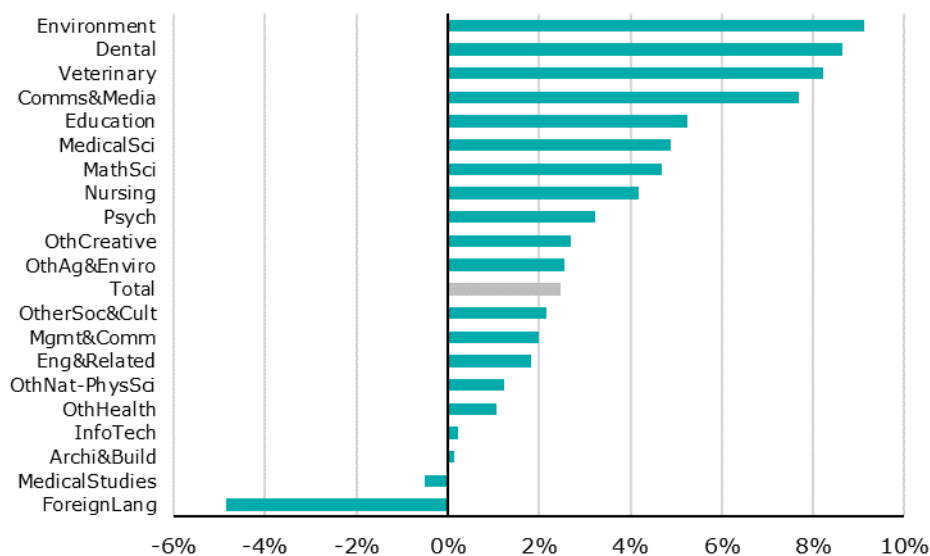
How these findings compare to previous studies

Examining the results of the common sample of universities between the two studies provides an indication of how the cost of teaching changed between 2017 and 2018, on average and across fields.

While a handful of refinements were made to the cost collection methodology in the 2019 study, the most significant of these involved the inclusion of an optional depreciation adjustment which was incorporated 'below the line' and thus did not affect the comparability of results 'above the line'.⁷ Nevertheless, comparability can be influenced by factors such as one-off costs, changes to university structures (within a given university) and ongoing policy and strategic changes in the sector.

Of the 22 fields, fifteen experienced cost growth of less than 5% (chart v). Of the seven fields where costs grew by more than 5%, the largest unit cost increases in percentage terms were mostly in fields that were delivered at a relatively small scale and by only a few universities (including Mixed Field Programmes; Food, Hospitality and Personal Services; Dental Studies; and Veterinary Studies). It is also the case that a handful of universities with a large share of total EFTSL experienced relatively high cost growth in Environmental Studies; Dental Studies; Veterinary Studies; and Education. In Communication and Media Studies cost growth above 5% was experienced by the majority of universities.

Chart v: Comparing average cost growth from 2017 to 2018 for bachelor studies (2017 common sample (25 universities))



Note: chart excludes growth in costs for Food, Hospitality and Personal Services (14%) and Mixed Field Programmes (75%).

The figures in Table i show the average cost per EFTSL for 2010, 2015, 2017 and 2018. The cost data is shown for the full sample in each year as well as for the common sample of universities (where available).

The average cost per EFTSL for bachelor study rose from \$17,300 in 2017 to \$17,700 in 2018 for the 25 universities that provided data in both years, an increase of 2.5% as shown in Table ii.

⁷ 'Above the line' costs are those provided in the TCW that reconcile to statutory accounts. A number of additional cost items are able to be reported by universities, but these are optional. These additional cost items are referred to as 'below the line costs' and include in-kind and third party/partnership costs among others. A full description of these can be found in Appendix B.

Average unit costs for the full sample of 32 universities was slightly lower at \$17,600, but broadly similar given that most universities in the full sample were also in the common sample.

The average cost per EFTSL for postgraduate study decreased from \$22,200 in 2017 to \$22,000 in 2018 for the 25 universities that provided data in both years, a decrease of 0.8%. Only ten of the 25 universities included in the common sample reported lower postgraduate costs per EFTSL in 2018 compared to 2017, but these ten universities included a number of universities with a large share of postgraduate student load – indeed these ten universities accounted for approximately half of all postgraduate EFTSL in the common sample. The average cost of postgraduate study remains 22% higher than the average cost of bachelor study.

Table ii sets out the growth in costs over time for different time periods. Annual growth in costs for bachelor level study when examined for a common sample has consistently ranged between 2-3%. A slightly wider range of results is found for postgraduate coursework. Given the change in sample in each year, the common sample is likely to provide a more reliable basis for estimating changes in costs over time than the full sample.

Table i: Average unit cost per EFTSL

	Year	2010 sample (8 universities)	2015 sample (17 universities)	2017 sample (25 universities)	2018 sample (32 universities)
Bachelor	2010	\$15,100	-	-	-
	2015	-	\$16,200	-	-
	2017	-	\$16,900	\$17,300	-
	2018	-	\$17,500	\$17,700	\$17,600
Postgraduate	2010	\$17,400	-	-	-
	2015	-	\$20,500	-	-
	2017	-	\$21,800	\$22,200	-
	2018	-	\$21,900	\$22,000	\$21,500
Total	2010	\$15,500	-	-	-
	2015	-	\$17,000	-	-
	2017	-	\$18,100	\$18,400	-
	2018	-	\$18,600	\$18,700	\$18,500

Table ii: Growth over time in average unit cost per EFTSL

		Bachelor		Postgraduate		Total	
		% growth	CAGR	% growth	CAGR	% growth	CAGR
2015 - 2017	Common sample (17 universities)	4.6%	2.2%	6.4%	3.1%	5.9%*	2.9%*
2015 - 2018	Common sample (17 universities)	8.0%	2.6%	6.5%	2.1%	8.9%*	2.9%*
2017 - 2018	Common sample (25 universities)	2.5%	-	-0.8%	-	1.9%*	-

Note: CAGR indicates Compound Annual Growth Rate. * Includes costs related to sub-bachelor study. Total growth exceeds growth in bachelor and postgraduate costs in some cases due to both the inclusion of costs for sub-bachelor level study and also compositional shifts which have resulted in a greater share of total EFTSL comprising postgraduate coursework students (who have a higher average cost per EFTSL).

Costs and funding

The cost of delivering teaching and scholarship for bachelor studies was 89% of the average base funding across the 32 universities sampled (Chart vi). A number of fields had an average cost greater than average funding. These included Food, Hospitality and Personal Services (208%), Veterinary Studies (148%), Mixed Field Programmes (148%), Management and Commerce (116%), Dental Studies (111%) and Creative Arts – Other (105%). Fields such as Food, Hospitality and Personal Services, Mixed Field Programmes, Veterinary Studies and Dental Studies were delivered at a relatively small scale and by only a few universities. In the case of Management and

Commerce and Creative Arts – Other, student load is larger but these fields receive a relatively low amount of base funding per EFTSL.

Chart vi: Average unit costs as a proportion of base funding for bachelor, full sample

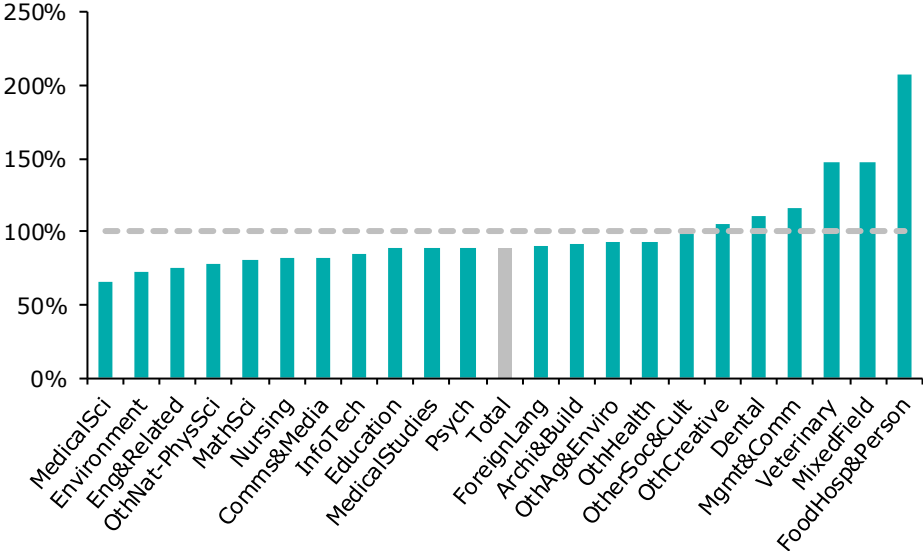


Table iii compares the cost of teaching and scholarship relative to Commonwealth Supported Place (CSP) funding (the sum of CGS and student contributions) over time. For the 2015 common sample of 17 universities who participated in 2016, 2018 and 2019, this ratio has increased from 85% in 2015 to 89% in 2018. For the 2017 common sample of 25 universities, this ratio increased from 89% in 2017 to 90% in 2018. This shift is consistent with cost per EFTSL growing more quickly than base funding per EFTSL with the latter growing relatively slowly over these periods.

Table iii: Teaching costs relative to CSP funding for bachelor studies

Year	2015 sample (17 universities)	2017 sample (25 universities)	2018 sample (32 universities)
2015	85%	-	-
2017	87%	89%	-
2018	89%	90%	89%

Note: Figures can be interpreted as the average unit cost per EFTSL as a proportion of average Commonwealth Supported Place (CSP) funding which includes the Commonwealth contribution amounts and Student Contribution amounts.

Importantly, the ratio of teaching costs relative to CSP funding has been calculated based on the maximum CSP funding rates that can be received by a university. In this respect, these figures do not account for the potential impact of measures announced as part of the 2017-18 Mid-Year Economic and Fiscal Outlook (MYEFO) which capped total CGS funding for bachelor degrees courses in 2018 and 2019 at 2017 levels. Universities that had a similar or higher level of enrolments in 2018 relative to 2017 would thus in aggregate receive a CGS contribution per student that was below the maximum levels.⁸

The optional depreciation adjustment was reported by nine universities and the increase in cost per EFTSL among those universities who reported on this adjustment was \$424 (or 2.18%). When in-

⁸ As CGS rates were indexed to grow between 2017 and 2018, universities with constant enrolments between 2017 and 2018 would be funded at 2017 CGS per student rates.

kind costs and third-party and partnership costs are also included, the total impact on the average cost per EFTSL associated with the inclusion of below the line items was \$313 for the sector as a whole, or \$888 among those universities who reported at least one of these costs. Across the sector, the inclusion of these below the line items increased cost per EFTSL by 1.69% across all levels, from \$18,500 to \$18,800. For those universities who reported these below the line items, this increase was 4.65%, from \$19,100 to \$20,000.

While this impact is relatively small, the inclusion of below the line items is likely to be more important for some institutions in promoting comparability, while accounting for differences in the way partnerships are structured or how depreciation is calculated across the sector.

Nevertheless there remains scope for further consideration of the way below the line items are included in the cost collection exercise. In particular, in-kind costs are reported by relatively few universities. The concept of in-kind costs remains somewhat unclear especially for those universities participating in the exercise for the first time.

There is also some justification for considering including in-kind costs above the line (for the few universities who have or can identify these costs) since they are incurred by universities themselves and thus appear in financial statements. Now that there is also a two year time series of data on third-party costs there may also be value in incorporating these in comparisons of costs over time, particularly if the sector moves towards more complex revenue sharing arrangements with partners. Finally, further consideration could be given to how results incorporating the optional depreciation adjustment are incorporated in future exercises.

Concluding remarks

The results presented in this report build on the findings of the 2018 study on the costs of teaching and scholarship in Australia. Indeed, the relative consistency of results across the two most recent studies, which have adopted a consistent cost collection template and data collection guidelines, provides policymakers with a greater level of confidence in the reliability of the findings and their comparability over time. This consistency has also been welcomed by the sector to the extent that it has allowed them to develop reporting systems that align with the cost collection template.

Notwithstanding the value of consistency, there remains scope to continue to refine the exercise over time both in striving to more accurately capture the economic costs of teaching and scholarship but also to cater for new developments and trends in the sector. Many universities themselves also sought to refine their cost allocation models in 2019 in order to more accurately capture teaching and scholarship expenses or incorporate more granular data sources. The decision by the Department to commence a feasibility study into extending the scope of this exercise to include research costs is itself an important step in seeking to build on the evidence base on teaching and scholarship costs provided by this study.

The 2019 teaching and scholarship exercise saw a number of refinements introduced to the TCW as well as more detailed guidance in the Data Collection Guidelines. However, the way in which capital costs are included remains an issue which continues to attract a range of views across the sector. Although some universities believe that depreciation remains the most appropriate basis for consistently comparing capital costs across the sector, almost 70% of universities involved in the 2019 exercise felt that it was an imperfect measure of capital costs. In particular, many universities noted that it was insufficient to account for the current capital costs that would be required to update facilities to meet modern teaching standards. These concerns highlight the challenges of capturing capital costs in such an exercise, particularly given the diversity of views and circumstances of Australian universities.

It is clear that the sector remains open to considering ways to refine the collection methods so as to further increase their accuracy. Consistent with the history of this exercise, the merit of proposals for refinement will need to be assessed against the guiding principles that translate the overarching policy intent into a practical data collection process.

1 Background

In order to support the extensive public and private benefits that universities generate, the Australian Government provides significant financial support and funding to the sector and users. This support is provided through a variety of forms ranging from specific grants for research or infrastructure through to CGS funding for Commonwealth supported students. Universities also receive revenue from a range of private sources.

Universities use this revenue to support a range of activities and outcomes, broadly including teaching and scholarship, research and community engagement. The relative importance of these activities in terms of resource allocation may differ according to the specific strategy of each institution.

Given the range of outcomes and funding sources received by universities, understanding the level of expenditure on teaching and scholarship, and how this varies by discipline, is important to the ongoing monitoring and, as appropriate, refinement of policy settings. Such information can also be instructive to the sector's other stakeholders.

In this context, Deloitte Access Economics has been engaged by the Australian Government Department of Education (the Department) to collect and analyse data on the cost of delivering higher education – the costs of teaching and scholarship – at Australia's public universities.

This exercise extends on three previous studies. In 2018 and 2016, Deloitte Access Economics collected teaching and scholarship cost data related to activity in the 2017 and 2015 calendar years from universities. A study with similar intent was also undertaken in 2011. Each year, the coverage of the university sector has expanded, with the current collection being the penultimate year before the exercise is extended to all public universities. With each data collection, areas of improvement and refinement have been incorporated into the collection to improve the quality and consistency of data collected while also seeking to minimise the administrative burden on universities.

This chapter:

- Provides more context on the objectives of the Transparency in Higher Education expenditure project (Section 1.1);
- Describes the changes in methodology from the 2018 study, including the process and decision-making behind each change (Section 1.2);
- Summarises the process and planning for sampling universities in 2019 and extending the process to all public universities in 2020 (Section 1.3);
- Explores recent trends in the delivery of higher education (Section 1.4); and
- Outlines the remaining report structure (Section 1.5).

1.1 Purpose and objectives

The overarching outcome of this exercise is to build and develop the evidence-base on the cost of providing teaching and scholarship in higher education in order to better inform student decision-making and future decisions regarding the policy architecture for higher education in Australia. In order to achieve this overarching outcome, the Department has set a number of key objectives for this exercise:

1. Accurately measure the costs of teaching and scholarship⁹ by field and level of education.
2. Support the continued transition to a more comprehensive, systematic and streamlined data collection process over the three years (2018 to 2020) and beyond.

⁹ For simplicity, references to teaching and scholarship costs, and teaching costs are treated synonymously in this report.

3. Provide universities with additional data to benchmark their costs against others in the sector.

Maintaining consistency is essential to support the comparability of costs over time, enabling a richer measurement and understanding of the year-to-year variability in institutions' activities and costs. The imperative to retain consistency is pursued in the context of the learnings and refinements that conducting the exercise year after year generates. The practical challenges associated with implementing identified improvements while preserving comparability is an important trade off in this exercise, which is discussed in further detail in section 1.2 below.

More broadly, a number of principles have informed the process and methodology underpinning the cost collection. The final approach sought to establish a dataset which, to the greatest extent possible, was:

1. Reliable – such that a suitable level of assurance can be established regarding the underlying data;
2. Comparable – across universities, given differences in university context, and over time;
3. Attributable – ensuring costs are captured only to the extent that they are incurred as a result of a defined and in-scope activity; and,
4. Actual – in that the economic rather than the accounting measure of cost¹⁰ is of primary interest to the exercise.

1.2 Changes to the exercise in 2019

A number of incremental changes to the process and template for collecting data from universities have been implemented for the 2019 collection. As the exercise enters its second year, these changes have sought to strike a balance between incorporating feedback from the sector to streamline and clarify the process, while maintaining year-on-year consistency. These changes were developed in collaboration with the sector (see Box 1.1 below on university engagement) and with the overarching aim of strengthening adherence to the four principles outlined immediately above. The key changes, and their basis, are described in Table 1.1 below.

Consultation and feedback from a number of universities indicated that the consistency of the template structure greatly eased the workload and improved usability. The main data collection template is provided in Appendix A and the accompanying data collection Guidelines are provided in Appendix B of this report.

¹⁰ Economic costs include both accounting costs but also the opportunity cost involved in using a given resource for a particular activity.

Table 1.1: Key changes to the template for 2019

Including an optional depreciation adjustment	<p>Consistent with Australian accounting standards, universities have a wide range of options for the accounting policies in use for the depreciation of building and other infrastructure assets. Universities may adopt the revaluation model, with use of actuarial estimates to adjust buildings to fair value, whereas others use historical book value. In cases where a university has fully depreciated assets that are still in use or where historical book value differs from the cost of replacing a building in its current condition, depreciation may not accurately reflect the full economic costs of using these buildings for teaching activities. This may also apply to assets other than buildings, such as plant and equipment assets.</p> <p>To better understand the extent to which current measures of depreciation are impacted by these issues, universities are given the option to include a depreciation adjustment.</p>
Improving usability of the template	<p>This included adding a 6-digit FOE concordance in a separate worksheet to facilitate lookups, locking down cell values between 0% and 100% where appropriate, providing greater clarity in labelling optional items.</p>
Providing greater clarity on third-party costs to be included above and below the lines	<p>The Guidelines have been revised to provide greater clarity on the nature of third-party costs to be included above and below the line. The particular point of clarification is that third-party costs that are included in a university's financial statements are to be included above the line, with any third-party costs that do not appear in a university's financial statement to be treated as an additional item and listed below the line.</p>
Clarification that inclusion of in-kind costs and separate identification of placement costs is optional	<p>The TCW was amended to note that inclusion of in-kind costs and separate identification of placement costs were optional. A further example on potential in-kind costs was also added to the Guidelines.</p>

Box 1.1: University sector engagement

The development of the TCW and associated data collection Guidelines for this exercise involved significant engagement and collaboration with the sector, including key university stakeholders and the peak body Universities Australia (UA), as well as the Department.

Alongside ongoing communications, this sector engagement included a UA Reference Group (consisting of university representatives, representatives from UA, the Department, and Deloitte Access Economics), a Technical Working Group, and a one day forum to introduce new universities to this exercise. The Technical Working Group provided a forum for discussing and resolving issues associated with the definition, specification and measurement of certain activities and costs; while the Reference Group served as the ultimate forum for strategic decision making.

All universities were issued with a detailed set of data collection Guidelines to ensure that the Transparent Costing Worksheet was filled out consistently. Consultations were also held with all universities to ensure a common approach was undertaken to capturing the costs of teaching and scholarship across the sector.

1.3 University sample

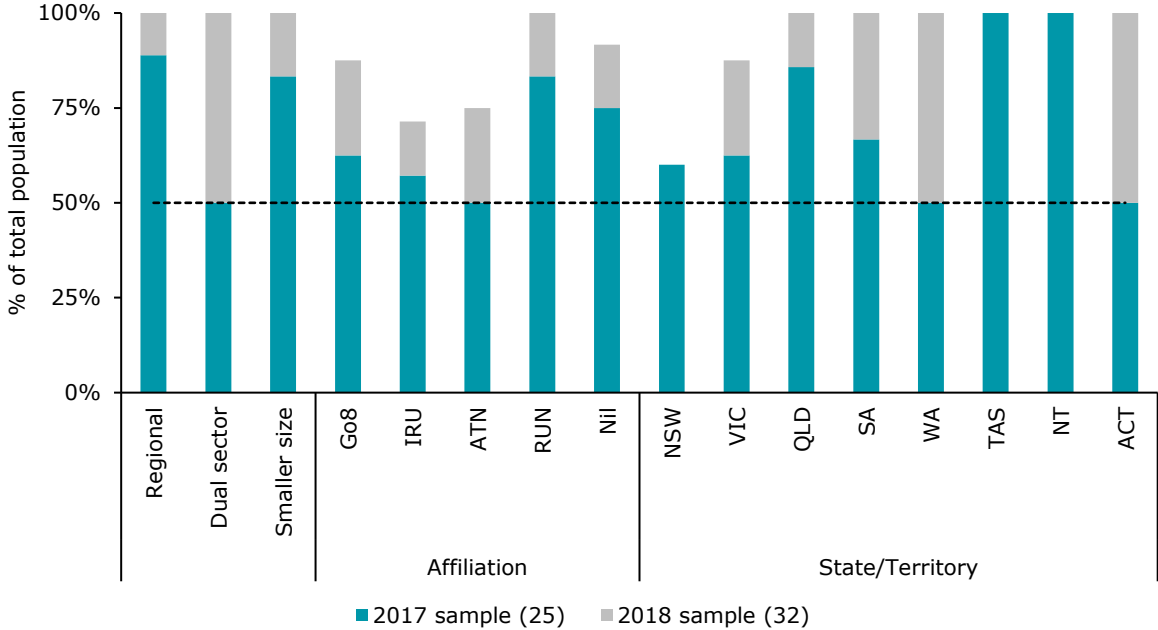
While the 25 universities that participated in the 2018 study were broadly representative of the sector and covered 65% of all enrolments, the selection and inclusion of an additional five universities for the 2019 study was designed to incorporate the broadest sample of universities before moving to the full population of 37 public universities in 2020.

In particular, the 2019 study now includes full coverage of the following university characteristics:

- Dual sector universities
- Regional and Regional Universities Network affiliated universities
- Smaller universities (fewer than 15,000 domestic enrolments)
- Universities from Queensland, South Australian, Western Australia, Tasmania, Northern Territory and Australian Capital Territory.

The 2019 study improves upon the minimum 50% coverage across the key university characteristics set out in 2018 (Chart 1.1). The universities to be included in 2020 teach the majority of their enrolments at campuses in Melbourne or Sydney.

Chart 1.1 Representativeness of the 2019 study by key university characteristics



Note: This report, the 2019 study, presents the results relating to university activity (and EFTSL) in the 2018 calendar year. The university sample for this study is therefore referred to as the 2018 sample of 32 universities.

The 2019 study also covers:

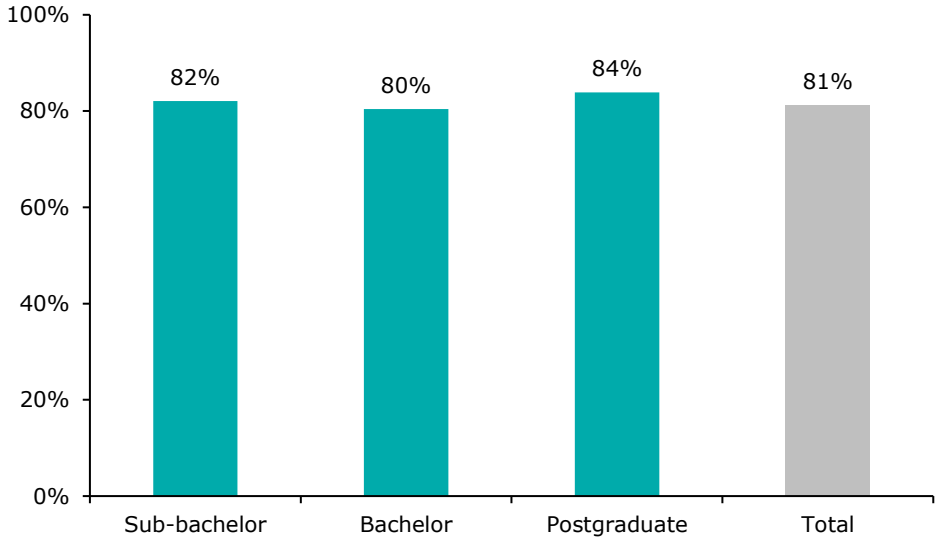
- 81% of all in-scope EFTSL from the 37 universities (Chart 1.1);
- At least 80% of all EFTSL delivered across each of the three levels of education: sub-bachelor, bachelor, and postgraduate (Chart 1.2); and
- At least 74% of all EFTSL delivered across each of the 22 key fields of education, excluding Mixed Field Programmes¹¹ (Chart 1.3).

Table 1.2: Planned participation by universities

2016 <i>Third year of participation in this study</i>	2018 <i>Second year of participation in this study</i>	2019 <i>New to this study</i>	2020 <i>Scheduled for first inclusion</i>
1. Australian Catholic University	18. Charles Darwin University	26. Central Queensland University	33. La Trobe University
2. Charles Sturt University	19. Curtin University	27. Edith Cowan University	34. Macquarie University
3. Deakin University	20. Federation University Australia	28. Murdoch University	35. The University of New South Wales
4. Griffith University	21. Flinders University	29. RMIT University	36. University of Technology Sydney
5. James Cook University	22. University of Canberra	30. Swinburne University of Technology	37. Western Sydney University
6. Monash University	23. University of South Australia	31. The Australian National University	
7. Queensland University of Technology	24. University of Tasmania	32. The University of Adelaide	
8. Southern Cross University	25. The University of Western Australia		
9. The University of Melbourne			
10. The University of New England			
11. The University of Newcastle			
12. The University of Queensland			
13. The University of Wollongong			
14. University of Southern Queensland			
15. University of Sydney			
16. University of the Sunshine Coast			
17. Victoria University			

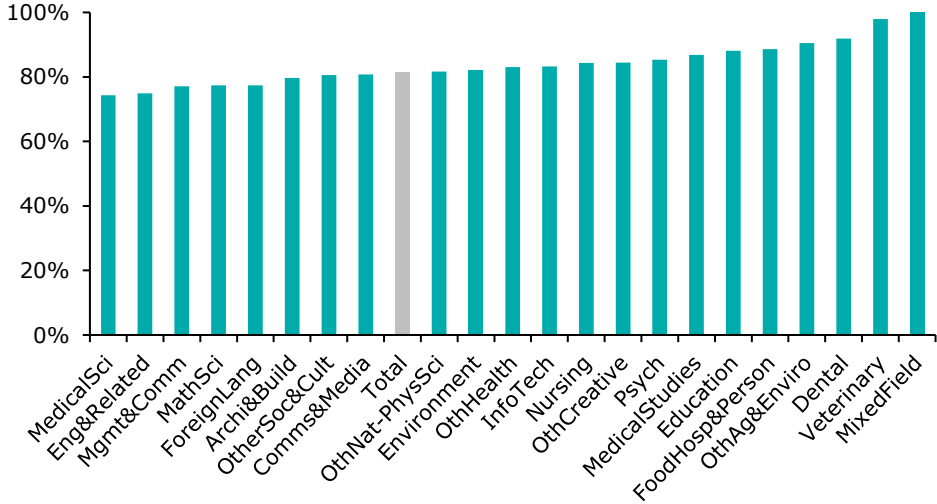
¹¹ Notably, Mixed Field Programmes represent a very small proportion of EFTSL in higher education and are foundation programs delivered by few institutions.

Chart 1.2: EFTSL coverage of the 2018 sample (32 universities) by level



Source: Cth DET data. Note: This report, the 2019 study, presents the results relating to university activity in the 2018 calendar year. In the chart above, the EFTSL coverage is measured for EFTSL in the 2018 calendar year.

Chart 1.3: EFTSL coverage of the 2018 sample (32 universities) by field



Source: Cth DET data. Note: Total EFTSL including domestic and international, and all levels of education. The university sample for the 2019 study uses EFTSL corresponding to the 2018 calendar year, the year of cost data analysed in this study.

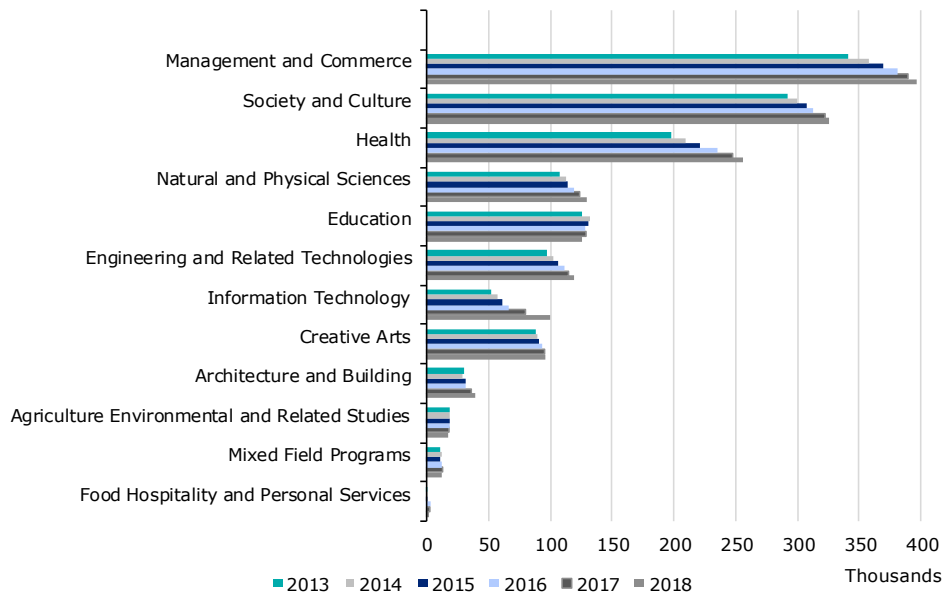
1.4 Trends in higher education delivery

Demand for Australian higher education has been steadily increasing over recent years. Chart 1.4 describes the growth in student enrolments across the sector by broad (2-digit) fields of education. Notably, Information Technology grew by 91% over 2013-18 (a 25% increase between 2017 and 2018), and Health by 30%. Agriculture, Environmental and Related Studies is the only field to have contracted over this period (-6%).

Over the same period, enrolments in each state and territory have experienced positive growth, with Tasmania growing by 35% and Victoria by 28%. The slowest growth in enrolments were in

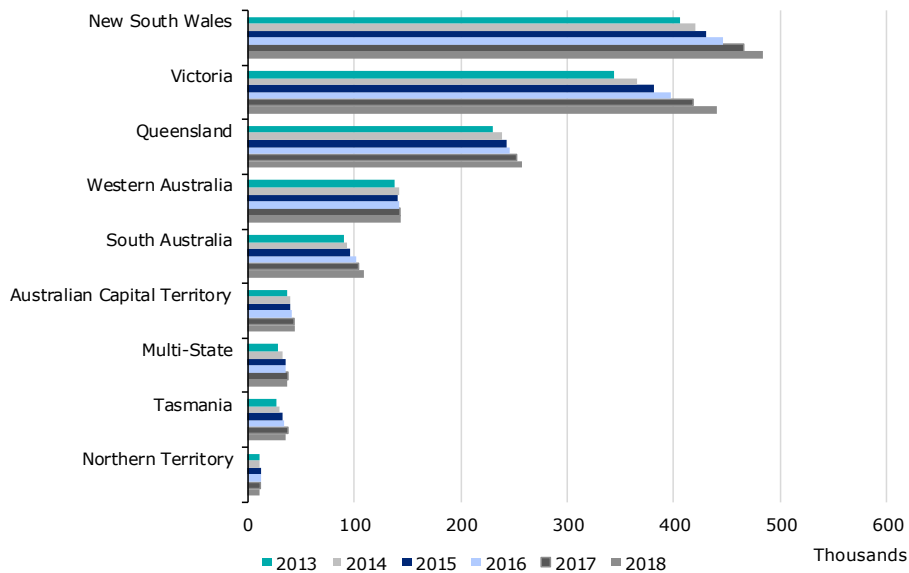
Western Australia (4%), Northern Territory (5%) and Queensland (11%). Notably, since 2014 enrolments in Western Australia have not grown by more than 1.2% year-on-year (Chart 1.5).

Chart 1.4: Student enrolments over time by field of education



Source: Cth Department of Education data. Note: Total enrolments including domestic and international students, and all levels of education.

Chart 1.5: Student enrolments over time by state



Source: Cth Department of Education data. Note: Total enrolments including domestic and international students, and all levels of education

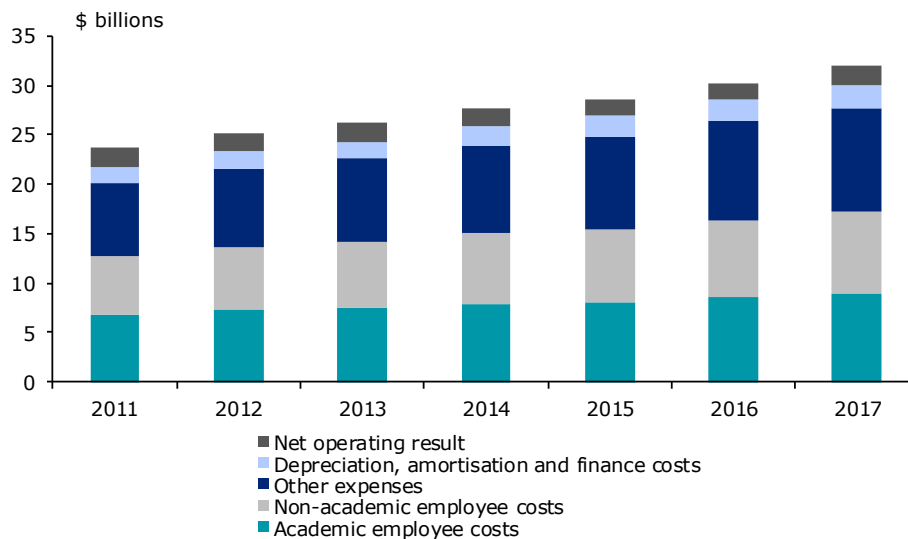
Sector-wide changes in aggregate financial measures (i.e. revenue and expenses) provide a useful point of reference on the growth in costs for the university sector in recent years.

Total university expenses have increased on average by 5.6% each year over 2011-17 (Chart 1.6). The largest growth in expenses related to depreciation, amortisation and finance costs (7.5% year-

on-year average), while net operating results have rebounded with a 28% year-on-year increase between 2016 and 2017 after experiencing an average year-on-year contraction of 4.1% for the five preceding years.

Labour costs represented 57% of total expenses (30% academic, 27% non-academic) in 2017, a ratio that has been almost constant for the past 7 years.

Chart 1.6: Total expenses and net operating result for Australian public universities (2011-17)



Source: Cth DET data

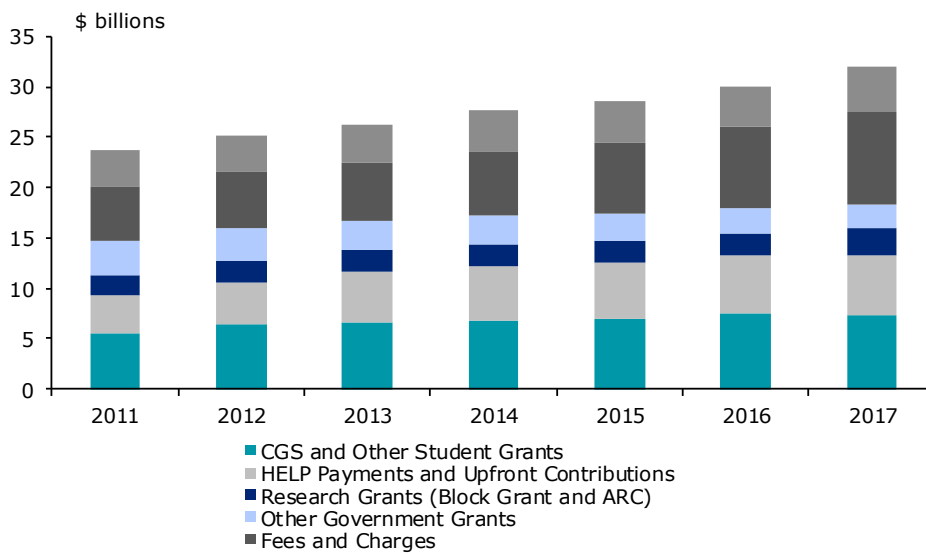
Over the same period, average revenue growth has been 5.2%, with the revenue sources experiencing the strongest growth being fees and charges¹² (9.1%) and HELP payments¹³ and upfront contributions (7.7%). CGS and other student grants grew by 5.4% a year on average over this period while Other Government Grants contracted on average by 5.8% each year over this time (Chart 1.7).

HELP payments and upfront contributions had remained stable at 19% since 2013, but have marginally fallen to 18% in 2017. Fees and charges have consistently increased from 23% of revenue in 2011 to 29% in 2017.

¹² Fees and charges are paid by international and domestic students enrolled in courses which are not Commonwealth supported (i.e. not subsidised by the Australian Government) and for which tuition fees are payable (i.e. those not paid via HELP loans).

¹³ Higher Education Loan Program (HELP) refers to a number of Commonwealth loan policies to support student contributions, as well as fees and other selected expenses related to study.

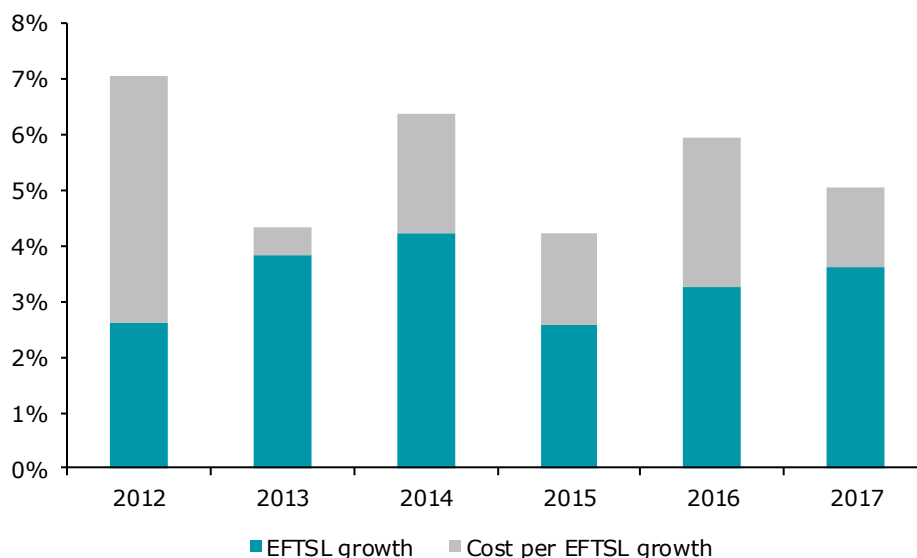
Chart 1.7: Total revenue for Australian public universities (2011-17)



Source: Cth DET data

Growth in total costs can be decomposed between growth in total EFTSL (i.e. increases in student volumes) and growth in unit costs (i.e. increases in average cost per EFTSL). Chart 1.8 shows this decomposition and the high variance of unit cost growth year-on-year. Since 2013, EFTSL growth has been the more significant driver of cost growth relative to increases in cost per EFTSL.

Chart 1.8: Cost growth decomposed by growth in EFTSL and growth in unit costs (2012-17)



Source: Cth DET data. Note: Total EFTSL including domestic and international, and all levels of education

These trends highlight the association between student enrolments and growth in costs in the sector as a whole and provide useful background for assessing changes in the costs of teaching and scholarship over time, which is examined in the following chapter.

1.5 Report structure

The remainder of the report is organised as follows:

- Chapter 2 – Reports the core quantitative analysis and key results, in terms of the costs of teaching and scholarship, including the distribution and variation across fields, levels and university contexts. This chapter also includes a comparison of costs between this study and the previous 2016 and 2018 studies, and analysis of 'below the line' costs.
- Chapter 3 – Presents a discussion of the key considerations and limitations of this exercise, particularly in interpreting the results, as well as reflections from participant universities. The chapter also sets out a range of considerations in relation to the way capital costs are incorporated in the exercise.
- Chapter 4 – Explores potential areas for improvement of this exercise, including in the planned 2020 iteration. This discussion also includes reflections and feedback from participant universities.

Appendix A contains a screenshot of the costing template used for universities to submit their data and Appendix B contains the data collection Guidelines provided to universities.

2 Cost of teaching and scholarship

This chapter details the core quantitative analysis and results of the data collection on the cost of delivery of teaching and scholarship at Australian universities. This chapter presents a series of results regarding the distribution and variability of costs – at the university, field and level of education level. Specific cost line items are analysed, and some exploration of systematic cost variations among key contextual factors or drivers is undertaken. Following the 2018 study scope, this report does not seek to provide estimates of the reasonable costs of teaching and scholarship by field of education, or to use a regression framework to identify the size of particular cost drivers but instead focuses on the actual costs incurred by universities in the 2018 calendar year. The findings of the 2016 report, which did undertake such analysis, is summarised in Box 2.3 below.

A very small selection of field-level observations were excluded from the results included in this report as they were identified as outliers. The process for identifying outliers is summarised in Section 2.2.

While the results of this 2019 study are comparable to those from the 2018 study and indeed are collected using a consistent cost collection template, the sample is slightly different to 2018. Hence results are presented with both a common sample across the two studies and the full 2019 sample. Importantly, the results in sections 2.1 to 2.4 focus on above the line items which are also available from the 2011 and 2016 studies. Results including below the line items are discussed in section 2.5 as these items have only been included since 2018.

The remainder of this chapter is structured as follows:

- Section 2.1 describes the distribution of costs within a university, including the total cost per EFTSL.
- Section 2.2 presents the key cost distributions by field and level of education.
- Section 2.3 contrasts average costs with base funding levels.
- Section 2.4 compares the results of the previous section to those in the 2016 and 2018 study, noting some caveats on comparability.
- Section 2.5 examines the addition of below the line costs, which were introduced in this study to more fully capture the true economic costs of teaching and scholarship.
- Section 2.6 provides consideration of some of the contextual factors that may influence cost, informed by the 2016 study of cost drivers and consultation with the sector.

2.1 Distribution of types of costs

Total costs attributable to teaching

Australian public universities generate a range of outputs, including not only teaching and scholarship, but research, commercial activities and community outreach. Understanding the relative share of expenditure on teaching and scholarship relative to other activities is useful in understanding the extent to which these activities consume university resources as well as the degree of variation across the sector.

As shown in Chart 2.1 below, on average, 52% of all university costs for the sector in 2018 were attributable to teaching and scholarship activities, as opposed to other university functions. There remains considerable variation in the share of teaching costs across universities. While 17 of the 32 universities had between 50-70% of total costs attributable to teaching, overall this figure ranged widely from 24% to 87% of total costs. This reflects the significant variation in the share of resources dedicated to teaching and scholarship relative to other activities across universities.

When comparing a common sample of 25 universities who participated in 2017 and 2018, the proportion of total costs attributable to teaching was similar on average (53% in 2017 falling to 52% in 2018). It increased year-on-year for 12 out of 25 universities. The largest year-on-year increase was 7%, while the largest decrease was -9%.

Chart 2.2 shows a lower average share of total expenses attributed to teaching for Group of Eight universities (39% in 2018 compared to a sector-wide average of 52%), which is likely to reflect their relative research-intensity and hence allocation of a greater share of expenses to research activities. This share is higher than average for other university affiliations and dual sector universities.

Chart 2.1: Proportion of total costs attributable to teaching

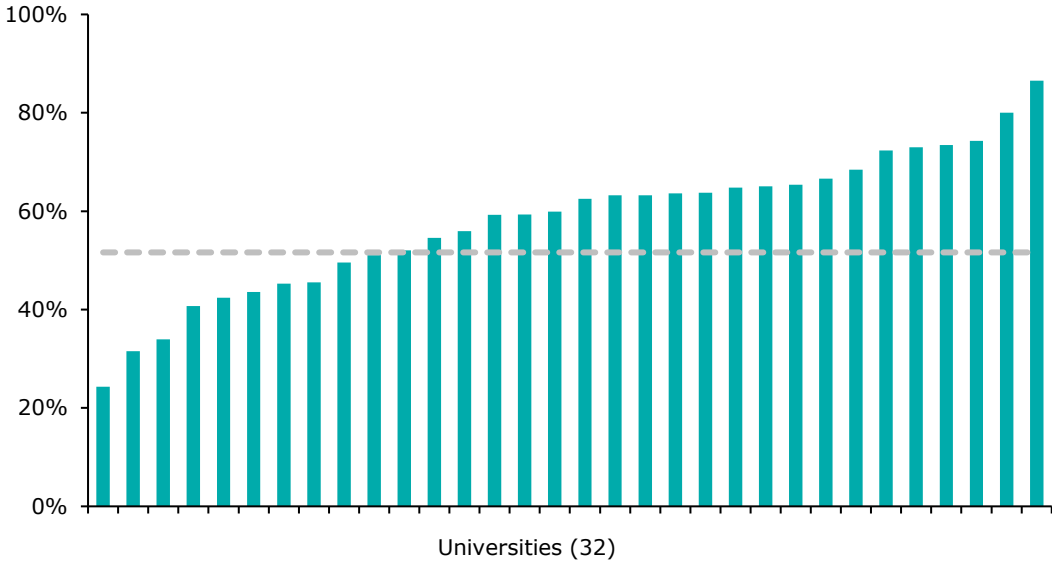
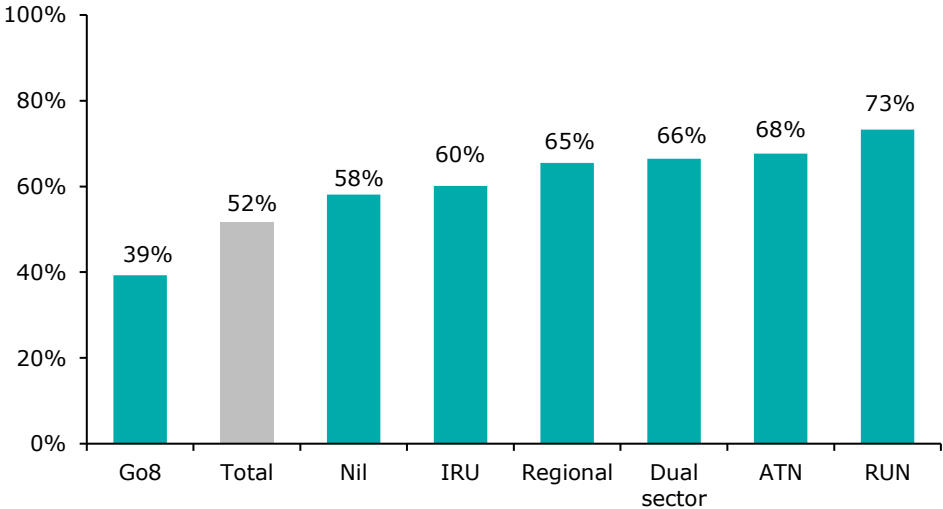


Chart 2.2: Proportion of costs attributable to teaching by university affiliation, 2018



Note: Categories are not mutually exclusive. That is, a given university can appear in more than one category.

Teaching costs attributable to staff

As a service industry, typically delivered face-to-face by highly skilled professionals, universities are highly labour intensive, and hence labour costs are likely to represent a significant contribution to total teaching costs.

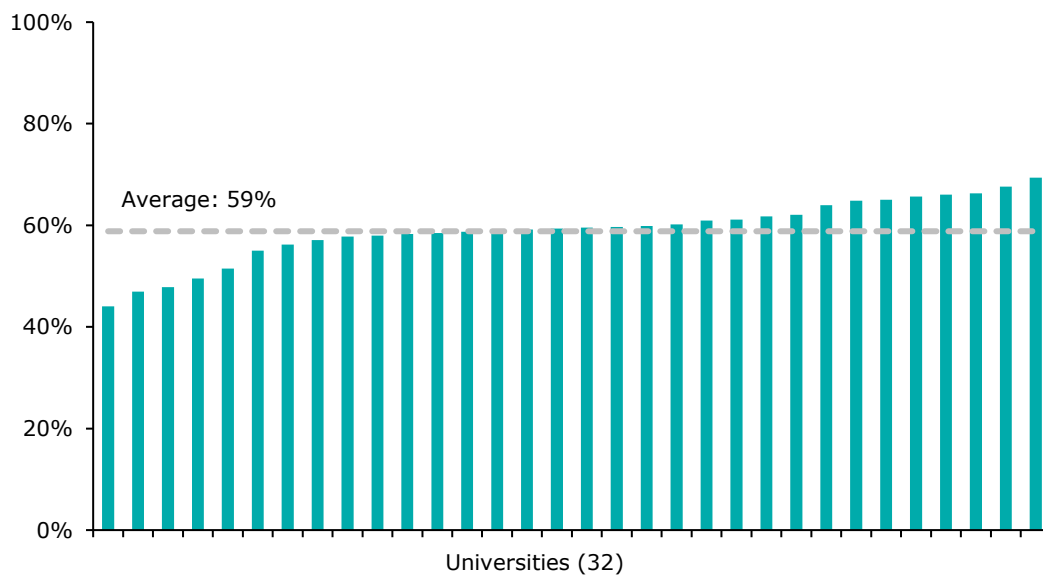
On average, 59% of teaching costs were attributable to staff,¹⁴ with 28 of 32 universities (88%) having staff teaching costs between 50-70% of all teaching costs (Chart 2.3).

These proportions ranged from 44% to 69% of total teaching costs, which may represent variations in:

- Scale, where size allows for fewer staff per enrolment
- Teaching and classroom practices, where some universities will adopt more intensive student-staff ratios
- Discipline focus, where some disciplines require smaller class sizes or more intensive teaching
- Differences in staff per student ratios across different levels of education
- Differences in mode of delivery, with different modes of delivery potentially utilising a different mix of labour and capital inputs.

The relative importance of labour costs highlights the impact that variations in the measurement and attribution of labour costs can have on the results of this exercise. These considerations are discussed in more detail in Section 3.2.

Chart 2.3: Proportion of teaching costs attributable to staff (versus non-staff)



Average unit teaching costs

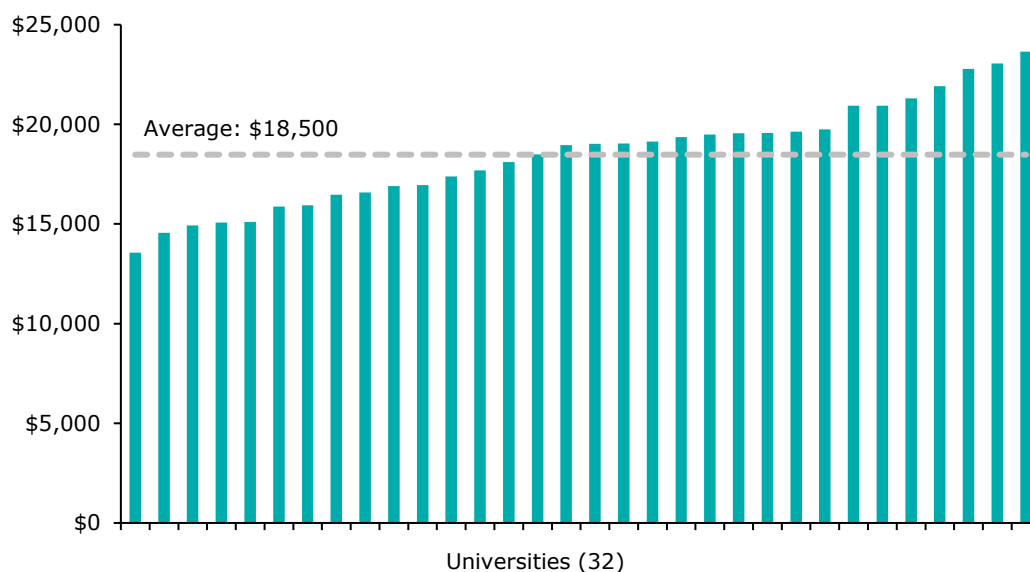
The key outputs of this exercise relate to unit teaching costs, namely average costs per EFTSL, and the variation in these unit costs by field and level of education.

While the average unit cost is \$18,500, Chart 2.4 shows that the average unit cost at each institution can vary, ranging from \$13,600 (27% below average) to \$23,700 (28% above average).

This variation represents, in part, the varied focus and context of universities across the sector. The following sections examine the degree of variation in unit costs across qualification levels and fields of education.

¹⁴ It should be noted that the true share of teaching costs attributable to higher education staff may be marginally higher as universities had the option to attribute teaching costs to third party providers under 'non-staff expenses'. Thus staff expenses (as described in this report) are likely understated.

Chart 2.4: Average unit costs by university (all fields and levels)



Note: This includes all data observations.

2.2 Costs by field and level of education

This section presents the costs of teaching and scholarship by field and level of education. Before discussing the results in detail, the first part of this section describes the sample size of each field and level of education and discusses the approach taken to addressing outliers.

Sample size for each field and level of education

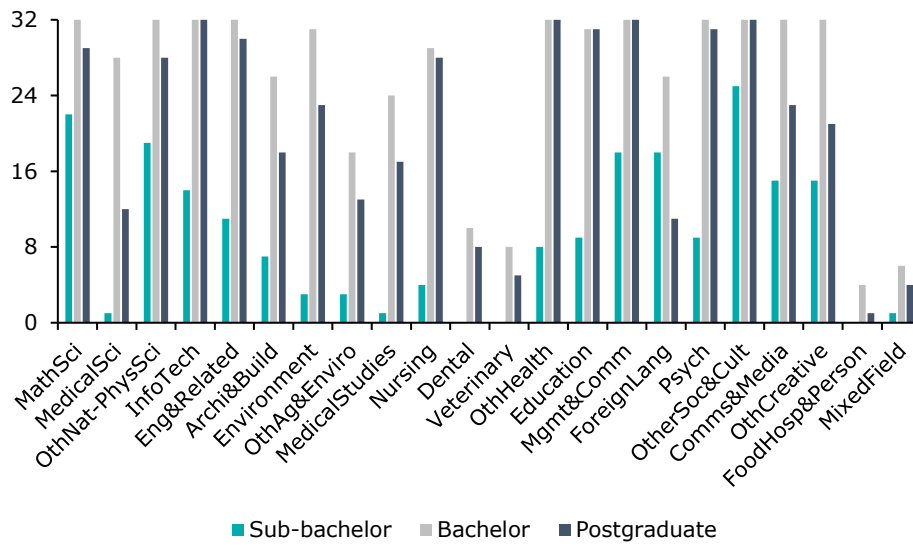
While universities offer a diverse and wide selection of disciplines and qualification types, some field and level combinations are significantly more common (e.g. Management and Commerce bachelor degrees are delivered at all 32 universities in the sample), while others are much less prominent, typically due to their specialist nature (e.g. Veterinary Studies, 7 of 32 universities). Chart 2.5 provides the sample size counts for each field-level combination.

In instances where a greater number of universities offer a specific field and level combination, there is greater confidence and robustness in the measurement of average costs. For costs with fewer respondents, while there is sufficient confidence in the individual data provided by each institution, there is greater uncertainty whether the results are reflective of the sector as a whole, or instead reflect university-specific factors.

To this point, the number of observations for sub-bachelor programs is systematically lower than bachelor and postgraduate, which is likely an accurate reflection of delivery in the sector, given the fewer number of programs offered and lower enrolment numbers in total. Similarly, there are fewer observations for Food, Hospitality and Personal Services and Mixed Field Programmes, as these fields are typically a greater focus for vocational education providers.

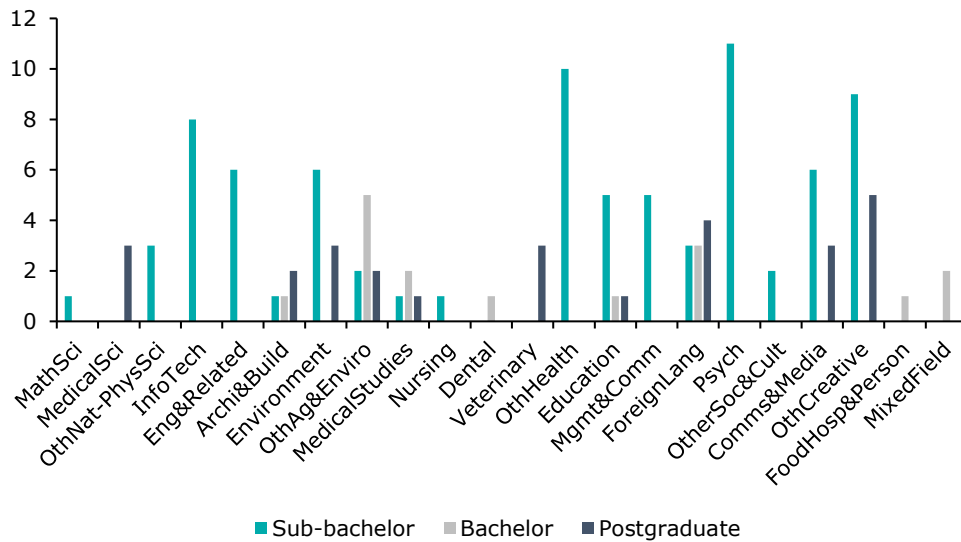
The analysis in this report excludes a number of university results for field-level combinations that were deemed to be outliers to the extent that they are unlikely to reflect the true cost of delivery. The approach to identifying outliers is set out in Box 2.1 below, while Box 2.2 discusses how to interpret the 'Box and Whisker' plots used in subsequent sections of this chapter. The count of cost observations deemed to be outliers within each field-level combination is presented in Chart 2.6.

Chart 2.5: Sample of cost observations by field and level of education



Note: Maximum total count is 32. Excluding outliers. See Box 2.1 for approach to excluding outliers.

Chart 2.6: Count of outlier cost observations removed by field and level of education combination



Note: See Box 2.1 for approach to excluding outliers.

Box 2.1: Data moderation process and exclusion of outliers

A moderation exercise was undertaken for each university upon receipt of the data. The goal of this exercise was to identify:

- any data entries that indicated an error had been made;
- any outliers (by levels and year-on-year growth) across FOEs or universities that should be further investigated; and
- broad indicators of the results (such as relativities across FOEs, and spreads within FOEs) that may guide the analysis of the data.

The data was assessed for errors using standard data validation techniques. This included identifying any instances of negative costs or cost shares implied by the data or cost shares exceeding 100%. Where such issues were identified, universities were followed up with to resolve the issue. The information provided in the qualitative submissions was also reviewed and used to inform the moderation process.

Ultimately, following conversations and validation with participants, some costs observations remained outliers. In most cases, these were due to field and level observations with very low EFTSL counts resulting in both instances of relatively high and low cost per EFTSL.

Overall, average costs for all fields of education remained materially unchanged as a result of excluding outliers since excluded observations (both high and low) tended to be those with very small EFTSL. However, for field-level combinations where only a small number of university observations are available, the inclusion of outliers can result in a relatively large (and likely unrealistic) spread of costs per EFTSL and can result in averages that may not reflect the typical cost of delivery. The impact of excluded outliers on average costs by field of education is insignificant for most courses at the bachelor level but is a significant issue for courses at the sub-bachelor level where sector EFTSL by field is especially low.

To account for these effects, the average and distribution of results by field of education was modified in the approach taken in the 2018 exercise. The following criteria were used to identify

- EFTSL counts of less than five;
- Costs per EFTSL of greater than \$100,000 and an EFTSL count of less than 10;
- Costs per EFTSL greater than \$300,000 (no observations this year were over this threshold); and
- Instances where participating universities have noted that costs for a field level combination are not representative and do not capture true costs for that field and level combination.

Observations that fell into any of the above categories were excluded in calculating the average and distribution of costs by field of education and level.

Box 2.2: Interpreting 'box and whisker' plots

Box and whisker plots are commonly used in statistical analysis to show both central points (i.e. medians or means) and the distribution, dispersion or variance of values. They usefully provide further detail on the range of values for groups of data and provide the reader with a sense of confidence or certainty regarding the representativeness of a central point.

For the purposes of this report:

- The central markers are measured at the mean of the distribution.
- The box includes half of all observations - namely those that lie within the 25th to 75th percentile of the distribution.
- The whiskers cover the remaining half of all observations, from the minimum point to the 25th percentile (the lower edge of the box), and from the 75th percentile (the upper edge of the box) to the maximum value.

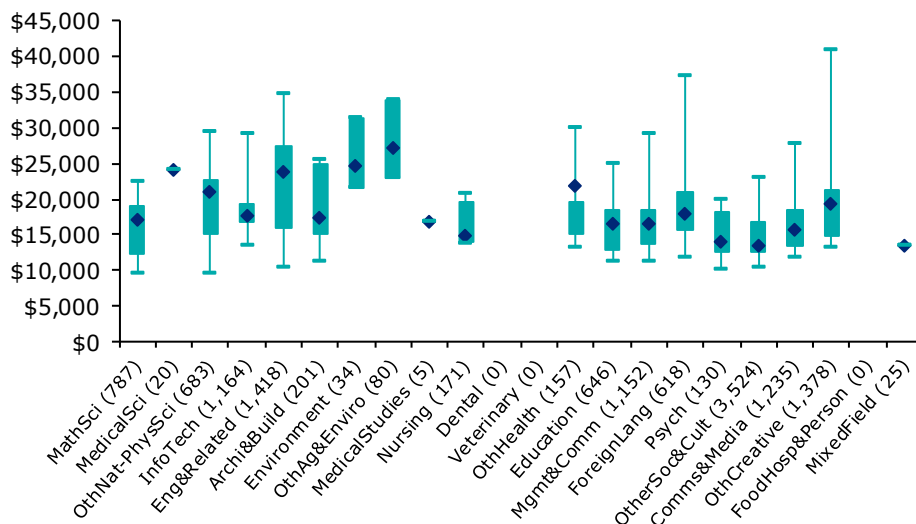
Field variation across sub-bachelor study

Different disciplines will likely have varying costs of delivery, as a reflection of differences in pedagogy, practical requirements and contextual settings.

Chart 2.7 presents the distribution of unit costs by field of education for sub-bachelor programs. Compared to estimates for bachelor and postgraduate, these costs have a relatively wide distribution of values. This is likely driven in large part by the small sample sizes in many fields of education at this level, with many universities noting that it was often difficult to disentangle costs for sub-bachelor students within an FOE from costs for bachelor level students.

Notably, there are a number of very high cost observations (over \$35,000), including Other Creative Arts and Foreign Languages. Nonetheless average costs ranged between \$13,000 and \$25,000 per EFTSL for most fields except Other Agricultural, Environmental and Related Studies, which had relatively few total EFTSL (80 EFTSL).

Chart 2.7: Average unit costs by field for sub-bachelor



Note: 203 cost observations across 29 universities. Outliers excluded. Marker at mean, box width between 25th and 75th percentile, and tails at minimum and maximum.

Field variation across bachelor study

Chart 2.8 shows the average unit costs by field for bachelor studies. Unsurprisingly, the health science fields (Veterinary Studies, Dental Studies, and Medical Studies) comprise three of the four most costly fields, on average. Qualifications in these fields are known to involve intensive teaching delivery, higher capital and material costs, and placement costs.

Other Agriculture and Environmental Studies was the third highest unit cost field, which is likely a reflection of higher capital costs, as well as potentially greater delivery in regional areas, with smaller scale and more student support requirements.

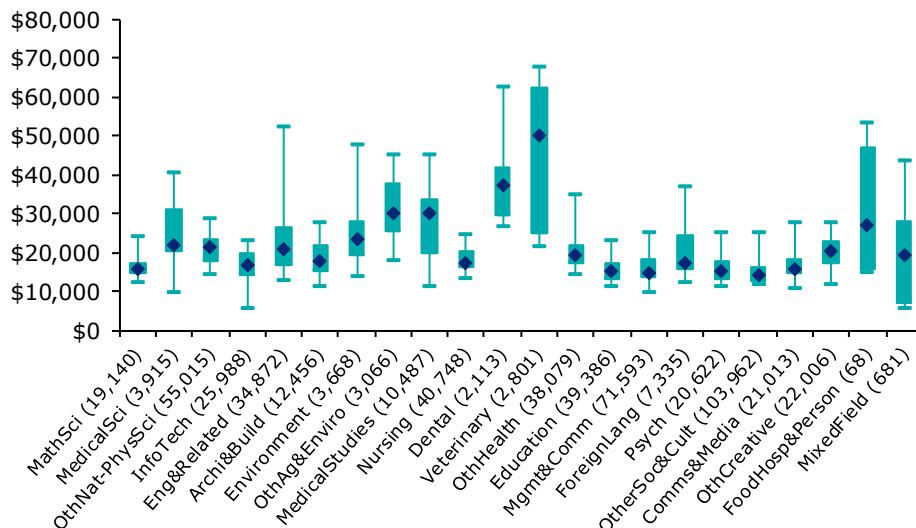
Overall, Chart 2.8 suggests three broad groupings of costs:

- Lower cost fields (10 fields) from \$14,000 to \$18,000, which appear to be more traditional 'classroom-based' fields;
- Mid-range cost fields (8 fields) from \$19,000 to \$27,000, which appear to include fields of education that may require greater material, practicum or applied components; and
- Higher cost fields (4 fields) from \$29,000 to \$51,000, as previously discussed.

Chart 2.8 presents the full distribution of unit costs by field of education for bachelor degrees. Notwithstanding differences in scale, the distribution of the 'whiskers' are noticeably narrower than for sub-bachelor programs, which suggest greater similarity in the costs of delivery across institutions.

A number of fields such as Psychology, Nursing, and Communication and Media, among others, have very narrow estimates, which may also reflect a more standard approach to the delivery of teaching for qualifications in these fields. Higher cost fields typically also have greater dispersion in costs, for example Dental Studies and Veterinary Studies.

Chart 2.8: Distribution of unit costs by field for bachelor



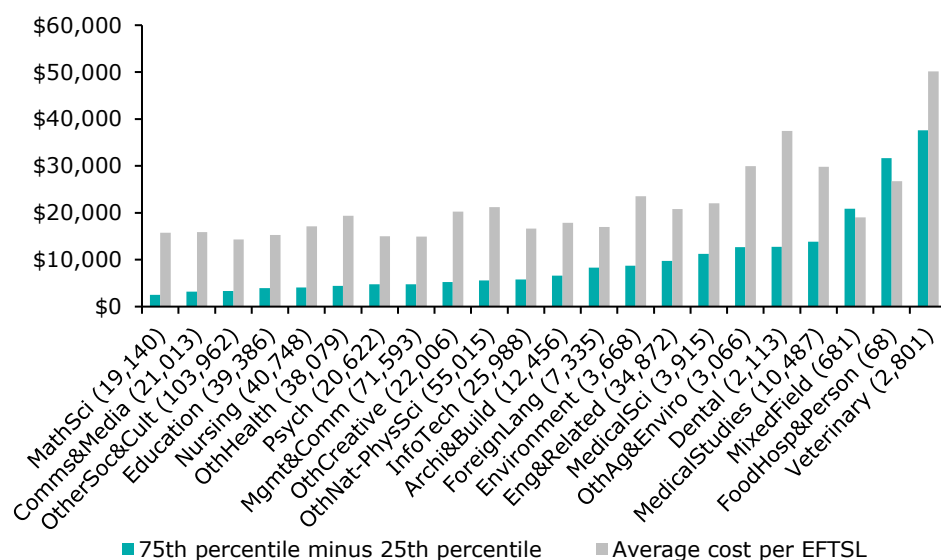
Note: 561 cost observations across 32 universities. Outliers excluded. Marker at mean, box width between 25th and 75th percentile, and tails at minimum and maximum.

Within each field of education, there are varying levels of deviation or spread of costs across institutions. Chart 2.9 shows the difference in average unit costs between the 25th and 75th percentiles (a standard measure of deviation or dispersion). On average, this range is around \$8,500, excluding Mixed Field Programmes and Food and Hospitality, which have very low EFTSL.

Notably, this variation is greatest among higher cost fields: Veterinary Studies has a variation of around \$37,600, compared to around \$2,500 for Mathematical Sciences. Large variations in cost

may reflect a variety of drivers, including variations in ability to scale, standardisation of delivery, quality, product and investment lifecycles and the efficiency with which universities deliver teaching and scholarship, among others.

Chart 2.9: Average unit cost and dispersion by field for bachelor



Note: 561 cost observations across 32 universities.

Field variation across postgraduate study

Chart 2.10 presents the distribution of unit costs by field of education for postgraduate coursework degrees (excluding higher degree research students). As for bachelor degrees, the distribution of costs are relatively narrow compared to sub-bachelor and higher cost disciplines tend to have wider distributions compared to lower cost fields.

However, the full range of estimated costs are significantly wider than the estimates for bachelor degrees. In particular, there appear to be a number of university observations with relatively high average costs (compared to their peer institutions), and in many instances the maximum value (the top whisker) is substantially larger than the 75th percentile (the upper box).

For example, for Other Natural and Physical Science, approximately three fifths of universities have costs between \$24,000 and \$35,000, and almost four fifths have costs between \$15,000 and \$35,000 (a range of \$20,000), while the highest cost university has a unit cost of \$95,100, which is more than three times higher than average costs.

Consultations with universities and their accompanying statements provide some rationale for higher unit costs, and include:

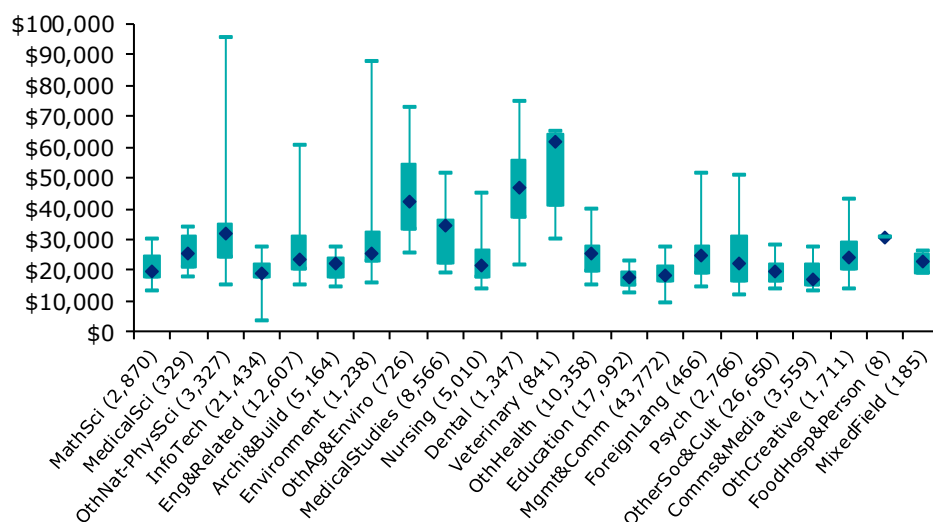
- The introduction of a new school or course program to the university, where the costs of delivery are expected to moderate in future years due to reduced upfront costs and increasing scale
- Higher costs associated with advanced and modern facilities and equipment
- Low enrolments and/or class sizes.

Similarly, the rationale for lower than average unit costs include:

- Larger share of delivery online, reducing the amount of staff hours
- Courses with relatively inexpensive teaching formats
- Large enrolments and/or class sizes.

These reasons for differences in costs were notably not confined to postgraduate level study and were also raised in the context of bachelor and sub-bachelor level programs.

Chart 2.10: Average unit costs by field for postgraduate



Note: 461 cost observations across 32 universities. Outliers excluded. Marker at mean, box width between 25th and 75th percentile, and tails at minimum and maximum.

Variation between levels

Consultations with universities suggested some systematic variation in costs by levels of education. The cost of postgraduate studies was on average 22% (or \$3,900) higher compared to bachelor studies across fields. This may reflect more specialised and intensive qualifications, smaller class sizes, more senior teaching staff, among other reasons.

Similarly, there is a lower cost for sub-bachelor studies of -2% (or -\$400) on average compared to bachelor studies across fields. Some of this difference may be driven by differences in enrolments by FOE between bachelor and sub-bachelor level study.

Notably, 13 of 32 universities indicated they were unable to systematically attribute costs between levels of education for a given faculty or school. In other words, these universities had generally equivalent costs for each of the three levels in a given faculty or school unless specific expenditure items were clearly attributable to study at a given level and incorporated in the results. In many of these cases, universities simply used EFTSL to separate costs within faculties or schools and across levels, such that costs per EFTSL were equivalent for all levels of study. Thus, any difference within a field of education was driven solely by the different mix of faculties or schools within an FOE.

These limitations were raised in consultations and accompanying statements by universities and should be considered when comparing unit cost calculations between levels for a given field. Where a university has assumed a constant unit cost, this will lead to convergence in costs between levels, but in other instances, where a university has used a cost allocation methodology that captures variation in costs between levels, variation may be higher.

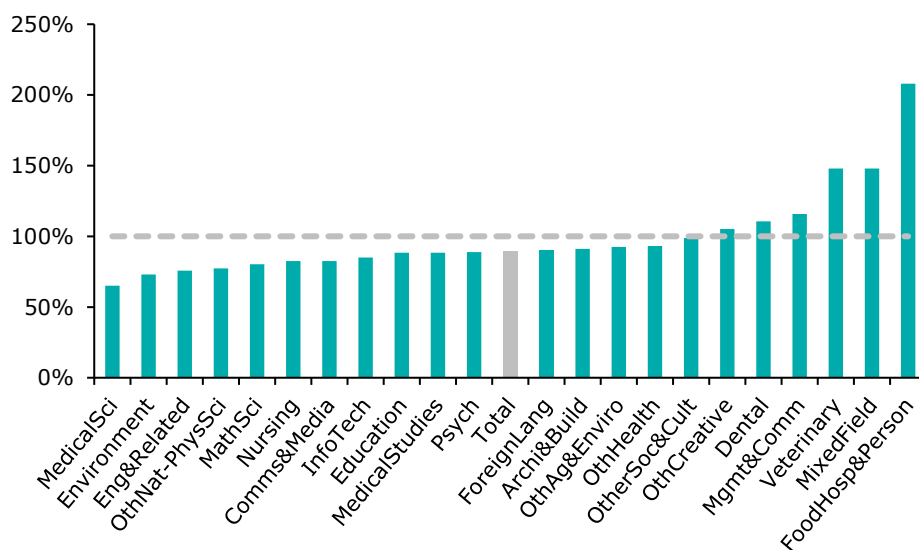
2.3 Comparing costs to base funding levels

As a broad measure of funding adequacy at the field level, previous studies have examined the relativities between average unit costs and average base funding according to CGS classifications. Importantly, caution should be taken in drawing inferences regarding the sufficiency of CGS funding from these results. While not specifically stated in the *Higher Education Support Act 2003*, there is a general view that CGS funding is intended to cover some level of base research activity

(which was excluded from the definition of teaching and scholarship costs used in this study), and the cost of such research may vary as a proportion of teaching costs.

On average, the cost of delivering teaching and scholarship for bachelor studies was 89% of the average base funding across all 32 institutions (Chart 2.11). A number of fields had an average cost greater than average funding. These included Food, Hospitality and Personal Services (208%), Veterinary Studies (148%), Mixed Field Programmes (148%), Management and Commerce (116%), Dental Studies (111%) and Creative Arts – Other (105%).

Chart 2.11: Average unit costs as a proportion of base funding for bachelor (full 2018 sample)



Fields such as Food, Hospitality and Personal Services, Mixed Field Programmes, Veterinary Studies and Dental Studies were delivered at a relatively small scale and by only a few universities. Among larger fields, Management and Commerce and Creative Arts – Other receive a relatively low amount of base funding per EFTSL.

Importantly, the ratio of teaching costs relative to CSP funding has been calculated based on the maximum CSP funding rates that can be received by a university. In this respect, these figures do not account for the potential impact of measures announced as part of the 2017-18 Mid-Year Economic and Fiscal Outlook (MYEFO). These measures capped total CGS funding for bachelor degrees courses in 2018 and 2019 at 2017 levels. Universities that had a similar or higher level of enrolments in 2018 relative to 2017 would thus in aggregate receive a CGS contribution per student that was below the maximum levels.¹⁵

2017 common sample (25 universities)

Among universities that provided data for both 2017 and 2018 (i.e. comparing a common sample), the average proportion of bachelor teaching costs relative to base funding was 90% in 2018, compared to 89% in 2017 (Chart 2.12).

Among the 22 fields, three experienced decreasing cost-to-funding ratios from 2017 to 2018, twelve increased and seven were relatively stable (within one percentage point higher or lower). Five fields experienced movements greater than 5 percentage points.¹⁶

- Mixed Field Programmes increased from 75% to 130%;
- Food, Hospitality and Personal Services increased from 185% to 208%;
- Veterinary Studies increased from 140% to 149%;

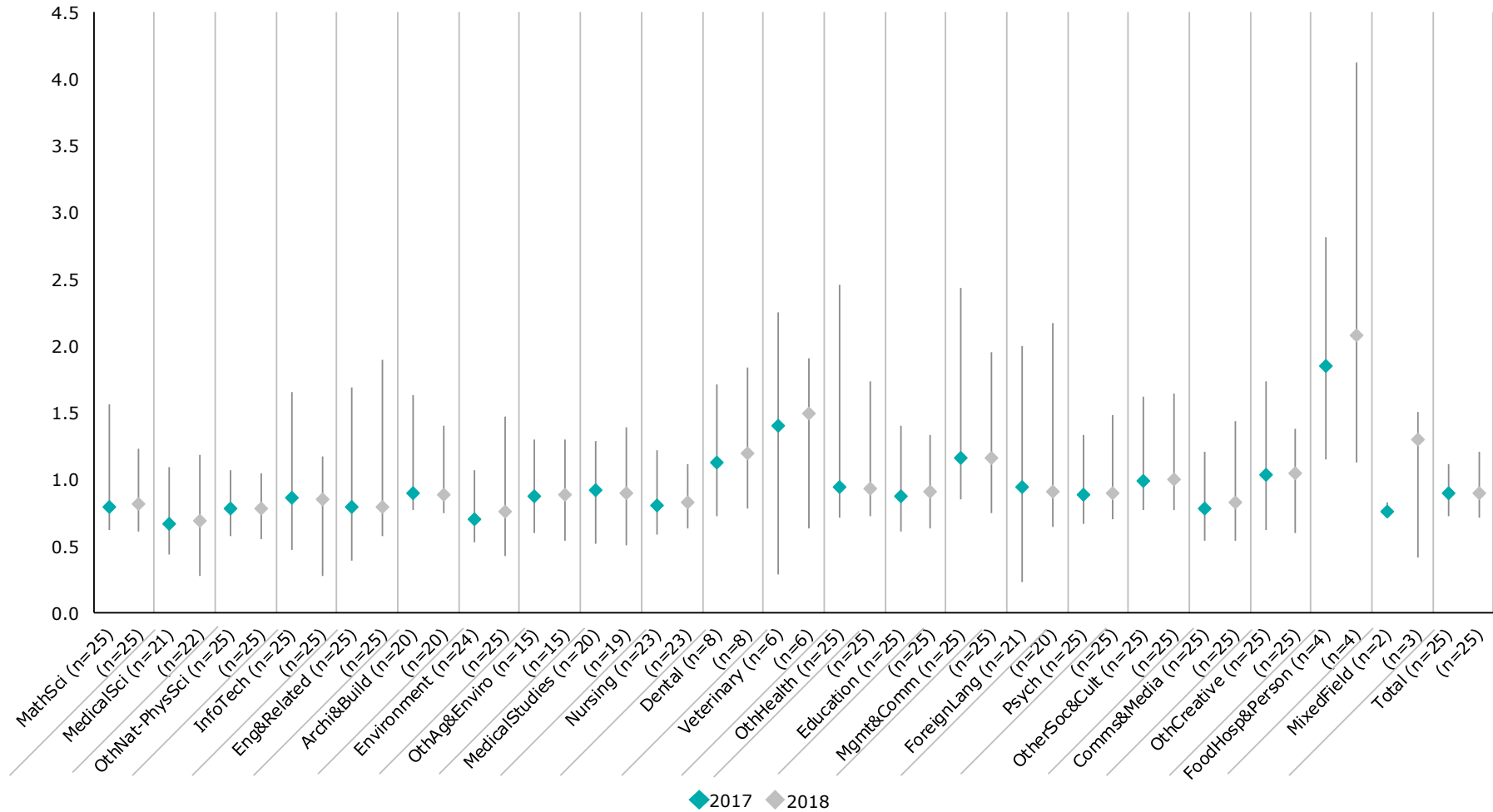
¹⁵ As CGS rates grew between 2017 and 2018 as a result of indexation, universities with constant enrolments between 2017 and 2018 would be funded at 2017 CGS per student rates.

¹⁶ Noting that these figures vary to the full sample discussed earlier.

- Dental Studies increased from 112% to 120%; and
- Environmental Studies increased from 70% to 76%.

It is worth noting that these fields tend to have lower EFTSL across universities and, as such, their costs per EFTSL can be subject to greater year-on-year fluctuations.

Chart 2.12: Distribution of the average unit costs to base funding ratio, 2017 and 2018, (2017 common sample (25 universities))



Note: Marker at average value, lines represent range from minimum to maximum. Notably, these results only include universities that provided data for both 2017 and 2018.

2015 common sample (17 universities)

Among universities that provided data for 2015, 2017 and 2018 (i.e. comparing a common sample), the average proportion of bachelor teaching costs relative to base funding was 85% in 2015, 87% in 2017 and 89% in 2018.

For the common sample, among the 19 fields that are directly comparable, six experienced decreasing cost-to-funding ratios from 2015 to 2018, ten increased and three were relatively stable (within one percentile point). Five fields experienced movements greater than 10 percentage points.¹⁷

- Dental Studies decreased from 143% to 121%;
- Management and Commerce increased from 104% to 116%;
- Information Technology decreased from 95% to 83%;
- Clinical Psychology increased from 79% to 90%; and
- Agriculture, Environmental and Related Studies – Other decreased from 97% to 87%.

A comparison of average unit costs to base funding ratio for all 19 fields in 2015, 2017 and 2018 is included in Appendix C.

2.4 Comparing changes in cost over time

2017 common sample (25 universities)

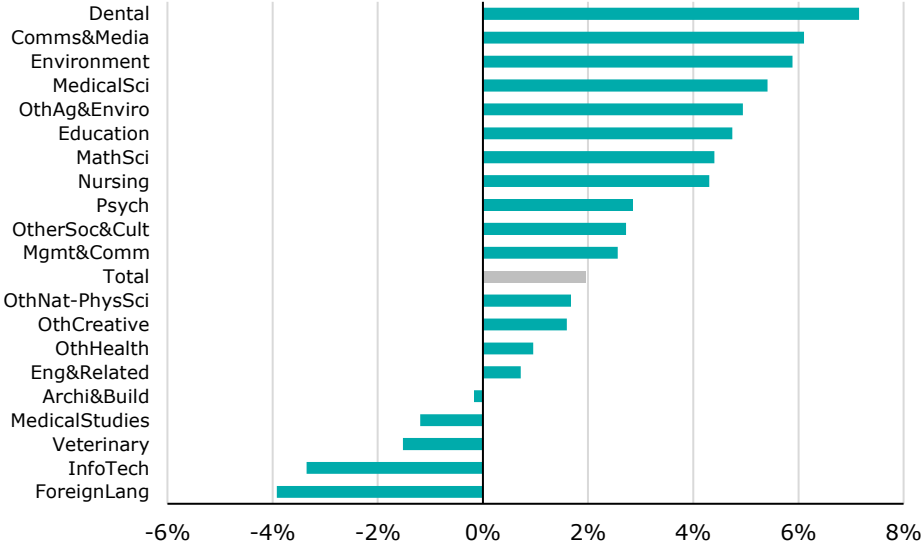
The average cost across all fields and levels of education in 2018 was \$18,700, which is 1.9% or around \$400 higher than the average cost in 2017 (among the 25 universities that provided data for both 2017 and 2018).

In the case of bachelor degree students, the average cost per EFTSL rose from \$17,300 in 2017 to \$17,700 in 2018, a 2.5% increase for the common sample. Of the 22 fields, fifteen experienced cost growth of less than 5%. Notably the largest unit cost changes in percentage terms were mostly in fields that were delivered at a relatively small scale and by only a few universities (including Mixed Field Programmes; Food, Hospitality and Personal Services; and Dental Studies;). It is also the case that in the fields of Environmental Studies; Dental Studies; and Education cost increases were largely driven by a handful of universities with a large share of total student load, while in the case of Communication and Media Studies a majority of universities experienced cost growth of more than 5%.

Chart 2.14, Chart 2.15 and Chart 2.16 describe the changes in averages and distribution of average unit costs across each field and level of education, among universities that provided data for both 2017 and 2018 (i.e. common to both studies). In general, the mean and ranges of dispersion at a FOE level are relatively similar across years. The decline in costs for postgraduate veterinary studies in 2018 was driven by one higher cost university from 2017 experiencing a decline in enrolments in 2018 and being excluded from the sample as an outlier in the 2018 study due to having fewer than 10 enrolments.

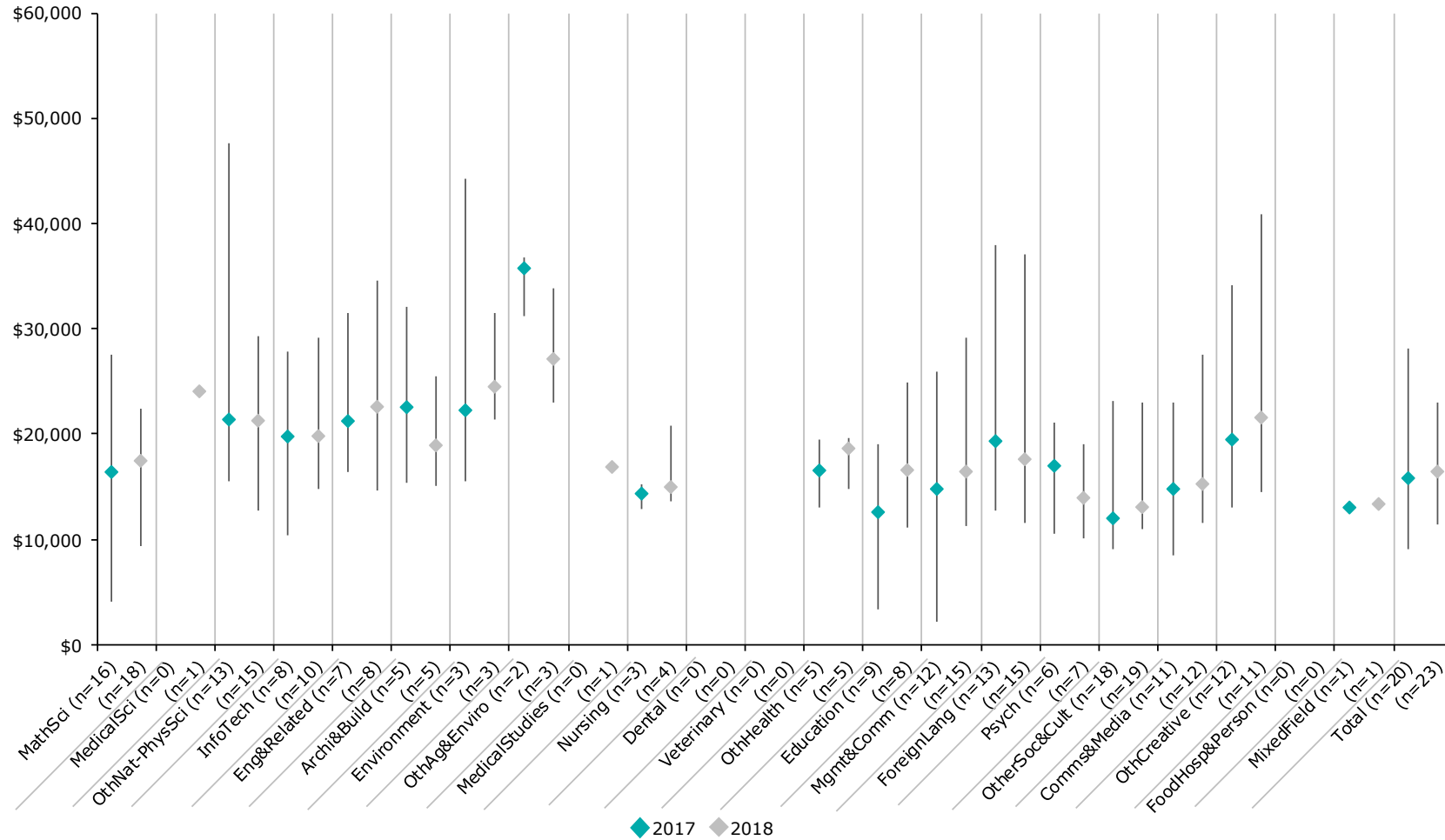
¹⁷ Noting that these figures vary to the full sample discussed earlier.

Chart 2.13: Comparing average costs between 2017 and 2018 for all levels of study (2017 common sample (25 universities))



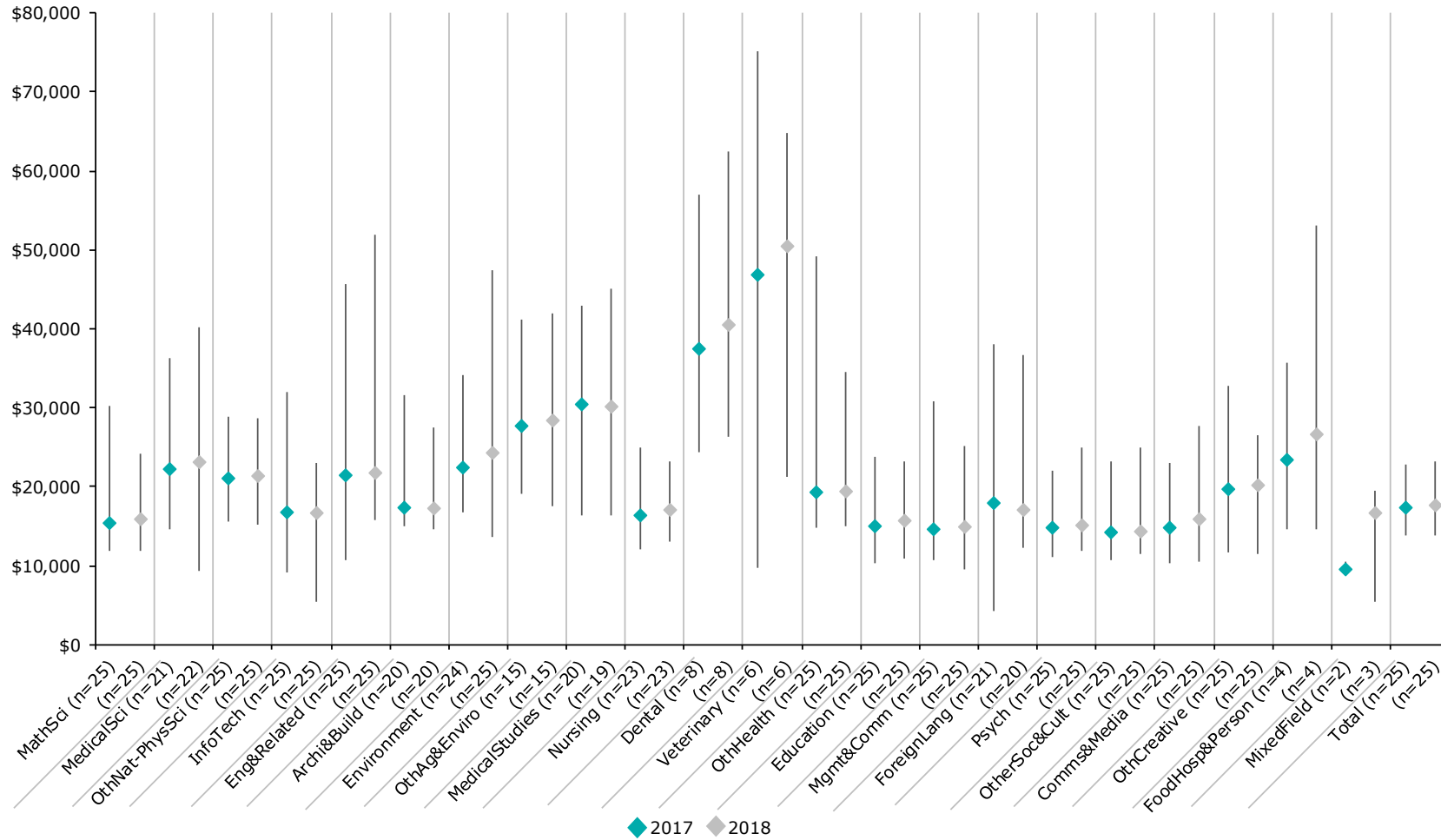
Note: chart excludes growth in costs for Food, Hospitality and Personal Services (23%) and Mixed Field Programmes (-34%).

Chart 2.14: Comparing costs between 2017 and 2018 for sub-bachelor (2017 common sample (25 universities))



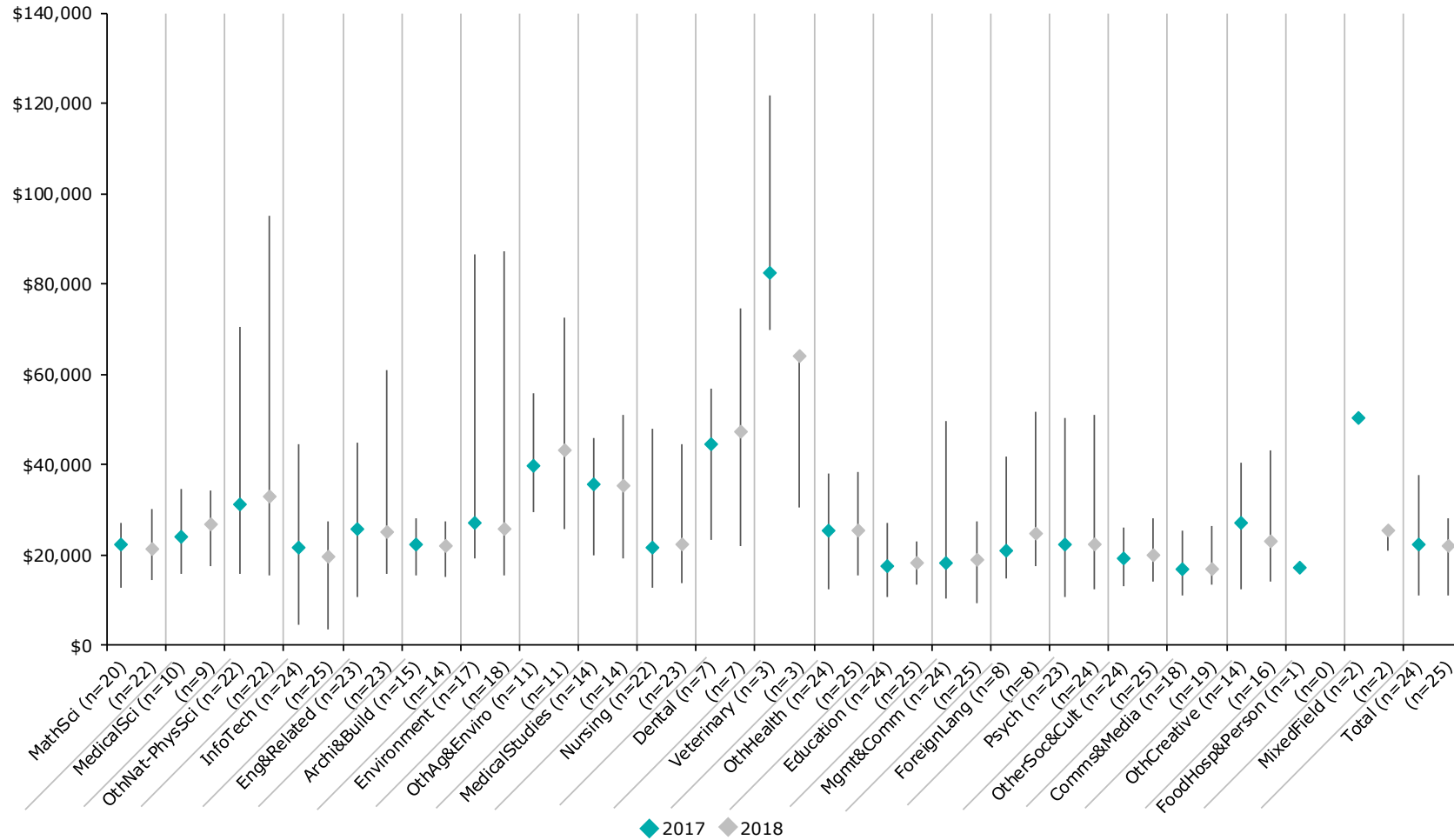
Note: For comparability, only the 25 universities that provided data for 2017 and 2018 are included. Markers are at mean.

Chart 2.15: Comparing costs between 2017 and 2018 for bachelor (2017 common sample (25 universities))



Note: For comparability, only the 25 universities that provided data for 2017 and 2018 are included. Markers are at mean.

Chart 2.16: Comparing costs between 2017 and 2018 for postgraduate (2017 common sample (25 universities))



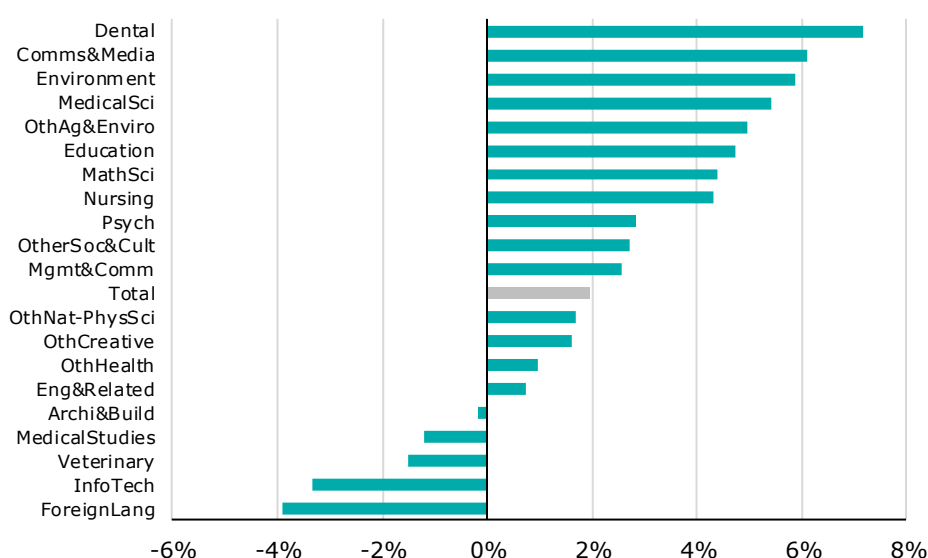
Note: For comparability, only the 25 universities that provided data for 2017 and 2018 are included. Markers are at mean. For veterinary science, the university with highest cost per EFTSL in 2017 saw a fall in EFTSL in 2018, which resulted in it being classified as an outlier in 2018 and excluded which reduced average costs per EFTSL in 2018.

2015 common sample (17 universities)

For the common sample of 17 universities who have participated since 2015, the average cost across all fields and levels of education in 2018 was \$18,600, which is around \$1,500 higher than the average cost of \$17,000 in 2015 (among the 17 universities that provided data for 2015, 2017 and 2018). This represents an annual growth rate of 2.9% from 2015 to 2018.

In the case of bachelor degree students, the average cost per EFTSL rose from \$16,200 in 2015 to \$17,500 in 2018, an annual growth rate of 2.6% for the common sample. Of the 19 fields that are directly comparable, twelve experienced cost growth of less than 5%, four experienced declining costs and three experienced cost growth between 5-6%.

Chart 2.17: Comparing average costs between 2015 and 2018 for all levels of study (2015 common sample (17 universities)), Compound Annual Growth Rate (CAGR)



Note: Nursing is included in Other – Health.

A comparison of the distribution of unit costs in 2015, 2017 and 2018 for sub-bachelor, bachelor and postgraduate studies (across all 19 comparable fields) is included in Appendix C.

Summary tables

The figures in Table 2.1 show that the average cost per EFTSL for 2010, 2015, 2017 and 2018. The cost data is shown for the full sample in each year as well as for the common sample of universities (where available).

The average cost per EFTSL for bachelor study rose from \$17,300 in 2017 to \$17,700 in 2018 for the 25 universities that provided data in both years, an increase of 2.5% as shown in Table 2.2. Average unit costs for the full sample of 32 universities was slightly lower at \$17,600 but broadly similar (given that the full sample includes the universities in the common sample).

The average cost per EFTSL for postgraduate study decreased from \$22,200 in 2017 to \$22,000 in 2018 for the 25 universities that provided data in both years, a decrease of 0.8%. The average cost of postgraduate study remains around one fifth higher than the average cost of bachelor study. Only ten of the 25 universities included in the common sample reported lower postgraduate costs per EFTSL in 2018 compared to 2017, but this group included a number of universities with a large share of postgraduate student load.

Table 2.1: Average unit cost per EFTSL

	Year	2010 sample (8 universities)	2015 sample (17 universities)	2017 sample (25 universities)	2018 sample (32 universities)
Bachelor	2010	\$15,100	-	-	-
	2015	-	\$16,200	-	-
	2017	-	\$16,900	\$17,300	-
	2018	-	\$17,500	\$17,700	\$17,600
Postgraduate	2010	\$17,400	-	-	-
	2015	-	\$20,500	-	-
	2017	-	\$21,800	\$22,200	-
	2018	-	\$21,900	\$22,000	\$21,500
Total*	2010	\$15,500	-	-	-
	2015	-	\$17,000	-	-
	2017	-	\$18,100	\$18,400	-
	2018	-	\$18,600	\$18,700	\$18,500

Table 2.2: Growth over time in average unit cost per EFTSL

		Bachelor		Postgraduate		Total	
		% growth	CAGR	% growth	CAGR	% growth	CAGR
2015 - 2017	Common sample (17 universities)	4.6%	2.2%	6.4%	3.1%	5.9%*	2.9%*
2015 - 2018	Common sample (17 universities)	8.0%	2.6%	6.5%	2.1%	8.9%*	2.9%*
2017 - 2018	Common sample (25 universities)	2.5%	-	-0.8%	-	1.9%*	-

Note: CAGR indicates Compound Annual Growth Rate. * Includes costs related to sub-bachelor study. Total growth exceeds growth in bachelor and postgraduate costs in some cases due to both the inclusion of costs for sub-bachelor level study and also compositional shifts which have resulted in a greater share of total EFTSL comprising postgraduate coursework students (who have a higher average cost per EFTSL).

Table 2.3 benchmarks the changes in teaching costs per EFTSL since 2015 to changes in expenditure by the sector since 2015 for the common sample of 17 universities, all universities sampled in 2018, and all public universities based on university financial data reported to the Department of Education.

Over this period, EFTSL rose by an annual rate of 2.7% in the common sample and 2.8% across the sector (largely driven by growth in non-Commonwealth supported students) and continuing expenditure per EFTSL increased by an annual rate of 3.9% for the common sample and 3.5% for the whole sector. Given that overall teaching costs per EFTSL for all levels in the common sample grew by an annual rate of 2.9%, this suggests that changes in teaching and scholarship costs have grown broadly in line, albeit slightly less than changes in overall expenditure.

Growth in teaching costs for the common sample has exceeded growth in base funding levels per EFTSL over the last three years, with base funding per EFTSL growing by an annual rate of 1.7%. This difference is the main driver of the increase from 2015 to 2018 in the average proportion of bachelor teaching costs relative to base funding (see Section 2.3).

Importantly, while the growth in costs per EFTSL for the common sample provides a valid comparison over time for a common sample of universities, it is not strictly a measure of cost per EFTSL for the sector over time. It is possible that growth in cost per EFTSL may differ for universities not in the common sample. The figures in Table 2.3 suggest that changes in continuing expenditure per EFTSL have not differed markedly for the sector as a whole relative to the 2015 common sample, while Table 2.4 demonstrates the same finding for the 2017 common sample. This indicates that the growth in costs for the 2015 and 2017 common samples is likely to be a reasonable proxy for changes in costs over time for the sector as a whole.

Table 2.3: Change in costs between 2015 and 2018

CAGR 2015 to 2018	2015 common sample (17 universities)	Full sample in each year (17 universities in 2015 32 in 2018)	2018 sample (32 universities)	All universities (37 universities)
Cost per EFTSL - all levels	2.9%	2.7%	-	-
Cost per EFTSL - bachelor	2.6%	2.7%	-	-
Cost per EFTSL - postgraduate	2.1%	1.5%	-	-
Total EFTSL	2.7%	-	2.6%	2.8%
Continuing expenditure per EFTSL	3.9%	3.0%	3.2%	3.5%
University labour expenditure per EFTSL	2.9%	2.6%	2.4%	2.7%
Base funding (CGS+Student Contribution Amount (SCA) per EFTSL)	1.7%	1.5%	-	-

Source: Deloitte Access Economics and Department of Education.

Table 2.4: Change in costs between 2017 and 2018

% growth 2017 to 2018	2017 common sample (25 universities)	Full sample in each year (25 universities in 2017 32 in 2018)	2018 sample (32 universities)	All universities (37 universities)
Cost per EFTSL - all levels	1.9%	0.5%	-	-
Cost per EFTSL - bachelor	2.5%	1.4%	-	-
Cost per EFTSL - postgraduate	-0.8%	-3.4%	-	-
Total EFTSL	3.4%	-	3.8%	3.7%
Continuing expenditure per EFTSL	3.3%	2.4%	3.3%	3.8%
University labour expenditure per EFTSL	1.5%	0.5%	1.2%	1.9%
Base funding (CGS+SCA per EFTSL)	1.7%	1.2%	-	-

Source: Deloitte Access Economics and Department of Education.

Table 2.5 and Table 2.6 benchmark the growth in reported teaching and scholarship costs against all university costs (including research). Growth in total teaching and scholarship costs is slightly below growth in overall university costs (teaching, scholarship and research) between 2015 to 2018 and 2017 to 2018 (for the respective common samples).

While the 17 universities that provided costs in both 2015 and 2018 reported proportionally high growth in staff-related teaching and scholarship costs compared to non-staff costs, an opposite trend is observed for the 25 universities that provided costs in both 2017 and 2018. These figures suggest that growth in staff costs per EFTSL has slowed since over the last twelve months which is consistent with the modest outlook for wage growth in the economy as a whole.

Table 2.5: Change in costs per EFTSL between 2015 and 2018 (CAGR), 2015 common sample (17 universities), by line item

	Teaching and scholarship costs	All costs (teaching, scholarship, research)
Staff costs	3.8%	2.9%
<i>Academic staff</i>	4.3%	
<i>Casual academic staff</i>	5.5%	
<i>Non-academic staff</i>	3.1%	
Non-staff costs	1.7%	5.2%
<i>Depreciation, amortisation, repairs, maintenance, borrowing, bad debts</i>	1.6%	
<i>All other</i>	1.7%	
Total costs	2.9%	3.9%

Source: Deloitte Access Economics and Department of Education.

Table 2.6: Change in costs per EFTSL between 2017 and 2018, 2017 common sample (25 universities), by line item

	Teaching and scholarship costs	All costs (teaching, scholarship, research)
Staff costs	0.3%	1.5%
<i>Academic staff</i>	-2.9%	
<i>Casual academic staff</i>	10.0%	
<i>Non-academic staff</i>	1.1%	
Non-staff costs	4.7%	5.8%
<i>Depreciation, amortisation, repairs, maintenance, borrowing, bad debts</i>	1.6%	
<i>All other</i>	5.8%	
Total costs	2.0%	3.3%

Source: Deloitte Access Economics and Department of Education.

2.5 Examining costs 'below the line'

As part of the consultation process undertaken at the outset of the 2018 study, two areas were identified where the true cost of teaching and scholarship may not be captured by standard financial or statutory reporting, and therefore were not captured in the previous study's costing template structure.

To recognise these potentially material costs, two additional line items were included in the updated costing template, namely 'in-kind' costs, and 'additional partnership' costs. These items were included 'below the line', to reflect that they would not be expected to reconcile to statutory reporting, and would likely need to be estimated rather than calculated from an institution's financial reporting.

As part of the consultations informing the 2019 study, an additional below the line item allowing universities to include an optional depreciation adjustment was included. This adjustment was

intended to account for the potential that capital costs may be underestimated as a result of the way depreciation is calculated at certain universities. Further details on the purpose of this adjustment is set out in section 3.3.

Notably, the baseline analysis in this report does not include any of these below the line costs items to ensure consistency with the previous exercises. They are not included in the comparison to base funding levels in Section 2.3.

Overall, below the line items had a relatively small impact on total teaching and scholarship costs. On average costs were 1.69% higher as a result of including these items (Table 2.7). It should be noted that some universities indicated difficulty in accurately identifying and measuring in-kind costs to a level of confidence where they could be reliably included in the template. For those universities who did report below the line items, their costs were 4.65% higher.

Table 2.7: Total average impact of ‘below the line’ costs on teaching and scholarship costs

	<i>Impact on cost per EFTSL</i>	<i>% impact on total teaching and scholarship costs</i>	<i>Impact on cost per EFTSL</i>	<i>% impact on total teaching and scholarship costs</i>	<i>Number of universities reporting below the line costs</i>
	<i>All universities</i>		<i>Universities who reported below the line costs</i>		
In-kind costs	+\$75	+0.41%	\$1,312	+6.69%	3
Third-party and partnership costs	+\$99	+0.54%	\$559	+3.59%	5
Optional depreciation adjustment	+\$138	+0.75%	\$424	+2.18%	9
Total below the line costs	+\$313	+1.69%	\$888	+4.65%	13

Source: Deloitte Access Economics.

Note: There are unique but overlapping groups of universities who report below the line costs for each item. The total below the line costs for universities who report below the line costs for any of the individual items is therefore not the sum of the items above as some universities may only report one below the line item.

In-kind costs

In-kind costs reflect non-monetary exchange of goods and services in return for teaching and scholarship services, which if not for the existing ‘quid pro quo’ nature, a university would face a financial cost. These arrangements may, for example, involve the shared use of another institution’s staff or resources for the purposes of teaching and scholarship, in exchange for the use of university buildings or facilities.

Three universities reported in-kind costs across 11 fields of education (Table 2.7), resulting in an average increase of \$75 (or 0.41%) in cost per EFTSL across the sector. For the three reporting universities, the per EFTSL impact was much larger at \$1,312 (or 6.69%). Of those that did not report in-kind costs there were a range of reasons with most noting that they did not believe they had significant in-kind costs and a small number noting that they would be difficult to quantify.

For those universities who reported in-kind costs, the impact on cost per EFTSL is less than 3% across 9 of the 11 reported fields. The Medical Studies and, to a lesser extent, Dental studies fields are the clear exception, in which in-kind costs were equivalent to a \$14,133 (or 44.51%) and \$4,169 (or 11.46%) increase in cost per EFTSL respectively.

Table 2.8: Impact of in-kind costs on total teaching and scholarship costs

Field of education	Impact on total cost	Impact on cost per EFTSL	% impact on total teaching and scholarship costs per EFTSL	Impact on cost per EFTSL	% impact on total teaching and scholarship costs per EFTSL
	<i>All universities</i>			<i>Universities who reported in-kind costs</i>	
MathSci	\$141	\$0	0.00%	\$0	0.00%
MedicalSci	\$28,502	\$7	0.03%	\$93	0.46%
OthNat-PhysSci	\$248,274	\$4	0.02%	\$66	0.25%
InfoTech	-	-	-	-	-
Eng&Related	-	-	-	-	-
Archi&Build	-	-	-	-	-
Environment	-	-	-	-	-
OthAg&Enviro	-	-	-	-	-
MedicalStudies	\$45,351,904	\$2,379	7.46%	\$14,133	44.51%
Nursing	\$110,095	\$2	0.01%	\$110	0.51%
Dental	\$2,213,805	\$640	1.55%	\$4,169	11.46%
Veterinary	-	-	-	-	-
OthHealth	\$1,402,663	\$29	0.14%	\$318	1.54%
Education	\$496,391	\$9	0.05%	\$110	0.77%
Mgmt&Comm	\$1,723	\$0	0.00%	\$0	0.00%
ForeignLang	-	-	-	-	-
Psych	\$1,807	\$0	0.00%	\$3	0.01%
OtherSoc&Cult	\$4,729,597	\$35	0.23%	\$350	2.20%
Comms&Media	-	-	-	-	-
OthCreative	-	-	-	-	-
FoodHosp&Person	-	-	-	-	-
MixedField	-	-	-	-	-
Total	\$54,584,903	\$75	0.41%	\$1,312	6.69%

Source: Deloitte Access Economics.

Additional partnership costs

In some instances, universities may arrange for a third-party organisation to deliver teaching for EFTSL that is attributable to a university. Costs incurred directly as a result of third-party delivery arrangements (such as administrative costs) have previously, and continue to be, included appropriately 'above the line'. However, some universities identified particular arrangements, whereby the full cost of teaching related to EFTSL attributable to the home institution would not be captured in statutory reporting, or the existing template.

An example provided by some universities was in instances where the third-party collects some or all student fees. In these cases, costs incurred in teaching these students would not be fully reflected in continuing expenses for the home institution for the relevant EFTSL. Including these costs is important for ensuring comparability across institutions is not affected by specific revenue sharing arrangements with partner organisations. To address this issue, universities were asked to estimate teaching costs for their partners based on the revenue collected by those partners in cases where this revenue is not incorporated as an expense by the home university.

In line with this definition, reported additional partnership costs in 2017 resulted in an on average \$99 (or 0.54%) increase in cost per EFTSL. The largest impacts were on Information Technology (\$383 increase per EFTSL or 2.15%) and Management and Commerce (\$205 or 1.26%). Third-party and partnership costs were recorded by five universities below the line in 2019. The potential for third-party and partnership costs below the line was a key item in consultation discussions suggesting that there can be a reasonable level of confidence that universities with such below the line costs should be reporting these here.

Table 2.9: Impact of additional partnership costs on total teaching and scholarship costs

Field of education	Impact on total cost	Impact on cost per EFTSL	% impact on total teaching and scholarship costs per EFTSL	Impact on cost per EFTSL	% impact on total teaching and scholarship costs per EFTSL
	<i>All universities</i>			<i>Universities who reported in-kind costs</i>	
MathSci	\$726,083	\$32	0.20%	\$242	1.39%
MedicalSci	\$155,589	\$36	0.16%	\$277	1.01%
OthNat-PhysSci	\$1,293,954	\$22	0.10%	\$170	0.69%
InfoTech	\$18,598,634	\$383	2.16%	\$1,953	11.61%
Eng&Related	\$798,113	\$16	0.08%	\$86	0.32%
Archi&Build	\$1,107,500	\$62	0.33%	\$798	4.19%
Environment	\$128,128	\$26	0.11%	\$343	1.40%
OthAg&Enviro	\$3,250	\$1	0.00%	\$1,625	2.86%
MedicalStudies	\$4,857,484	\$255	0.80%	\$3,094	9.05%
Nursing	\$179,335	\$4	0.02%	\$39	0.20%
Dental	-	-	-	-	-
Veterinary	-	-	-	-	-
OthHealth	\$3,923,520	\$81	0.39%	\$470	2.00%
Education	\$6,272,924	\$108	0.67%	\$1,080	5.87%
Mgmt&Comm	\$23,919,351	\$205	1.26%	\$1,062	6.48%
ForeignLang	\$126,390	\$15	0.09%	\$1,215	7.36%
Psych	\$1,081,262	\$46	0.29%	\$345	2.23%
OtherSoc&Cult	\$6,996,545	\$52	0.34%	\$344	2.26%
Comms&Media	\$825,911	\$32	0.20%	\$555	2.79%
OthCreative	\$680,887	\$27	0.13%	\$148	0.71%
FoodHosp&Person	-	-	-	-	-
MixedField	-	-	-	-	-
Total	\$71,674,861	\$99	0.54%	\$559	3.59%

Source: Deloitte Access Economics.

Optional depreciation adjustment

In the 2019 exercise, universities were also permitted to include an optional depreciation adjustment to account for the use of fully depreciated assets or differences between book value and the fair value of their existing assets. An optional depreciation adjustment was included by nine universities. As shown in Table 2.9 below it added \$138 to average cost per EFTSL for the sector as a whole (both universities including and not including it) or 0.75% of the cost per EFTSL.

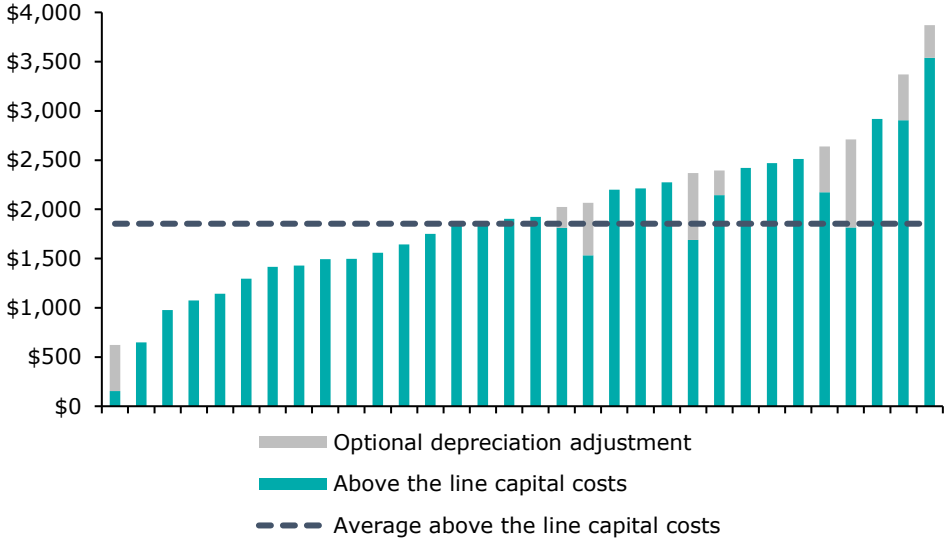
The impact was spread relatively evenly across FOE (except those with small EFTSL numbers such as Food, Hospitality and Personal Services) consistent with capital costs being important for all FOEs.

Table 2.10 Impact of the optional depreciation adjustment on total teaching and scholarship costs

Field of education	Impact on total cost	Impact on cost per EFTSL	% impact on total teaching and scholarship costs per EFTSL	Universities who reported in-kind costs	
				All universities	Universities who reported in-kind costs
MathSci	\$5,292,107	\$232	1.43%	\$707	4.27%
MedicalSci	\$1,405,795	\$329	1.48%	\$916	3.98%
OthNat-PhysSci	\$11,713,271	\$198	0.91%	\$590	2.52%
InfoTech	\$4,558,602	\$94	0.53%	\$336	1.83%
Eng&Related	\$9,935,142	\$203	0.94%	\$569	2.41%
Archi&Build	\$6,445,209	\$361	1.89%	\$765	3.80%
Environment	\$1,361,583	\$274	1.13%	\$815	3.14%
OthAg&Enviro	\$1,592,931	\$409	1.27%	\$3,063	9.56%
MedicalStudies	\$3,380,418	\$177	0.56%	\$458	1.44%
Nursing	\$4,067,450	\$89	0.50%	\$429	2.20%
Dental	\$1,572,420	\$454	1.10%	\$963	2.12%
Veterinary	\$494,182	\$135	0.25%	\$404	0.71%
OthHealth	\$8,136,930	\$167	0.81%	\$488	2.18%
Education	\$6,736,804	\$116	0.72%	\$489	2.86%
Mgmt&Comm	\$10,516,498	\$90	0.56%	\$249	1.48%
ForeignLang	\$1,748,941	\$207	1.19%	\$611	3.44%
Psych	\$3,332,498	\$142	0.89%	\$453	2.81%
OtherSoc&Cult	\$10,230,522	\$76	0.50%	\$241	1.61%
Comms&Media	\$2,983,343	\$116	0.72%	\$307	1.86%
OthCreative	\$4,355,788	\$173	0.85%	\$417	2.04%
FoodHosp&Person	\$185,741	\$2,381	8.86%	\$3,505	11.63%
MixedField	\$15,974	\$18	0.09%	\$238	1.09%
Total	\$100,062,149	\$138	0.75%	\$424	2.18%

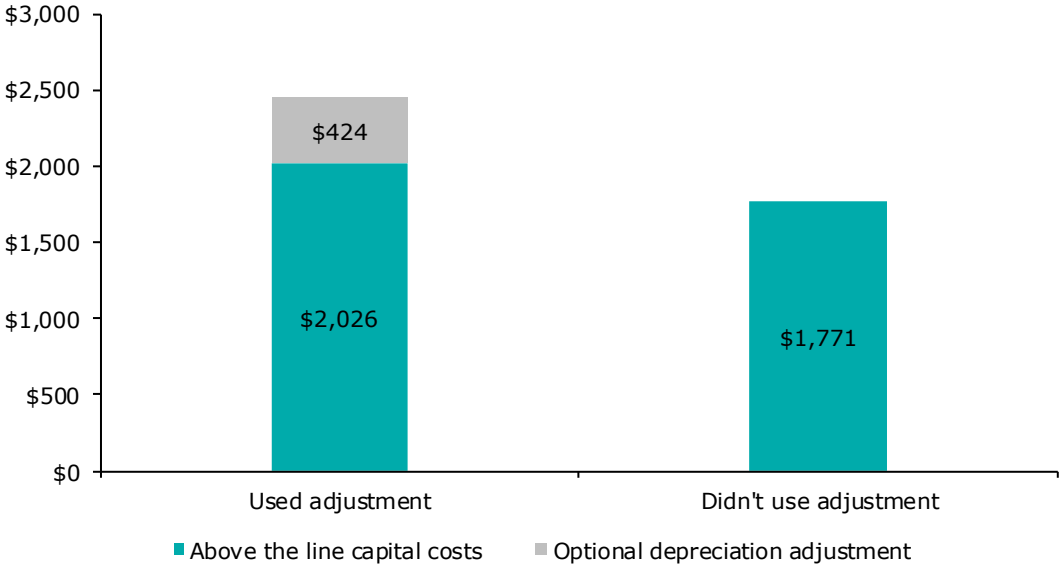
Four of the nine universities that reported an optional depreciation adjustment had 'above the line' capital costs per EFTSL that were higher than the average seen across all 32 institutions (see Chart 2.18). Notably, the institution with the lowest 'above the line' capital costs per EFTSL recorded an optional depreciation adjustment. For the nine universities that included an optional depreciation adjustment, unit costs increased by \$424 per EFTSL although on average institutions with optional depreciation costs did not necessarily have lower average above the line capital costs (see Chart 2.19).

Chart 2.18: Variation in capital costs per EFTSL reported 'above the line' and the optional depreciation adjustment, by university (all levels)



Note: 'Above the line' capital costs refers to depreciation, amortisation, repairs, maintenance, borrowing and bad debts.

Chart 2.19: Capital costs per EFTSL reported 'above the line' and the optional depreciation adjustment (all levels)



Note: 'Above the line' capital costs refers to depreciation, amortisation, repairs, maintenance, borrowing and bad debts.

2.6 Consideration of contextual factors

This section examines the extent to which variation in costs across universities is correlated with specific contextual factors. In particular, it explores the degree to which cost varies based on different EFTSL sizes, between metropolitan and regional universities and for research intensive universities.

It is important to note that although universities with certain characteristics (e.g. regional universities) may, on average, have different costs to the rest of the sector, this correlation could be driven by a range of factors other than purely input costs. For example, higher costs on average

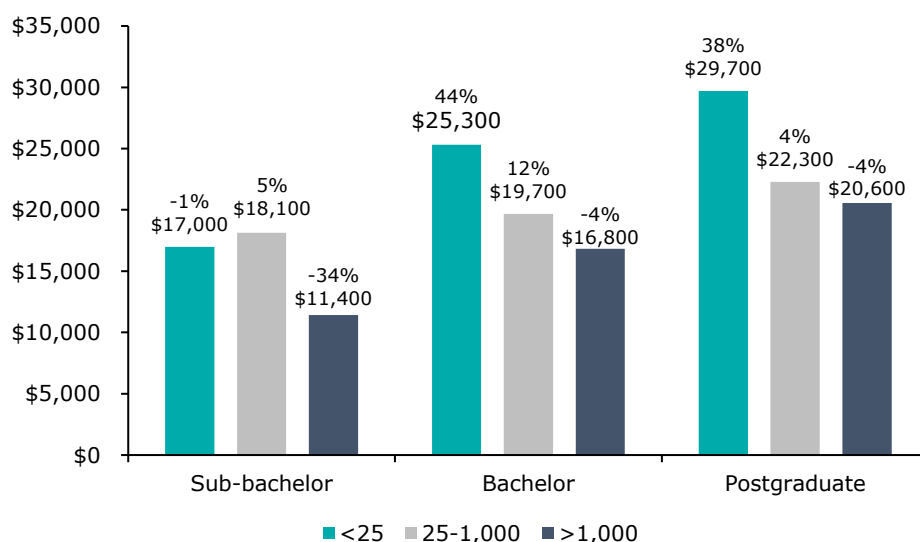
could be due to differences in staff student ratios, scale effects or the need to provide additional support for students.

Variation by scale of delivery

The 2016 *Cost of delivery of higher education* report included a detailed econometric analysis of the drivers of cost (see Box 2.3 below). A key finding from this analysis and report was the significance (statistically and materially) of scale as a determinant of unit costs. This point was reiterated throughout the consultation process and by universities in their accompanying statements.

Chart 2.20 provides further evidence for the existence of 'economies of scale' in provision of higher education, whereby an increasing quantum of teaching delivery in a given FOE is associated with declining unit costs. For example, at the bachelor level of study, average costs for all instances where a university had fewer than 25 EFTSL was \$25,300 compared to \$19,700 for instances of between 25 and 100 EFTSL and \$16,800 for all instances where a university had more than 1,000 students in a FOE.

Chart 2.20: Unit costs and deviation from average using different EFTSL thresholds, by level



Note: % indicates deviation from average cost per EFTSL for the given level. Outliers excluded.

Box 2.3: Drivers of cost from *Cost of delivery of higher education (2016)*

The 2016 study had a scope that included the identification of the drivers of higher costs. Regression analysis was used to identify these cost drivers by (1) statistical significance and (2) magnitude of correlation. This type of analysis allows for the correlation effects to be disentangled among multiple competing drivers of a single outcome (in this instance, cost per EFTSL).

The key identified drivers that had a significant effect on costs:

- **Staff-student ratios** (teaching FTE/student EFTSL) which was correlated with higher costs, reflecting labour as a key factor in the cost of teaching. Notably, this driver was consistently the largest determinant of cost.
- **Scale** (total student EFTSL) was correlated with lower costs, indicating some scale efficiencies, although the statistical significance weakened after controlling for additional drivers (particularly as some of this effect is likely to be captured through staff-student ratios).

- **Regionality** (proportion of regional EFTSL) correlated with higher costs, even after controlling for scale, suggesting that regional provision involves greater costs.¹⁸
- **Casualised workforce** (proportion of casual FTE) correlated with lower costs, which may reflect more adaptive workforces.

Other cost drivers were considered but were generally not found to be statistically significant drivers of cost after controlling for other factors :

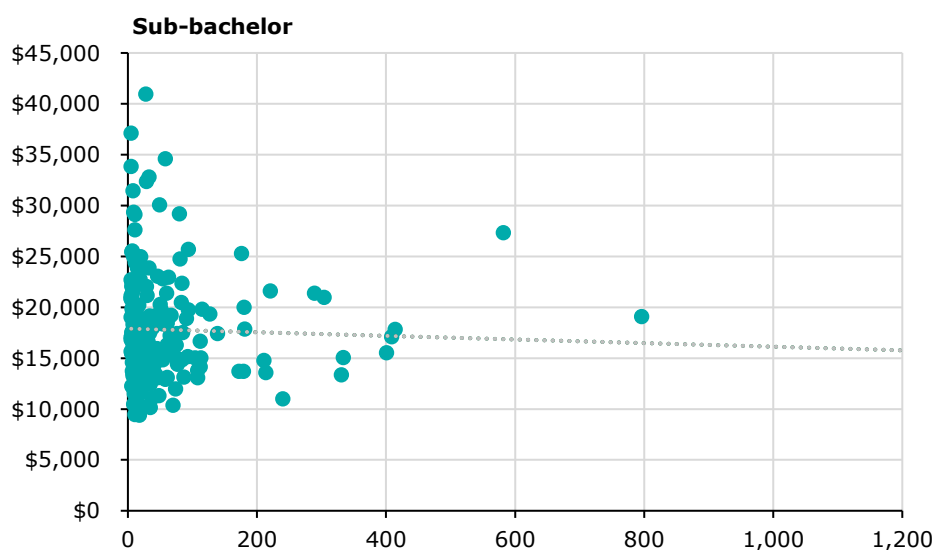
- **External delivery** (proportion of external mode EFTSL) was correlated with lower costs, which may reflect efficiencies in online and off-campus delivery but was not statistically significant.
- **International students** (proportion of EFTSL that comprised overseas students) was correlated with higher costs, however this effect was not statistically significant.
- **Research intensity** (level of HDR research) correlated with higher costs, however this effect disappeared after controlling for fields of education. This may suggest that research intensities are partly reflecting systematic differences in costs across fields.

Notably, the key cost drivers remained generally statistically significant even after controlling for fields of education, which suggests these are common cost drivers, rather than reflections of idiosyncrasies among fields.

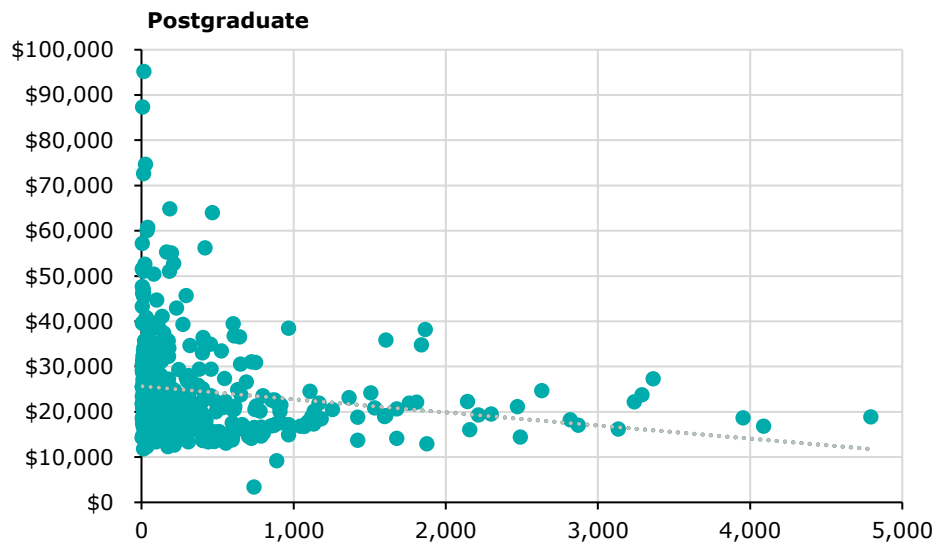
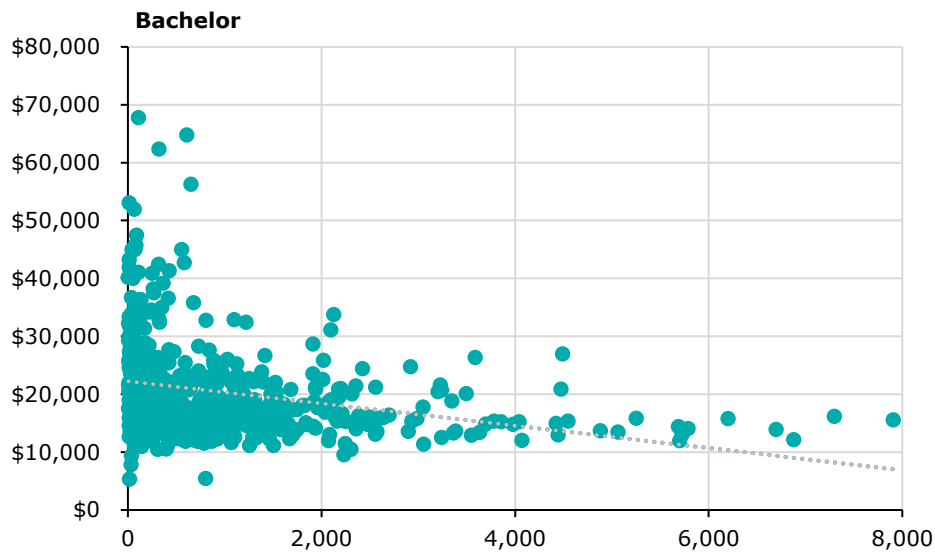
Furthermore, the analysis showed stronger field effects versus institution effects, which suggests that there are stronger variations in cost between disciplines than universities, which may be unsurprising given a regulated funding environment and wide scopes of delivery.

Chart 2.21 depicts the negative correlation between scale and cost, whereby increasing total EFTSL is associated with decreasing unit costs for each level of education. Notably, the highest cost observations are all delivered in instances of smaller EFTSL.

Chart 2.21: Correlation between scale and unit costs



¹⁸ Based on the home postcode of students.



Note: Each marker represents a unique university field-level cost observation. Line of best fit included.

Variation between metropolitan and regional institutions and those with a greater degree of research focus

Universities that predominately operate in more regional settings often face distinctive local contexts, including:

- Less readily available scale economies due to thin markets and lower populations;
- A higher share of distance or online learning;
- Potentially lower per unit capital and/or labour costs; and
- A greater need for student support as many regional universities may cater to a more disadvantaged student cohort.

Overall, the cost per EFTSL for regional universities was found to be 9.6% higher than metropolitan universities after controlling for differences in the enrolment mix in terms of FOE and differences in the mix of enrolments across different levels of study between the two groups. However, results varied by level of study. Costs per EFTSL at regional universities were found to be 13.6% higher for bachelor degree students but 0.1% lower for postgraduate students when compared to metropolitan universities.

Universities with a greater focus on research activity may also have differential costs of teaching to other universities. This may arise due to more senior staff tending to be involved in joint teaching and research functions as well as other higher cost resources (such as facilities or equipment) used for both teaching and research, which may be more prevalent when a university has a research-focus. Alternatively, it is possible that some institutions with a greater research focus may allocate a greater proportion of available resources to research relative to teaching.

Overall, the cost per EFTSL across Group of Eight (Go8) universities was found to be 7.3% higher than non-Go8 universities. However, after also controlling for differences in the enrolment mix across FOEs costs at Go8 universities were found to be 1.6% lower than non-Go8 universities suggesting that differences in cost between the two groups was largely driven by differences in enrolment patterns by FOE.

3 Discussion and key limitations

This chapter complements the quantitative analysis in the previous chapter by highlighting a number of key considerations in interpreting the results and key limitations of the findings. In doing so the chapter draws on a range of reflections provided by universities during the data collection process including reflections from the consultations and university Supporting Statements.

The remainder of this chapter is structured as follows:

- Section 3.1 presents the key considerations for interpreting the quantitative analysis, including relevant limitations in interpreting the findings.
- Section 3.2 reflects on the apportioning of costs to major activities by universities, in particular, the approach universities have taken to identifying and separating teaching and scholarship costs from research.
- Section 3.3 discusses the treatment of capital costs.
- Section 3.4 provides some reflections on the range of methodologies used, from apportioning costs top down to unit-level activity-based costing models, and the extent to which these methodological considerations may affect the results.
- Section 3.5 summarises some of the other issues raised by universities during this process.

3.1 Key considerations in interpreting the analysis

The key limitations of this analysis are set out in Table 3.1 below. These limitations were recognised at the outset of this exercise and are ongoing challenges faced by exercises of this nature. Importantly, strategies have been undertaken to minimise their impact over time, including working with universities to improve the accuracy of their cost allocation processes and promote consistency in approaches to completing the TCW.

Table 3.1: Key limitations of the exercise

Limitation	Detail and implication
Accurately separating university functions to teaching, scholarship, research and other.	<p>An ongoing challenge faced by universities is the accurate attribution of costs between teaching and research functions and costs, recognising that these are often interrelated.</p> <p>A number of universities identified difficulties in systematically and consistently identifying staff time (as an input to splitting FTE costs) related to research and scholarship, and employed a range of methods from broad based assumptions based on Enterprise Bargaining Agreements, workload allocation models and detailed timesheets.</p> <p>Due to differences in university processes and ability to apportion staff time, there was not a prescribed methodology, but rather a set of principles described for universities to employ. There was evidence, however, of universities improving their internal data collection processes with a view to estimating these splits with greater precision in future data collections.</p>

Limitation	Detail and implication
Cost variation between levels within the same field.	<p>There remain a number of universities (nine of 32) who noted that while they were able to isolate costs between different fields of education, they were not able to separate costs between levels – that is, costs specific to each level within a given faculty or school.</p> <p>In these instances, unit costs were reported as identical within the same faculty or school and were often similar across levels within a field of education (depending on the mix of schools and faculties within a given field), and hence the results are likely to have a convergence in costs between levels. This is discussed in more detail in Section 2.2.</p>
Identifying specific FOE costs within a given school or faculty or relevant business unit.	<p>Some universities noted a level of convergence between certain fields of education, where they were unable to systematically separate costs specifically between those fields.</p> <p>This is particularly pertinent for universities that undertook a top-down approach using relatively large business units (e.g. a small number of faculties, compared to a larger number of schools).</p> <p>As costs may be allocated using only an EFTSL driver this can lead to the same unit costs being applied to several different fields. However, in many instances, universities stated that these fields do indeed have very similar costs of delivery of teaching.</p>
Differences in methodology across universities, including broad method and use of cost drivers.	<p>The level of sophistication and ability to identify appropriate cost drivers to allocate costs has broadly improved year-on-year across the sector. For some universities this has meant the implementation of activity-based costing models (for purposes not exclusively associated with this exercise) or the engagement of external contractors to assist in their submission.</p>
Incorporation of quality.	<p>In measuring the cost of delivery of teaching and scholarship, this exercise only considers quantity of teaching as the unit to distribute costs. This exercise does not capture variations in quality (however defined), where higher quality may be correlated with higher costs.</p> <p>Relatedly, this exercise also does not make adjustments for differences in student cohort mix, specifically differences in average student needs and levels of disadvantage. Some universities are likely to systematically enrol more students with greater need for student supports, which will in turn result in higher costs. As a result, there is likely to be a degree of variation in costs across the sector due to contextual factors and differences in quality across the sector and across FOEs.</p>
Difficulties in specifying and isolating certain cost items.	<p>Differences in internal processes and systems across universities meant that some universities were unable to identify specific costs that aligned with the line items specified as part of the costing template.</p>

Limitation	Detail and implication
	<p>The implication of this is that the examination of some specific line items may not be accurate in instances where a university was unable to separate costs appropriately (and where costs were instead included elsewhere in the template). An example of this was placement costs which many universities capture as part of staff costs in their internal cost allocation models.</p> <p>While this does not impact the overall unit cost calculation, it does caveat any comparison of specific costs, e.g. when comparing specific line items of non-staff costs. For this reason, analysis of these items has not been a significant focus of this report.</p>
Costs will reflect the current funding arrangements.	Costs for a given FOE are likely to be partly driven by current funding arrangements, which may to some degree affect internal resource allocations within a university. That is, costs for a given FOE may in part be driven by current funding allocations to that FOE and may differ from those that would occur under different funding arrangements from those currently in place.

3.2 Reflections on splitting teaching and research

The split of staff time between teaching and research activities¹⁹ remains an area where there was large variation in approaches across universities. Given the significant share of total teaching and scholarship costs is allocated to staff - 59% on average – the precision of measuring staff time has arguably the most material influence on the measurement of the economic cost of teaching and scholarship.

The majority of universities (23 of 32) used workload allocation models, which varied in their sophistication in splitting teaching and scholarship time from research and other activities. In very few cases universities used staff survey data that provided a relatively detailed understanding of staff time. In some cases, allocation of staff time was based on estimates at the whole-of-faculty level, while others based estimates on enterprise bargaining agreements that specify a division of time, and which may vary in accuracy across staff levels and disciplines. Three universities indicated that the split of staff time was largely based on EBAs or notional allocation of staff time captured in human resources systems. It was highlighted through consultations that these time splits based on EBAs are often out of date and unlikely to reflect the true distribution of time across activities. Future data collections will encourage the continued refinements of these methods towards more precise approaches.

Despite a range of methodologies, university membership nevertheless provides evidence that teaching and research time is being split in a way that is in line with expectations (see Chart 2.2). This share is lower for the research-intensive Group of Eight universities, and higher for regional universities who are typically less research intensive.

3.3 Treatment and accounting for capital costs

The capital costs involved in providing university buildings, infrastructure, plant and equipment is a significant component of the sector's costs. The cost of capital can also vary considerably from year to year, depending on whether or not a university is currently undertaking a large capital expansion program.

¹⁹ For those academic staff classified as 'teaching and research' as well as non-academic staff tasked with supporting teaching and research academic staff.

The approach to capturing capital costs related to teaching and scholarship is an issue that has been raised by universities on a number of occasions, both through the Universities Australia reference group and through individual consultations and Supporting Statements.

Reflecting these concerns, the approach used to capture capital costs has been refined iteratively in each year of the Transparency in Higher Education Expenditure exercise. The approach used in the 2016 study to capture capital costs was to include the costs of depreciation, amortisation, repairs and maintenance, borrowing costs and bad debts associated with teaching and scholarship. This focus on depreciation represents the standard accounting-based approach to capturing capital costs.

Some universities raised concerns about this approach. These concerns can be broadly categorised into two types of concerns:

1. That the application of accounting standards or treatments are such that reported levels of depreciation are not reflective of the economic cost of replacing the capital stock. This could be due to a range of reasons such as:
 - a. Use of fully depreciated assets e.g. older buildings
 - b. Calculating depreciation based on historical costs rather than regularly undertaking asset revaluations
 - c. Assumptions around the useful life of specific assets not reflective actual useful lives
2. That current reported levels of depreciation (even if appropriate) do not cover the costs of replacing assets in the future due to functional obsolescence and changes in technology. In other words, even if depreciation is sufficient to replace current assets it will not cover the costs of replacing those assets with assets that reflect modern pedagogical practices. Related to this is the concept of maintaining a sufficient margin for sustainable investment to allow universities the flexibility to invest in strategically planned investments.

These issues were discussed in a 2007 OECD working paper entitled *On the Edge: Securing a Sustainable Future for Higher Education*. The report focuses on the concept of a "Full Economic Cost", which encompasses:

- consumption of assets (depreciation)
- renewing assets
- financing (costs of capital)
- risk.

The report suggests that in order to be sustainable, universities must generate appropriate operating surpluses such that the full economic cost is recovered. The OECD report also argues that it is appropriate for universities to plan for an ongoing operating surplus, which it notes would normally be 3-4% of income to finance strategically planned investment, rather than the replacement of existing buildings:

"In any event, future investment needs should be determined by institutional strategic plans, not simply renewing historic infrastructure, some of which may be no longer required..."

The OECD report cites the UK example of the Transparent Approach to Costing (TRAC) methodology. TRAC was first implemented in the UK in 2000, following a national survey of university infrastructure. Since its introduction, the method to determine the cost of capital, and appropriate surplus, has developed over time. The current iteration of TRAC-UK includes a Margin for Sustainability and Investment (MSI). Importantly, this is institution-specific, rather than a sector-wide benchmark, as discussed in the TRAC guidance for 2016-17 returns:

"The MSI provides an institution-specific margin that is based on an average of past financial performance and forecast performance. This will reflect each institution's own financial strategy and is based on an agreed definition of the 'Earnings Before Interest, Taxation, Depreciation and Amortisation' (EBITDA)."

While relevant to a discussion of university finances more broadly, the adoption of an equivalent to the MSI in the Australian context should be the result of a specific and deliberate policy discussion

that is outside the parameters of the current project. From the UK experience, establishing a process for an appropriate margin would require a significant amount of preparatory work, to understand current asset stocks and building maintenance backlogs, for example. In particular, the precise MSI is likely to vary across the sector.

To gather more insights on issues relating to the capital costs associated with teaching and scholarship, both the 2018 and 2019 Transparency in Higher Education Expenditure exercises have included a range of questions both in the Supporting Statements and in the Consultation Guide to elicit universities' views on issues related to capital costs.

Moreover, following feedback from discussions with the Universities Australia Reference Group, in addition to capturing the costs of depreciation and amortisation, repairs and maintenance, borrowing costs and bad debts associated with teaching and scholarship, an additional below the line allowing for an optional depreciation adjustment was included in the 2019 exercise. The purpose of this optional depreciation adjustment is set out in the Guidelines:

"In cases where a university has fully depreciated assets that are still in use or where historical book value differs from the cost of replacing a building in its current condition, depreciation may not accurately reflect the full economic costs of using these buildings for teaching activities. This may also apply to assets other than buildings such as, plant and equipment assets ... This is intended for universities who either have fully depreciated assets that are still in use or who do not conduct regular revaluations of their assets for the purpose of calculating depreciation."

The inclusion of this below the line adjustment sought to address the first major concern around the potential for accounting standards or treatments to result in an underestimate of capital costs. It does not seek to address the second major concern of universities noted above, concerning the additional costs of replacing capital to meet modern teaching standards and practices. This was explored both through the consultations and the inclusion of a range of questions on capital costs in the Guidelines for the Supporting Statement in 2019, which is extracted below:

1. If your institution has sought to include a depreciation adjustment in rows 90 to 93 of the Transparent Costing Worksheet what approach has been used to inform this adjustment? Are there any other issues concerning the calculation of depreciation associated with teaching activities that your institution would like to note?
2. Is the level of expenditure on repairs and maintenance noted in university financial accounts, consistent with long term sustainable maintenance costs?
3. Is it possible to identify the level of capital expenditure undertaken for teaching and scholarship purposes over the last five years? If so, how does this compare to reported depreciation associated with teaching and scholarship over this period?
4. Is it feasible to allocate capital expenditure for teaching and scholarship by Field of Education and study level?

Reflections on the appropriateness of reported depreciation levels

To understand university perspectives on capital costs, Deloitte Access Economics analysed the responses of universities through the Supporting Statements and consultations. In relation to whether reported levels of depreciation were a reasonable reflection of the true costs of depreciation:

- A total of 21 out of 32 universities indicated that their reported levels of depreciation were appropriate - this is not to say that they all necessarily believed that depreciation was the preferred measure of the capital costs of teaching and scholarship, but that reported levels of depreciation were appropriate for their institution.
- Of those that did not believe it was a reasonable measure, five noted that this was because they had fully depreciated assets. Other reasons included infrequency of revaluations, assumptions around the useful lives of assets, use of historical cost methodologies and insufficiency of depreciation measures to capture repair and maintenance costs.
- Relevantly, nine universities chose to adopt an optional depreciation adjustment to reflect either the presence of fully depreciated assets or that assets were not valued in line with fair value.

Overall, this suggests that there are a mixture of views on the appropriateness of recorded depreciation levels across the sector. Most universities see reported levels of depreciation as appropriate but there are a significant number who do not- in many cases because assets that are fully depreciated continue to be in use or because assets are valued on a historical cost basis rather than a fair value basis.

These findings point to the value of continuing to allow for an optional depreciation adjustment to help capture aspects of capital costs that are not captured in reported depreciation levels- reflecting in part differences in the asset profile and valuation practices across the sector.

Reflections on the appropriateness of depreciation as a measure of capital costs

However, when universities were asked whether or not they believed depreciation was an appropriate measure of capital cost only 31% of universities who responded to this question believed this to be the case. The majority of those who did not believe it was a good measure, indicated that depreciation was insufficient to capture either their current or expected future capital costs associated with meeting modern pedagogy requirements. A number of universities noted that in recent years capital expenditure had been in some cases double reported depreciation levels. At the other end of the spectrum, some universities noted the two figures had been broadly similar in recent years.

Many of those who did see depreciation as the most appropriate measure of capital costs indicated it was the most reasonable basis for measuring capital costs across the sector. Indeed a number of universities indicated that although depreciation was an imperfect measure of capital costs, including capital costs ran the risk of leading to large variation in results from year to year depending on whether or not a university was currently in a capital expansion phase.

In general universities noted that while it may be feasible to include capital costs in such an exercise in many cases it was unclear whether new constructions would be used for teaching, research or other purposes (indeed many noted that buildings were becoming increasingly multi-purpose). It was also difficult to predict in advance which disciplines were most likely to utilise them. Thus allocation of current or future capital costs to specific FOEs was likely to be a difficult task.

These findings suggest that while depreciation (reported or adjusted) may be the most appropriate measure of capital costs across the sector, in the majority of cases it is likely to underestimate current capital costs. How this difference should be addressed in the context of this study is an open question.

One option is to explicitly recognise that the costs of teaching and scholarship will not necessarily account for the full costs of future capital replacement and potentially include a margin to capture the average sector wide differences between capital expenditure and depreciation over a suitable time frame. This would provide an indication of the extent to which the sector is currently investing in capital above and beyond reported (or adjusted) depreciation. A second option would be to move towards the incorporation of a university specific Margin for Sustainability and Investment - although as noted above there is significant work involved in incorporating such a measure in this exercise.

Repairs and maintenance

A large number of universities noted that they had a significant backlog of repairs and maintenance and had not invested sufficiently in repairs in maintenance in 2018 or previous years. However, most universities also acknowledged that underinvestment in repairs and maintenance was a strategic decision reflecting a willingness to spend on other strategic priorities or initiatives but with the risk that failing to invest in repairs and maintenance could result in higher rectification costs in later years.

3.4 The ability to allocate costs to a unit of study level

There are a range of methodologies that universities use to allocate costs depending in part on the existing costing methodologies used internally by the university. Some universities have detailed activity based costing (ABC) models available to estimate costs at a relatively granular level (often

the unit of study) based on a range of drivers. The use of an ABC model is often referred to as a 'bottom-up' approach to the extent that costs at the unit level may be aggregated up to a field of education level. However, even when using an ABC models some costs may still be apportioned from a whole-of-university basis using a cost driver, known as a 'top-down' approach.

Other universities which do not have cost allocation models that estimate costs at the unit of study level, will rely predominately on a 'top-down methodology'. On this basis, bottom-up approaches will on average provide more differentiated cost information, and hence are typically considered to provide more accurate results by field and level of education. Notwithstanding this, the accuracy of any cost allocation model (whether or not it allocates costs down to a unit of study level) will ultimately depend on the accuracy of the assumptions i.e. cost drivers which are used and the information that is used to populate it.

The most sophisticated cost allocation models were generally informed by:

- Detailed information on the use of staff time for teaching and research and in some cases identifying the individual staff members who taught each unit of study
- The use of a space model that allocates the use of teaching space to specific schools and in some cases units of study
- A range of drivers to allocate central overheads appropriately.

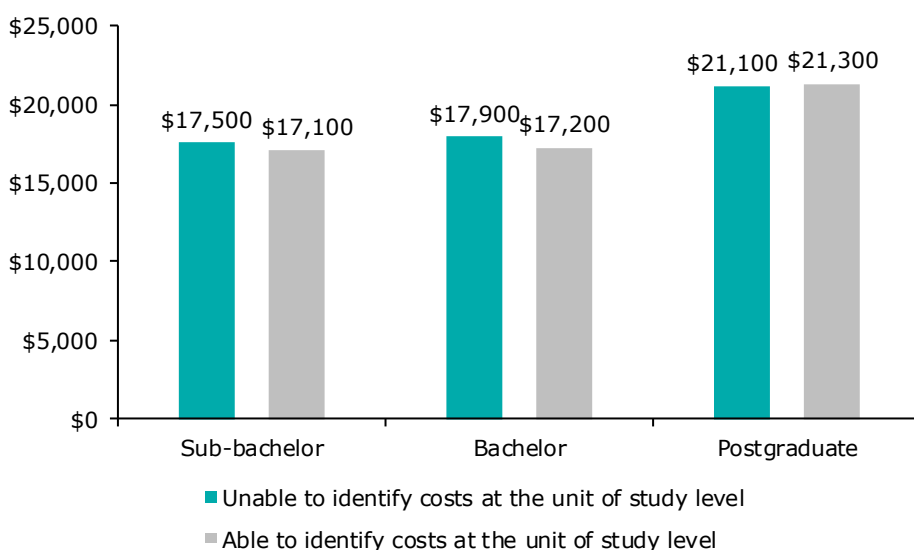
One advantage of cost allocation models that estimate costs at a unit of study level is that it is more straightforward to aggregate costs to a field of education level – since many schools may teach courses across multiple fields – and to identify differences in cost by level.

Extent of variation in practice

In the 2019 Transparency in Higher Education Expenditure exercise, 59% of universities indicated that they were able to identify costs at a unit of study level with the remainder adopting a top-down approach. Importantly, some universities may use a mixture of both top-down and bottom-up approaches, particularly in relation to costs that are in the scope of this exercise but would not be captured in internal cost allocation exercises.

Universities that are able to identify costs at the unit of study level reported lower costs per EFTSL, on average, compared to universities that were unable to identify costs at the unit of study level (see Chart 3.1). Teaching and scholarship costs are 2.6% lower for sub-bachelor study, 3.8% lower for bachelor but 1.1% higher at the postgraduate level.

Chart 3.1: Average unit costs for institutions able to identify costs at a unit of study level, by level of study (all fields)



The overall similarity of costs suggests there is not a marked difference in average costs across universities based on their ability to cost at a unit of study level. However, a number of the universities with the highest and lowest average teaching and scholarship costs per EFTSL are institutions that are unable to identify costs at the unit of study level (see 0). It is not clear whether this simply reflects underlying differences in cost for these institutions or that those able to identify costs at a unit of study level may have greater information on costs and the split of teaching and research time that makes them less likely to under or overestimate costs.

Chart 3.2: Average unit costs for institutions able to identify costs at a unit of study level, by university (all fields and levels of study)

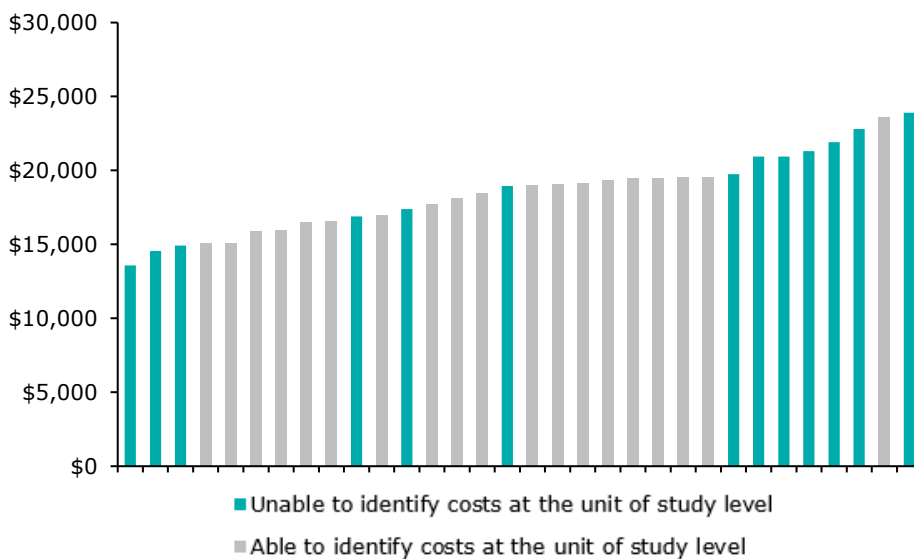
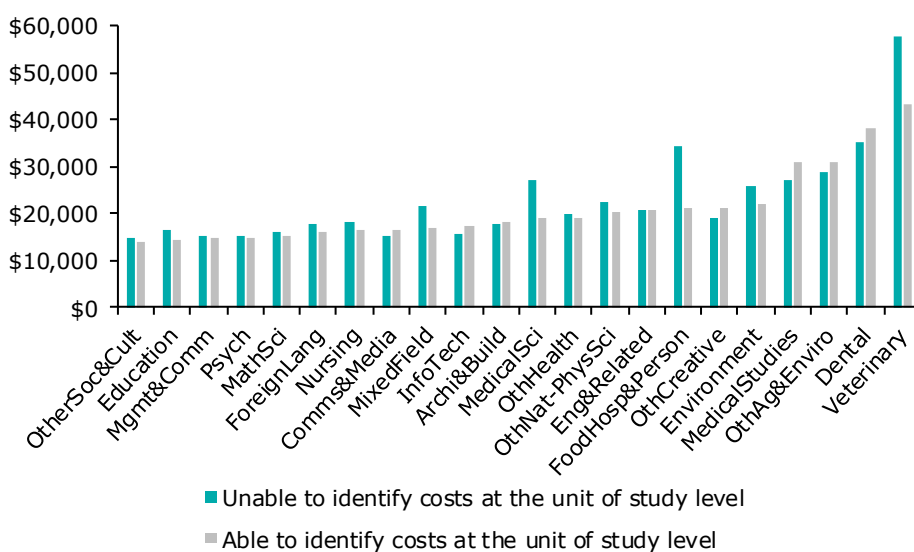


Chart 3.3 shows that for most fields of education costs are very similar between those who are and are not able to identify costs at the unit of study level. The key exceptions to that are Mixed Fields, Medical Science, Food and Hospitality, and Veterinary Science. However, these fields typically have few observations so these results are likely to be driven by higher costs for a small number of universities unable to estimate costs at the unit of study level.

Chart 3.3: Average unit costs for institutions able to identify costs at a unit of study by FOE for bachelor level study



Some universities indicated that they had a desire to develop cost allocation methodologies that allocated costs down to a unit of level or subject level in the future, but noted that their inability to do so may mean that costs at a field of education level may not be comparable to other universities who are able to do so.

3.5 Other reflections from universities

Universities remained highly engaged in the Transparency in Higher Education Expenditure project in 2019 and those that had participated previously appreciated the relative consistency in the structure of the cost collection template.

Throughout the process, universities provided a range of reflections both in relation to:

- The purpose of the data collection and the interpretation of results
- The comparability of results across universities

The sector's concerns were broadly consistent with those raised in the 2018 exercise and are set out in greater detail in the sections below.

Reflections from universities on the data collection process and interpretation of results

Universities expressed a range of views regarding the process and its broader objectives. The issues most frequently articulated by universities included:

- The decision to *exclude research from the analysis*, which many universities saw as being inherently included in the scope of CGS funding. Relatedly, many universities noted that teaching, research and community engagement were jointly produced with inherent efficiencies in producing these activities jointly, such that an estimate of teaching and scholarship costs on a proportional basis would underestimate the costs of achieving this activity alone. Other universities noted that it was difficult to separate teaching costs where activities had a dual purpose of both supporting teaching and research - which again points to the potential for efficiencies in jointly delivering teaching and research. One university raised the concern that by focusing on teaching and scholarship costs the exercise may create incentives for universities to focus more on teaching related activities.

It is worth noting in this context that the Department is actively considering ways to incorporate the costs of research in this exercise.

- The *provision of data on an FOE basis* was inconsistent with universities' underlying operating structures, as universities do not tend to budget on the basis of FOEs but rather on the basis of Faculties and Schools. While universities have relatively refined data on teaching costs at the faculty or school level, mapping this to individual FOEs proved difficult for some. Various assumptions were made in conducting this mapping. Further, because universities provide courses, which are more granular than FOEs, there will be some variation in the offerings (that is, differences in the weightings of particular courses) included within an FOE across institutions.

As the sophistication of internal university models increases, and more institutions adopt activity-based (bottom-up) accounting methodologies, this issue will diminish over time although there will always be a degree of variation in course mix across universities which will need to be taken into consideration when comparing results across institutions within a given field of education.

- Universities also noted that costs for a given calendar year are a partial indicator given that there may be *substantial year-to-year variation* as a result of non-recurring events, such as faculty restructures, redundancies, creation of new faculties, or the timing of capital expenditure which may impact a given university's depreciation profile.

The decision to undertake the data collection process over a three year period will help minimise the potential impact of these non-recurring costs by providing a profile of costs for the sector over a longer period of time.

- A small number of universities noted that the *exclusion of the costs of teaching incurred by industry partners* (where no exchange was made in kind) meant that the study was not capturing the full costs of teaching. In particular, universities noted that many of the costs of teaching and scholarship associated with clinical placements incurred by industry partners were material.

This is an important point and it is worth acknowledging that the scope of this study is limited to the costs borne by universities and that a wider range of organisations including clinical and industry partners, organisations and government agencies, may all play a significant role in supporting teaching and scholarship by universities.

- One university questioned the exclusion of non-award and enabling students from the exercise noting that they were often taught in the same classes as in-scope EFTSL and that enabling courses played an important role in providing access to higher education for students from regional or disadvantaged backgrounds.
- Finally, a number of universities raised concerns about plans to identify results for individual universities in the future. They noted that there would need to be guidance on interpreting the results, potentially through the inclusion of visual aids or hover over text to allow universities to explain why particular results differed from the sector average e.g. the specific characteristics of university, research activity, low number of EFTSL in a given FOE etc.
 - In particular, some universities were keen for cost information to be presented in the Quality Indicators for Learning and Teaching (QILT) alongside quality measures, such as student satisfaction, student success and graduate outcomes.

Challenges in comparing results across universities

In addition to the items noted above, many universities commented on the validity of comparing results across the sector.

Universities raised concerns around the extent to which differences in costs across the sector might be driven by differences in methodologies and the sophistication of cost allocation models. As discussed previously, several universities are unable to differentiate between costs at different levels of study within an FOE. Questions were also raised about the potential for the results to be driven by different degrees in accuracy of allocating costs between teaching and research, although approaches to estimating these components were discussed in the course of university consultations.

Two particular issues of comparability were raised in a number of Supporting Statements and consultations. The first involved the inclusion of below the line items, in particular in-kind costs. Some institutions questioned whether the inclusion of these items might compromise the objective of comparability to the extent that institutions who are unable to quantify these costs may accordingly record lower costs. To the extent that some institutions may be better placed to estimate these costs than others this may affect the degree of comparability across institutions. Other institutions saw the inclusion of in-kind costs as relatively subjective. Some additional reflections on the inclusion of in-kind costs is set out in Chapter 4 below.

The second issue of comparability raised involved the concept of scholarship, which a number of universities noted was relatively subjective and difficult to disentangle from research activities. Concerns were also raised that if universities interpreted the concept of scholarship differently, or indeed were more or less easily able to identify scholarship time from their internal workload allocation models, this may affect the comparability of results across the sector. While this is a valid concern, the purpose of the consultations and Guidelines were to ensure a consistent definition of scholarship was adopted across the sector with the intent of improving comparability. The exclusion of scholarship would also run the risk of reducing comparability in results over time.

Questions were also raised regarding the extent to which differences in costs across the sector are likely to be driven by contextual factors at a university level, and by differences in strategic objectives. Factors that were noted by universities included:

- Scale
- Capital footprint
- Regional presence, which could raise the cost of certain types of delivery and may require universities to provide a range of support services.
 - On the other hand, some universities operating campuses in the CBD of larger cities noted that their costs may be higher reflecting in part the cost of living in those cities - which may impact both staff costs and the costs of leasing facilities
- The comprehensiveness of their course offering
- The proportion of international students, which may help fund greater expenditure on teaching and scholarship but also create some international student specific teaching costs
- The extent of research activity undertaken by a university
- Chosen delivery modes
- The level of disadvantage and past educational attainment in the student cohort.

These concerns relate less to whether or not the exercise is accurately capturing the costs of teaching and scholarship, and more to the extent to which any inferences in relation to efficiency can be drawn based on comparisons across individual universities. Put simply, contextual factors may mean that two equally efficient universities could have very different costs, reflecting differences in context, strategic objectives and teaching methods. This is an important consideration when comparing differences in both total costs across the sector and costs within a FOE.

4 Potential areas for improvement in 2020

The three year timeframe of the Transparency in Higher Education Expenditure project means that there is material scope to continually refine the exercise. While many universities reiterated the value of consistency in the exercise – in ensuring the comparability of results over time and reducing the need to overhaul reporting systems – a number of potential areas for improvement were identified in the course of university consultations and in university Supporting Statements.

Potential areas for improvements are discussed in greater detail below, recognising that changes to the process in subsequent years will need to be agreed to by the Universities Australia Reference Group and the Department.

4.1 Potential changes to the treatment and explanation of certain items

Table 4.1 summarises the three central changes specifically suggested by universities and the rationale supporting each.

Table 4.1: Suggested changes to the Transparent in Higher Education Expenditure exercise

Suggested change	Reason
Adding a universities HEIMS submission used to calculate the pre-filled EFTSL data to the Transparent Costing Worksheet	A number of universities still had difficulties reconciling EFTSL data provided to the Department with internal data and wished to know the date at which they had provided EFTSL data to the Department given that these figures can fluctuate throughout the year.
Incorporation of checklists	Some universities noted there may be value in including a checklist of relevant checks a university should undertake prior to submitting the data.
Offshore experiences	One university noted that programs such as an MBA may incorporate offshore learning experience as part of the program and it was unclear whether these should be included in the scope of the Transparency in Higher Education Expenditure exercise.

At a more fundamental level, another potential change that this year's collection has indicated warrants consideration is the form in which below the line items for in-kind costs, third-party and partnership costs and the optional depreciation adjustment are collected and reported. In particular, given that the first two of these three items have now been included in the exercise for two consecutive years, the conclusion of the 2019 exercise provides an appropriate juncture to reflect on the way in which they should be included going forward. These are discussed in turn below.

In-kind costs

Through the course of the consultations with universities it became clear that some were misinterpreting the types of in-kind costs that were within the scope of this exercise. Some institutions saw the concept as seeking to estimate the in-kind costs incurred by partner organisations and accordingly sought to estimate the value of the time provided by the staff of these organisations rather than estimating the cost of 'in-kind' benefits provided by universities to these organisations.

While Deloitte Access Economics was able to clarify these issues through the course of the consultations and subsequent interactions, it is clear that despite clarifications to the data collection Guidelines in the 2019 exercise, the concept of in-kind costs remains relatively unclear to many including those who have not previously participated in the exercise.

Moreover, the inclusion of in-kind costs below the line is inherently inconsistent given that the costs it seeks to capture are actually incurred by universities above the line. The only distinction from other costs captured above the line is that they involve expenses which are incurred in providing services to third parties (in exchange for teaching) rather than direct staff members. For example, the costs of library access for a clinical partner who is involved in teaching a universities' students in-kind is captured below the line but the costs of library access for a direct staff member would be captured in the template above the line. Both costs are recorded in a universities' financial statement. Moreover, relatively few institutions have sought to include in-kind costs in the exercise with many noting that in-kind costs are difficult to quantify or immaterial for their institution. Only three universities sought to include in-kind costs in 2019, a similar number to the 2018 exercise.

In light of these observations, there is a case for considering including in-kind costs above the line. This would require the Guidelines to be redrafted to note that expenses incurred by universities in providing facilities to third parties in exchange for teaching in scope students can be incorporated in the exercise and would require additional support and guidance throughout the collection process to ensure this information is collected in a reliable and consistent fashion.

Third-party and partnership costs

A slightly higher number of universities included third-party and partnership costs in the 2019 exercise than in-kind costs, with five universities reporting these costs. The inclusion of this item is important for comparability to ensure that the precise nature of revenue sharing arrangements with partner organisations does not affect the level of costs reported by a university. These costs are appropriately captured below the line given that they do not appear as an expense on university financial statements.

Universities have noted in this context that capturing the revenue provided to partners is not a perfect reflection of the partner's costs (which may differ from the revenue they receive). However, if the purpose of the exercise is to understand the cost to universities associated with teaching in scope EFTSL (adjusting for any revenue sharing arrangements with partners) then including revenue shared with partners is appropriate as universities could alternatively just record the revenue shared as a teaching expense. If the objective was to estimate the total costs of teaching and scholarship to the community then it would be necessary to better understand the cost to all third-party partners including those facilitating clinical placements.

As two years of data is available and the magnitude of third-party costs are broadly consistent, consideration could be given to including these costs in year to year comparisons to develop a holistic picture of changes in costs for the sector over time that takes into account the use of third-party partners not captured above the line.

The optional depreciation adjustment

Finally, a number of universities found it useful to include an additional below the line item for the optional depreciation adjustment. This item has been helpful in providing further information on the costs of capital for universities and allowing for better comparisons across the sector for those institutions relying on either fully depreciated assets or using a historical cost approach to calculating depreciation.

4.2 Potential changes to the data collection process

In addition to suggesting changes to the TCW itself, universities also reflected on the data collection process itself. In particular, a number of universities raised concerns about the relatively short period to complete the TCW in 2019 and asked that the TCW be circulated earlier to allow for more time for it to be filled out and for additional information to be incorporated. They also

requested that the report from the previous year's exercise be publicly released prior to the data collection period.

Appendix A: Transparent Costing Worksheet

[see over page]

Transparency in Higher Education Expenditure

Name of university:			\$ costs	% share	Formula	Pre filled	Not required															\$ costs	% share	Formula	Pre filled	Not required							
Reporting data for the year ending:			2018																														
FOE 01			FOE 02		FOE 03		FOE 04		FOE 05		FOE 06			FOE 07		FOE 08		FOE 09			FOE 10		FOE 11		FOE 12		Total						
Natural and Physical Sciences			Information Technology		Engineering and Related Technologies		Architecture and Building		Agriculture, Environmental and Related Studies		Health			Education		Management and Commerce		Society and Culture			Creative Arts		Food, Hospitality and Personal Services		Mixed Field Programmes		Total						
FOE 0101	FOE 019001	Other									FOE 0601	FOE 0603	FOE 0607	FOE 0611	Other			FOE 091503 to 091510	FOE 090701	Other	FOE 1007	Other					Total						
Mathematical Science	Medical Science										Medical Studies	Nursing	Dental Studies	Veterinary Studies				Foreign Languages and Translating	Psychology		Communication and Media Studies						Total						
Resourcing																																	
Staff Costs - Employee benefits and on-costs (i.e. total wage bill)																																	
<i>Academic staff costs attributable to teaching and scholarship</i>																																	
<i>Academic staff costs, Teaching only (\$)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
<i>Academic staff costs, Teaching & Research (\$)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
<i>Casual academic staff costs attributable to teaching and scholarship</i>																																	
<i>Casual academic staff costs, Teaching only (\$)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
<i>Casual academic staff costs, Teaching & Research (\$)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
<i>Non-academic staff costs attributable to teaching and scholarship</i>																																	
<i>Non-academic staff costs, Teaching & Research (\$)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
<i>Academic staff costs (\$) - teaching and scholarship</i>																																	
<i>Casual academic staff costs (\$) - teaching and scholarship</i>																																	
<i>Non-academic staff costs (\$) - teaching and scholarship</i>																																	
Total staff costs - employee benefits and on-costs (i.e. total wage bill) - teaching and scholarship (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
Total staff costs - employee benefits and on-costs for staff excluding teaching and scholarship activities (e.g. research, community activities etc.) (\$)																																	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	\$0				
% of staff costs for teaching and scholarship																																	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Non-staff costs attributable to teaching and scholarship																																	
<i>Cost of materials, utilities, equipment (\$)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
<i>Expenses that relate to placements (\$) (optional)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
<i>Depreciation, amortisation, repairs, maintenance, borrowing, bad debts (\$)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
<i>Other non-staff expenses (\$)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
Total sub-bachelor teaching - non-staff costs (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
Total bachelor teaching - non-staff costs (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
Total coursework postgraduate teaching - non-staff costs (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
Total non-staff costs attributable to teaching and scholarship (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
Total non-staff costs excluding teaching and scholarship activities (e.g. research, community activities etc.) (\$)																																	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	\$0				
Total non-staff costs for the whole institution (\$)																																	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	\$0				
% of non-staff costs for teaching and scholarship																																	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Total higher education expenses for whole institution (teaching and scholarship and all other activities)																																	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Calculations																																	
TOTAL TEACHING AND SCHOLARSHIP COSTS (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
COST FOR SUB-BACHELOR STUDENTS, (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
COST FOR BACHELOR STUDENTS, (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
COST FOR COURSEWORK POSTGRADUATE STUDENTS, (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
Additional items																																	
<i>In-kind costs (\$) (optional)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
<i>Third-party and partnership costs (\$) (costs of partners not captured in university financial statements)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
<i>Depreciation adjustment (optional) (for universities who either have fully depreciated assets that are still in use or who do not conduct regular revaluations of their assets for the purpose of calculating depreciation. See the 'Depreciation adjustment' tab for further details.)</i>																																	
Share of above attributable to sub-bachelor teaching activities (%)																																	
Share of above attributable to bachelor teaching activities (%)																																	
Share of above attributable to coursework postgraduate teaching activities (%)																																	
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$0				
Calculations																																	
TOTAL TEACHING COSTS - INCLUDING ADDITIONAL ITEMS (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
COST FOR SUB-BACHELOR STUDENTS - INCLUDING ADDITIONAL ITEMS, (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
COST FOR BACHELOR STUDENTS - INCLUDING ADDITIONAL ITEMS, (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
COST FOR COURSEWORK POSTGRADUATE STUDENTS - INCLUDING ADDITIONAL ITEMS, (\$)																																	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
Total Onshore EFTSL (excluding non-award and enabling courses)																																	
Sub-bachelor EFTSL																																	
Bachelor EFTSL																																	
Postgraduate coursework EFTSL																																	

Appendix B: Data collection Guidelines

Definitions

Term	Description
Field of education	Fields of education are defined using the Australian Standard Classification of Education (ASCED). The specific categorisation of fields has been determined by the Department.
Sub-bachelor	Sub-bachelor covers all courses delivered at the diploma, advanced diploma and associate degree level. Excludes non-award and enabling courses.
Bachelor	Bachelor covers all courses delivered at a Bachelor degree level. This includes Bachelor's Pass, Bachelor's Honours and Bachelor's Graduate Entry. Excludes non-award and enabling courses.
Postgraduate coursework	Postgraduate coursework includes all postgraduate degrees that are delivered predominantly through coursework (e.g. those courses for which research makes up less than two thirds of the student load as per the Commonwealth Scholarships Guidelines (Research) 2017), including Masters and coursework PhDs. Where a coursework postgraduate degree includes a research component, this should be included as postgraduate coursework. Excludes non-award and enabling courses.
Academic staff	Members of staff, whether full-time or part-time, who are employed wholly or principally in teaching and/or research or to whom such persons are responsible in relation to their teaching or research. This includes staff who are employed wholly or principally to assist other academic staff in teaching and/or research activities (e.g. tutors, research assistants, etc.). This excludes casual academic staff.
Casual academic staff	Members of staff employed on a casual basis, wholly or principally involved in teaching and/or research (e.g. tutors, research assistants, and labour hire arrangements, where a 3rd party is contracted to provide teaching services on a casual basis). This excludes members of staff employed on a full-time or part-time basis.
Non-academic staff	Both permanent and casual members of staff who are not academic staff (teaching and/or research), and instead provide support functions for the university, e.g. administrative staff, IT staff, those involved in student enrolments and learning assistance. Non-academic staffing levels should amount to total staff minus academic staff and casual academic staff.
Teaching	Teaching time includes all of the following: lecturing, tutoring, demonstrating, reading and preparation for classes (lecture and tutorial content, handouts, workbooks, placing material on the Web, laboratories), all forms of marking and assessment, discussion and feedback to students (both face-to-face and electronically), administration of subjects, course advice and enrolment, organisation and supervision of practicum (including work experience and excursions), supervision of Honours students and committee work related to teaching. Teaching only staff are those whose time is spent exclusively on teaching and scholarship activities.
Teaching & Research	Time spent by staff members that are involved in both teaching and research activities. This category recognises that staff may be involved in a variety of activities including teaching, supervising research students and engaging in research and scholarship.

Term	Description
Research only	Certain staff will only be employed for research, i.e. staff with no teaching responsibilities. These staff, activities and costs are explicitly excluded.
Employee wages, benefits and on-costs (i.e. total wage bill)	All staff-related expenses. The wage bill should include all expenditure on staff compensation including gross salaries and salary on-costs such as superannuation and leave entitlements (i.e. annual leave, personal leave and long service leave).
Cost of materials, utilities, equipment	Cost of teaching-related expenses such as materials, utilities and equipment by field of education
Expenses that relate to placements	Cost of teaching-related expenses associated with the placements by field of education.
Depreciation, amortisation, repairs and maintenance, borrowing and bad debts.	Cost associated with asset and capital management.
Other non-staff expenses	All remaining costs by field of education, i.e. costs not captured by 'staff costs', 'cost of materials, utilities and equipment', 'expenses relating to labs/practicum/field work' and 'depreciation, amortisation, repairs, maintenance, borrowing and bad debts'.

Background

Deloitte Access Economics has been engaged by the Department of Education (the Department) to conduct a three-year project to collect and analyse data on the cost of delivering higher education. This is an extension of previous 2016 and 2018 studies, and will include all Australian public universities in the final year of the exercise (in 2020).

Introduction and context

At a high level, the key objectives that the Department is seeking to achieve with this exercise include:

- Accurately measuring the costs of teaching (including scholarship²⁰) by field and level of education.
- The continued transition to a more comprehensive, systematic and streamlined data collection process over the three years from 2018 to 2020 (and beyond).

As part of this important study, Deloitte Access Economics will work closely with universities to support the successful collection of data. This document forms one element of this support, and has been developed to assist universities in reporting their data on a consistent basis, and to cover common questions that are likely to arise in the course of collecting and allocating the costs of teaching.

Importantly, while this document intends to cover a number of issues and clarifications, it is unlikely to cover all scenarios or questions that you may have for your institution. For this reason, the Deloitte Access Economics team will arrange a time (if it has not already done so) to conduct an extended discussion with each institution, which will address:

- any issues or queries you have with respect to the data collection tool;
- any contextual points specific to your university that we should be aware of in interpreting the data provided; and
- any further background on the decision-making regarding the relative costs of teaching within your institution.

Alongside the Excel-based Transparent Costing Worksheet, universities will also be provided with Guidelines for a Supporting Statement in order to provide additional commentary on how they have completed the data collection exercise.

In addition, the Deloitte Access Economics team is available to answer questions as they arise. In any instances where you require clarification or guidance, please contact the project email address at HEcosting@deloitte.com.au.

We thank you for your participation in this important research and look forward to being in contact.

Some guiding principles

The objective of this exercise, as outlined above, is to estimate the cost of teaching (including scholarship) in higher education. While the collection is intended to reconcile against universities' statutory financial accounts, the basis upon which costs are characterised in the collection differs to standard accounting approaches.²¹

In seeking to appropriately estimate the cost of higher education teaching (including scholarship), the exercise is concerned with the economic cost attributable to each field and level of education.

²⁰ Note: For simplicity in this document, 'teaching and scholarship' and 'teaching' are used and referred to synonymously throughout.

²¹ A university's parent entity accounts are most applicable to this exercise and these are used for the purposes of reconciliation. However, in the event that there are entities in a university's consolidated accounts but not the parent entity accounts which incur relevant teaching and scholarship costs, these should be captured by this exercise. Where this occurs it should be noted in the Supporting Statement.

This may see costs allocated across activities in a manner, which differs to how they might be allocated for other – accounting – purposes.

With this in mind, the design of the approach and methodology has been geared toward achieving the overarching objectives of this exercise, and has been informed by a number of guiding principles. These principles are intended to support the generation of a final dataset in which costs are characterised and captured in a manner that is:

1. **Reliable** - such that a suitable level of assurance can be established regarding the underlying data.
2. **Comparable** - across universities, given differences in university context, and over time.
3. **Attributable** - ensuring costs are captured only to the extent that they are incurred as a result of a defined and in-scope activity.
4. **Actual** - in that the economic rather than the accounting measure of cost is of primary interest to the exercise.

The practical application of these principles necessitates an approach which:

- scrutinises existing information sources carefully
- applies common definitions while allowing for local context
- requires the application of standards and rules for apportioning shared costs in line with appropriate economic attribution
- sees iterative interaction through the course of the collection to support real time guidance and moderation.

Their application can be further understood with reference to two practical examples.

Example 1: Pro-rating common costs by a common cost driver

Using common cost drivers to allocate central costs is an example of applying the 'attributable' principle, whereby a common cost driver (or drivers) is chosen that allows systematic alignment of costs to specific teaching activities.

For example – IT systems and computer labs may be a central cost for the whole-of-institution, but clearly have a role in teaching and may not be equally shared or used by each teaching unit. Depending on the systems available, and a university's understanding of how to most reliably allocate costs to where they are ultimately incurred, one or multiple cost drivers may be used to partition this central cost (e.g. EFTSL, staff numbers, student login counts, etc.).

Example 2: Recognising scholarship activities that are required for teaching

The inclusion of 'scholarship' costs is another example of the 'attributable' principle, by recognising that activities such as presenting public lectures or keeping up to date with contemporary discipline knowledge is important and necessary for the delivery of teaching and learning by staff.²²

Noting that the breadth and depth of scholarship activities can vary by staff type and discipline, universities are required to consider the principle of attributable costs in identifying and defining costs of scholarship, as they necessarily relate to the delivery of teaching.

²² More detail on the types of activities that may be considered 'scholarship' is provided in Section 2.2 of the Guidelines.

Guidelines

Structure of the template

At a high level, the Transparent Costing Worksheet is structured by cost item and level of education (along rows), and by field of education (across columns). Data is collected for each combination of these three elements, which are described in detail below.

Levels of education

The levels of education to be reported separately are sub-bachelor, bachelor, and coursework postgraduate. These are defined in Table B.1. Only onshore enrolments are included in the scope of the data collection.

Table B.1: Levels of education

Level of education	Definition
Sub-bachelor	Sub-bachelor covers all courses delivered at the diploma, advanced diploma and associate degree level. Excludes non-award and enabling courses.
Bachelor	Bachelor covers all courses delivered at a Bachelor degree level. This includes Bachelor's Pass, Bachelor's Honours and Bachelor's Graduate Entry. Excludes non-award and enabling courses.
Postgraduate coursework	Postgraduate coursework includes all postgraduate degrees that are delivered predominantly through coursework (e.g. those courses for which research makes up less than two thirds of the student load as per the Commonwealth Scholarships Guidelines (Research) 2017), including Masters and coursework PhDs. Where a coursework postgraduate degree includes a research component, this should be included as postgraduate coursework. Excludes non-award and enabling courses.

The scope of the data collection includes all students in award courses at the sub-bachelor, bachelor and postgraduate coursework level including Commonwealth Supported Places, domestic fee-paying students and onshore international students. Student in non-award courses and enabling programs are not included within the scope of the data collection exercise.

Students who are enrolled in short-term coursework exchange programs are in scope. While a student is on exchange, some of their teaching costs are likely to be incurred by the institution they are doing their exchange at (i.e. the host institution), which will typically be overseas. As a result, a university may not face all the teaching costs for students who are on exchange and these should not be included in the exercise. However, a university will incur additional teaching costs for inbound exchange students – that is, students who come to a university for a short-term exchange program but who are based at other institutions.

In practice, the number of outbound exchange students may not always match the number of inbound exchange students. However, it is reasonable to include the costs of inbound exchange students in this exercise. Although only outbound students are included as reported EFTSL (and not inbound exchange students), the cost of teaching inbound exchange students reflects the costs of offering an exchange program for an institution's students and thus should be included in the costs of teaching and scholarship reported here.

Study abroad students are not included in the scope of the data collection as such students generally pay their tuition expenses directly to the institution they are studying with abroad.

Cost items

The cost items are distinguishable types of costs and have been chosen to reflect commonly understood categories of disaggregation. These cost types are:

- Total staff costs - employee benefits and on-costs (i.e. total wage bill)²³ – teaching and scholarship:
 - Academic staff costs attributable to teaching and scholarship
 - Casual academic staff costs attributable to teaching and scholarship
 - Non-academic staff costs attributable to teaching and scholarship.
- Non-staff costs attributable to teaching and learning:
 - Cost of materials, utilities, equipment
 - Expenses that relate to placements (optional)²⁴
 - Depreciation, amortisation, repairs, maintenance, borrowing, bad debts
 - Other non-staff expenses.

Some further cost measures are defined which relate to total costs across the institution (i.e. including research and non-teaching-related commercial activities) and total costs for non-teaching activities, to be used for the purposes of reconciliation with institution-wide financial reporting. These additional cost types are:

- Total staff costs - employee benefits and on-costs for staff excluding teaching and scholarship activities (e.g. research, community activities etc.)
- Total staff costs - employee benefits and on-costs for all staff (i.e. total wage bill)
- Total non-staff costs excluding teaching and scholarship activities (e.g. research, community activities etc.)
- Total non-staff costs for the whole institution.

It is not required that these costs be provided by field of education, but rather at the whole of institution level.

Three additional items are also separately identified below the main costing collection area of the template – ‘in-kind’ costs, ‘third-party and partnership’ costs and an optional ‘depreciation adjustment’. These items are collected to inform a broader picture of costs, but are not used in reconciliation with financial reporting. These three items are described in more detail in Section 0.

Fields of education

Fields of education are defined using 22 ASCED code groupings in 0. These fields of education have been chosen by the Department and are broadly consistent with those chosen in the previous 2016 exercise. The columns representing fields of education should be considered to be exhaustive, such that all courses and teaching activity are captured. A full six-digit concordance tab is also provided in the Transparent Costing Worksheet.

²³ Including termination payments.

²⁴ In cases where it is difficult to separately identify the cost of placements these can be appropriately recorded in other rows of the Transparent Costing Worksheet. For example under other non staff expenses, or, in the case of payroll costs for staff involved in supervising placements these costs can be included under staff costs.

Table B.2: Fields of education

Number	ASCED Code	Title
1	0101	Mathematical Science
2	0109901	Medical Science
3	01 – Other	Other Science
4	02	Information Technology
5	03	Engineering and Related Technology
6	04	Architecture and Building
7	0509	Environmental Science
8	05 – Other	Other Agriculture, Environmental and Related Studies
9	0601	Medical Studies
10	0603	Nursing
11	0607	Dental Studies
12	0611	Veterinary Studies
13	06 – Other	Other Health
14	07	Education
15	08	Management and Commerce
16	090701	Psychology*
17	091503 to 091519	Foreign Languages and Translating
18	09 – Other	Other Society and Culture
19	1007	Communication and Media Studies
20	10 – Other	Other Creative Arts
21	11	Food, Hospitality and Personal Services
22	12	Mixed Field Programmes

* This field is intended to represent all psychology, not just 'clinical psychology'.

The structure of the data collection template is not to be changed, however the Deloitte Access Economics team welcomes suggestions from universities regarding any potential refinements for future versions of the survey.

Which activities and costs are in-scope?

The focus of this research is to collect and analyse costs related to teaching and scholarship for 2018, such that only costs relevant to these activities should be included. Other university operations should be separated and excluded, such as costs related to research, community outreach and commercial activities (not related to teaching).

This study recognises that teaching requires some 'scholarship' activities to support teaching, i.e. activities that maintain and advance the knowledge of an academic discipline required for staff to deliver teaching and training.

The level of scholarship may vary across field of education, and may include activities such as:

- Keeping up-to-date with contemporary discipline knowledge

- Writing textbooks or newspaper articles
- Participating in conferences
- Delivering public lectures
- Participating in government inquiries, among other relevant activities.

Universities are required to proportionally separate time spent by staff on teaching and scholarship activities, from other non-teaching activities. Those staff who teach across multiple fields should have their costs appropriately partitioned across each of these fields based on staff time or alternatively EFTSL taught. Based on the approach agreed in the 2016 study, other areas of university activity that are included to the extent that they are related to delivery of teaching are:

- Student support and welfare systems
- Marketing related to teaching e.g. coursework student recruitment, or a reasonable proportion of brand marketing
- Central administration costs that relate to university operations.

Costs for low EFTSL

Costing data will be collected for 22 fields of education by level of education, i.e. Management and Commerce at the bachelor level.

All field-level combinations are to be reported in the template. Minimum EFTSL thresholds will be applied in the reporting and analysis of data to exclude low EFTSL counts but institutions are asked to report all data as per the template even for field-level combinations with minimal EFTSL.

Irregular costs

Additional costs may be incurred in a given year, for example, to support the development of new courses, or due to organisational restructures. These can be included in the template, but the irregular nature of these costs should be noted in the accompanying Supporting Statement.

Another example might arise where a given FOE is located in a relatively expensive building on campus or where an expanding university footprint results in the lease of additional space at an elevated cost compared to existing campus space. Deloitte Access Economics recognises this may lead to higher costs for those FOEs which happen to be located in more expensive buildings. This cost differential may not necessarily reflect differences in the cost of teaching for that particular FOE.

Given the objective of the exercise is to capture the costs actually incurred by each FOE, it is advised that such irregular costs be included and allocated to the FOE in question. Universities can note in the Supporting Statement if this approach leads to a notable increase in costs for a specific FOE or group of FOEs.

Which costs and activities should be excluded?

All costs and activities not directly related to 'teaching' are considered out-of-scope and excluded from this analysis based on the scope for the exercise established by the Department. A non-exhaustive list of activities and costs which should be excluded – based on the agreed approach in the 2016 exercise – is provided below:

- Non-award program and enabling courses, and any education not reported to the Department as EFTSL, examples including:
 - English language commercial courses
 - Open Academies/continuing education businesses for a Conservatorium
 - Rural Schools for Medicine/Dentistry funded by State Governments
- Off-shore activity and international campuses
- Most commercial activities, including investments and investment funds management business (see further clarification in relation to commercial activities below)
- Student and staff support services, provided on the basis of a fee for service or co-payment, for example childcare, health services (including IVF clinics), and student accommodation services (further clarification is provided below on services that are included to the extent that they contribute to education of students)

- Research activities, including research training and HDR supervision and expenditure related to research only staff
- Marketing not related to coursework student recruitment
- Philanthropic and community engagement activities
- All activities and staff that are for VET-training or administration (where that training and administration does not overlap with higher education activity).

Other university activities (including commercial activities) which may have a teaching component

Many university activities have multiple purposes, where one of those is to support teaching. For example, some commercial activities may also serve to provide teaching or placements to students.

For activities with multiple purposes, universities should include an estimate of the portion of costs that is associated with teaching and report this in the template, while excluding any other costs unrelated to teaching.

The aim is to capture the costs associated with teaching activities and to separate these from other costs associated with running other university activities (commercial or otherwise) that are not associated with teaching.

Since the focus is on the costs of teaching and scholarship, there is no requirement to offset these costs with revenue received. Commercial activities that have no role in teaching students are excluded from the scope of the data collection.

Examples of other university activities (including commercial activities) in which the costs of teaching may be included are:

- Veterinary teaching hospitals used for training veterinary students
- Physio clinics used for training physiotherapy students
- Farms used for training agriculture students
- Performing Arts theatres for training theatre and performance students
- Reciprocal arrangements in medical hospitals or medical clinics where services are provided in return for teaching services from non-University staff, e.g. professional administrative staff provided in return for 'no cost teaching' from hospital staff.

Vocational Education and Training (VET) delivered by Dual-sector universities

Universities that also deliver VET-training should not include any enrolment activity in VET courses. All costs for VET-training or administration (where that training and administration does not overlap with higher education activity) are explicitly excluded. However, all centralised administration costs associated with teaching of higher education students should be included.

Additional collection items

Below the main data collection area of the Transparent Costing Worksheet, there are three additional items. These items are collected to inform a broader picture of costs, but are not used in reconciliation with financial reporting. These items include: (1) Third-party and partnership costs, (2) In-kind costs and (3) the Optional depreciation adjustment.

1. Third-party and partnership arrangement costs

All costs to the institution related to the delivery of teaching by any partner organisations (for EFTSL applicable to the institution) are to be included, as well as any administrative and management costs associated with the partnership agreement.

The key principle in assigning partnership costs is that all teaching costs attributable to EFTSL attributed to the university (or reasonable proxies thereof) should be included. If a partnership arrangement involves, for example, the sharing of revenue with partner institutions, the revenue (foregone by the university) which accrues to the partner for the purposes of teaching can be

included. This represents a reasonable proxy for the teaching costs that would otherwise be incurred by the university if it had taught these students itself.²⁵

However, costs which are incurred (or estimated to have been incurred) by a partner organisation may need to be recorded in a different part of the Transparent Costing Worksheet to costs incurred by a university depending on the specific arrangement involved.

Where universities incur teaching costs in relation to a partnership agreement which is recorded in their statutory accounts, these costs are to be included in the main cost collection area of the Transparent Costing Worksheet (i.e. in the first 70 rows of the worksheet). This could include teaching, administration or management costs incurred by the university itself or payments to third parties for teaching activities. In this case there is no need to separately include these costs in relation to 'Third-party and partnership costs' in rows 85 to 88 of the Transparent Costing Worksheet.

In cases where costs related to teaching are incurred by a partner organisation, and these costs are not reflected in a university's financial statement (e.g. where revenue is shared with a partner to cover these teaching costs), the revenue received by the partner should be recorded in rows 85 to 88 of the Transparent Costing Worksheet. The relevant rows are labelled 'Third-party and partnership costs'. This revenue is used to proxy the cost of teaching these students if this teaching had been done by the university rather than a third-party. Any costs included here should not appear in a university's statutory accounts.

While each university relationship with a partner organisation may vary, there are likely to be some common types of arrangements. For example:

- A university may collect all revenue (and report the EFTSL), while the partner institution delivers all teaching. The partner receives some share of the revenue collected as payment. In the likely absence of cost data for the partner institution, the revenue shared is likely to be the most suitable measure of the cost of teaching, and should be used as a proxy measure of the actual cost of teaching.
 - The revenue shared should be included in the separate line item for third-party and partnership costs in rows 85 to 88 of the worksheet (assuming it is not captured as a cost to the university in its statutory accounts).
- A university may collect all revenue (and report the EFTSL), but pay a partner institution to undertake some teaching with these payments recorded in a university's statutory accounts. In this case, payments to the partner institution should be recorded in the main part of the Transparent Costing Worksheet (most likely under 'Other non-staff payments' in rows 56 to 59) and no costs should be included under 'Third-party and partnership costs' in rows 85 to 88.
- The partner may collect all the revenue, deliver all the teaching and distribute some share of the revenue to the university. The revenue share of the partner, as a proxy measure of the actual cost of teaching, should be included in the separate line item for 'Third-party and partnership costs' in rows 85 to 88 of the worksheet.

In some instances, the EFTSL may be recorded to the partner institution (and not the host university). As the EFTSL is not attributable, no costs of teaching are to be included.

2. Indirect or in-kind costs of teaching (optional)

In some instances, teaching may be delivered by another institution, or using another institution's staff or other resources. The university may provide certain resources in-kind in relation to this teaching. Such in-kind contributions may include use of university buildings, research and library facilities or other resources.

Universities may include a reasonable estimate of their in-kind costs such as the building and facility utilisation, staff time or other resources that they provide to the other institution. Only the

²⁵ Since the focus is on the teaching costs that a university would otherwise have incurred, whether or not the partner makes a margin on delivery of its teaching services is not a relevant consideration in completing the Transparent Costing Worksheet.

in-kind costs to the university in the teaching arrangement should be included, and not any costs borne by the other institution.

These in-kind costs will need to be converted to a dollar figure and included in the template. The high-level process for calculating in-kind costs and any relevant considerations in interpreting these figures should be included in the Supporting Statement.

Deloitte Access Economics recognises that in some cases in-kind costs may be difficult or burdensome for universities to estimate or may be relatively immaterial. For this reason, the inclusion of in-kind costs is optional for universities.

The case study below provides an example of some of the potential in-kind costs that may be incurred by a university.

Case study on estimating in-kind costs

One university noted that the direct and indirect costs of clinical education and training are incurred through arrangements that vary between disciplines and jurisdictions by affiliates employed by third-party partners, such as local health districts, private and community health practices, schools, veterinary practices and other organisations.

While the university does not incur direct salary costs for student clinical placements in many disciplines, it regularly invests in research infrastructure and equipment located in health services or research institutes, the use of which is shared by hospital, university and institute staff, affiliates and students. For example, the Health Faculty has a range of arrangements in place to share the costs of clinical and research academics with partner local health districts and research institutes. The full costs of these staff, who contribute to the university's teaching activities would be excluded or not fully captured above the line in the Transparent Costing Worksheet.

To account for the reciprocal services provided by the university in return for teaching services provided by unpaid affiliates, the university can seek to include an estimate of the in-kind costs that it incurs as part of its relationship with unpaid affiliates who provide teaching to a university's students.

This could include calculating the value of:

- Library, ICT and research support services provided to affiliates, based on their relative usage of these services.
- Capital contributions the university makes towards collaborative teaching, research and service delivery with partners- recognising that only those contributions made in exchange for teaching services should be included not contributions purely for research purposes.

In practice such relationships also provide other value to partner organisations such as the value of being associated with the university's brand, although these may be more difficult to quantify.

3. Capital replacement costs and the optional depreciation adjustment

Costs associated with asset and capital management including depreciation, amortisation, repairs and maintenance, borrowing and bad debts should be included in the template, as reflected in universities' financial reporting.

It is noted that future upgrades, refurbishment, or replacement of an asset may be needed, due to changes in function, new pedagogy, technological advancement or changes in legal or regulatory requirements. This provisioning for future capital expenditure via retained operating margins, borrowing, and/or other means is an important consideration for universities. This future provisioning should nonetheless be kept separate from current depreciation and asset costs in the template.

Universities are able to provide a description of their processes and budget for sufficient future investment as part of the Supporting Statement that accompanies the Transparent Costing Worksheet.

Optional depreciation adjustment

Universities employ a wide range of approaches to value the depreciation of buildings and other infrastructure assets. Some universities regularly re-value assets, with use of actuarial assessments to adjust buildings to fair value, while others use historical book value. Similarly, it is common for universities to adopt policies that assume straight-line depreciation, which may differ from actual real estate usage. The latter approach produces consistent results from year-to-year, but may not accurately measure the decline in value associated with teaching activities.

Depreciation costs, as they appear in a universities' income and expense statements, only account for the cost associated with the decline in value of an asset over its 'useful life'. Accounting standards often assume that assets have the same defined and consistent useful life, resulting in a constant rate of depreciation expenses. However, universities may continue teaching activities

using assets that are beyond their accounting useful life. For example, if the useful life of a building is assumed to be 50 years, buildings older than 50 years may be statutorily depreciated at the rate of zero per cent, despite continuing to be actively used for teaching activities.

In cases where a university has fully depreciated assets that are still in use or where historical book value differs from the cost of replacing a building in its current condition, depreciation may not accurately reflect the full economic costs of using these buildings for teaching activities. This may also apply to assets other than buildings such as, plant and equipment assets.

To better understand the extent to which current measures of depreciation are impacted by these issues, universities are given the option to include a depreciation adjustment in rows 90 to 93 of the Transparent Costing Worksheet (i.e. below the line). This is intended for universities who either have fully depreciated assets that are still in use or who do not conduct regular revaluations of their assets for the purpose of calculating depreciation. Universities that conduct regular revaluations or actuarial assessments and do not have fully depreciated assets which are used for teaching purposes will not need to make this adjustment.

An example of this adjustment (based on the methodology detailed in section 3.2 of the 2016 UK Transparent Approach to Costing (TRAC) v2.1 Guidance) is included below and in the Depreciation adjustment tab of the Transparent Costing Worksheet.

The net infrastructure adjustment can then be included in rows 90 to 93 of the Transparent Costing Worksheet. Only the proportion attributable to teaching and scholarship should be included. Universities should seek to allocate this adjustment to each Field of Education and level of study.

Optional depreciation adjustment

Universities can calculate the differential between the fair value of buildings or facilities (measured from either the insurance replacement value (IRV) or actuarial assessments) against recorded statutory depreciation for these assets.

Calculation of depreciation adjustment (if applicable)

		\$m	
Gross book value of assets (i.e. before deduction of accumulated depreciation) as reported in financial statements, for buildings			
2017		962.883	
2018		1005.031	
Average		983.957	A
Depreciation for 2018 for buildings, reported in financial statements, less any amounts relating to impairment		22.092	B
Calculated depreciation rate			
Historic buildings depreciation rate (where applicable)	Institution to select the rate	2.2%	C1
		0.50%	C2
Insurance value on buildings			
Non-historic buildings		1536.760	D1
Historic buildings		627.130	D2
Gross infrastructure adjustment			
Non-historic buildings		34.504	C1*D1
Historic buildings		3.136	C2*D2
Total gross infrastructure adjustment		37.639	E
less depreciation		-22.092	B
less any long-term maintenance leading to a significant upgrade to functionality		-0.792	F
Net infrastructure adjustment (to be included in Costing Worksheet)		14.755	E+B+F

Staff costs: Allocating between teaching, scholarship and research

To estimate the costs of teaching, only staffing costs related to 'teaching and scholarship' are to be included in the data collection. Universities will have different methods of allocating staff activities and costs between teaching, scholarship and research (and others). Common methods include:

- Activity-based costing tools
- Detailed timesheets
- Workload models
- Enterprise Bargaining Agreements and other employment contracts that dictate specific allocations of time.

Universities should use the most rigorous and consistent method of allocating staff activities available to them to reflect the true time spent on teaching and scholarship. Where detailed time allocation data is not available, reasonable assumptions can be used.

If administrative costs would be incurred even in the absence of other activities, such as research or commercial activities, they should be included in teaching costs.

Non-staff costs: allocating assets and facilities costs across different fields of education

Similar to staffing costs, only the proportion of asset and facilities costs that relate to delivering teaching should be included in the data collection.

In the 2016 exercise, universities used various approaches to allocate non-salary costs to different FOEs. The approaches tended to be based on the drivers that were judged to be most appropriate for each cost category. Some of the common drivers used included:

- floor space – used to apportion building (depreciation or maintenance) costs across FOEs
- FTEs – used to apportion staff support services (such as a university’s finance function)
- EFTSL – used to apportion non-salary costs driven by students (such as student support services)
- enrolment headcount – used to apportion those costs driven by student numbers rather than load intensity (such as IT or enrolment costs).

Other potential drivers which could be used include: whether the student is a domestic or international student; level of study; delivery mode and number of staff by type. Deloitte Access Economics will discuss the approach used with individual institutions to ensure consistency across the data collection exercise.

Instances of underutilisation attributable to teaching can be apportioned centrally. These central costs can then be allocated equally across all university EFTSL.

EFTSL data will be pre-populated in the data collection template at the beginning of the data collection process for participating universities in 2018.

A.1.1. Trimesters and summer semesters

Many universities offer summer subjects or a trimester option for students. For subjects/units that have census dates in the same calendar year, e.g. 2017, the EFTSL for the subjects/units will be recorded for 2017, even if the subjects/units are delivered across 2 calendar years – 2017 and 2018.

This means there may be a misalignment between EFTSL data and cost data for a given calendar year. Universities should apportion the costs for these units consistently across different collection years and if EFTSL for these units differ significantly year-on-year, it should be outlined in the Supporting Statement.

Reconciliation

Total expenses reported in the template (excluding in-kind costs and third-party and partnership costs) should be reconciled to statutory accounts, in particular Total Expenses from Continuing Operations (including deferred superannuation). This total expenses figure will be pre-populated for universities using data provided to the Department.²⁶

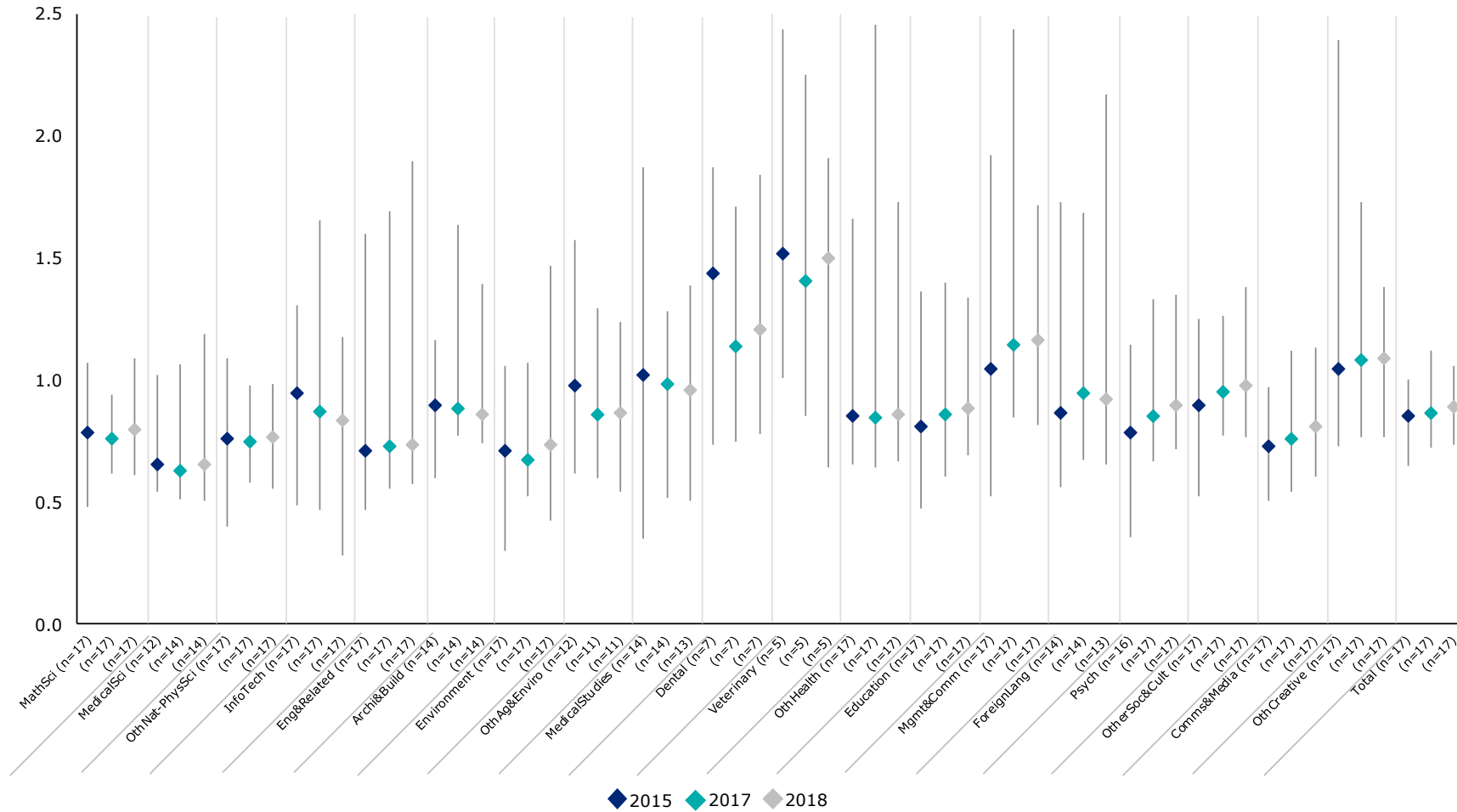
When reconciling the costs of teaching and scholarship with total expenses, the difference between total expenses and the costs of teaching and scholarship will include costs associated with activities that are outside the scope of this project such as research, community activities and costs for non-award students, enabling programs, higher degree research students and offshore enrolments.

Noting the guiding principle regarding a focus on actual economic costs (as opposed to accounting costs), there may be some additional variations in reported costs. Any differences can be explained in the Supporting Statement provided by the university.

²⁶ For the 2019 data collection exercise, financial data will not be available for all universities at the start of the data collection process. To avoid delay, Deloitte Access Economics will send a version of the Transparent Costing Worksheet without pre-filled financial data in the first instance. A version of the Transparent Costing Worksheet with this data pre-populated will be sent to universities once it is available from the Department.

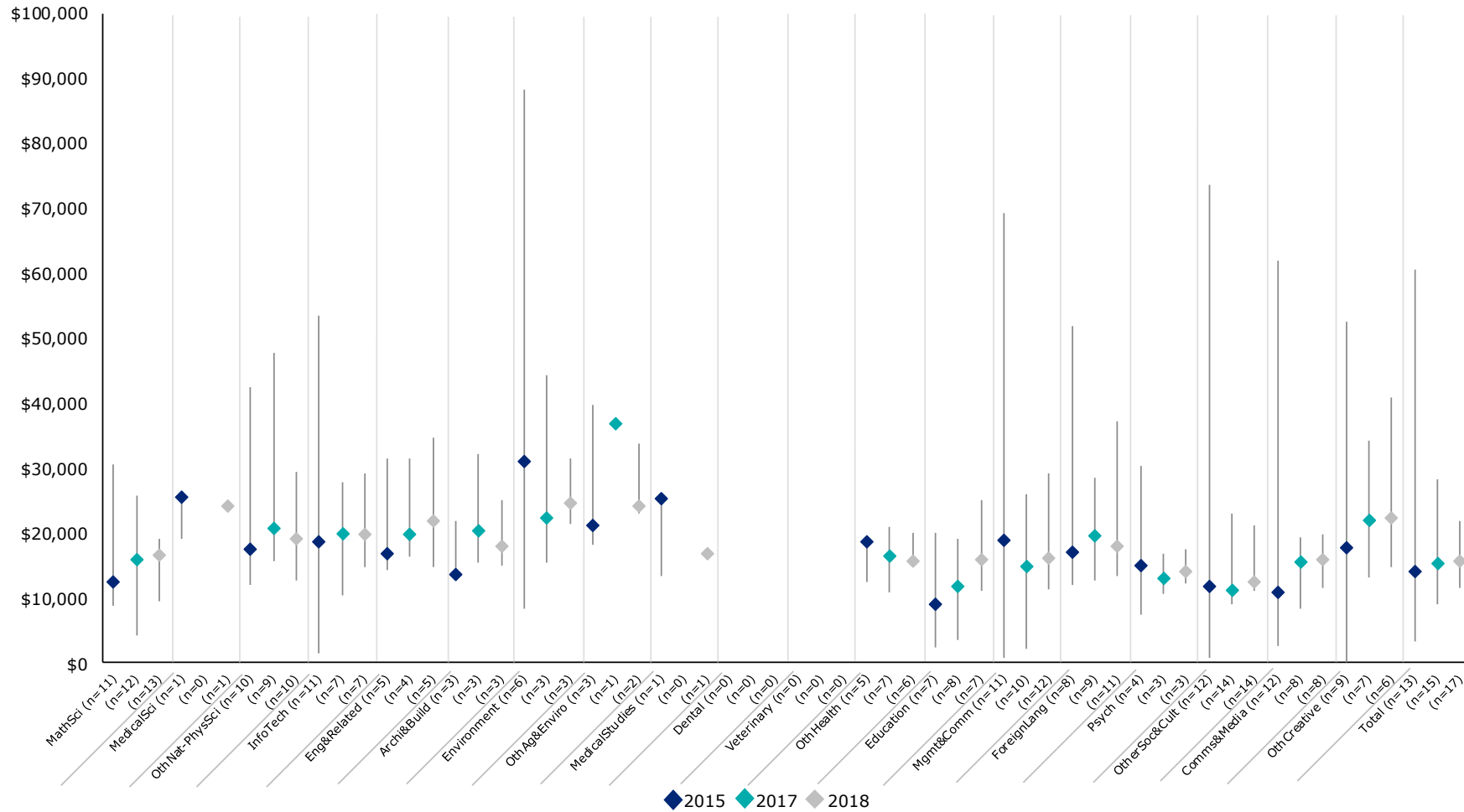
Appendix C: Comparison to 2015 data

Chart C.1: Distribution of the average unit costs to base funding ratio, 2015, 2017 and 2018, (2015 common sample (17 universities))



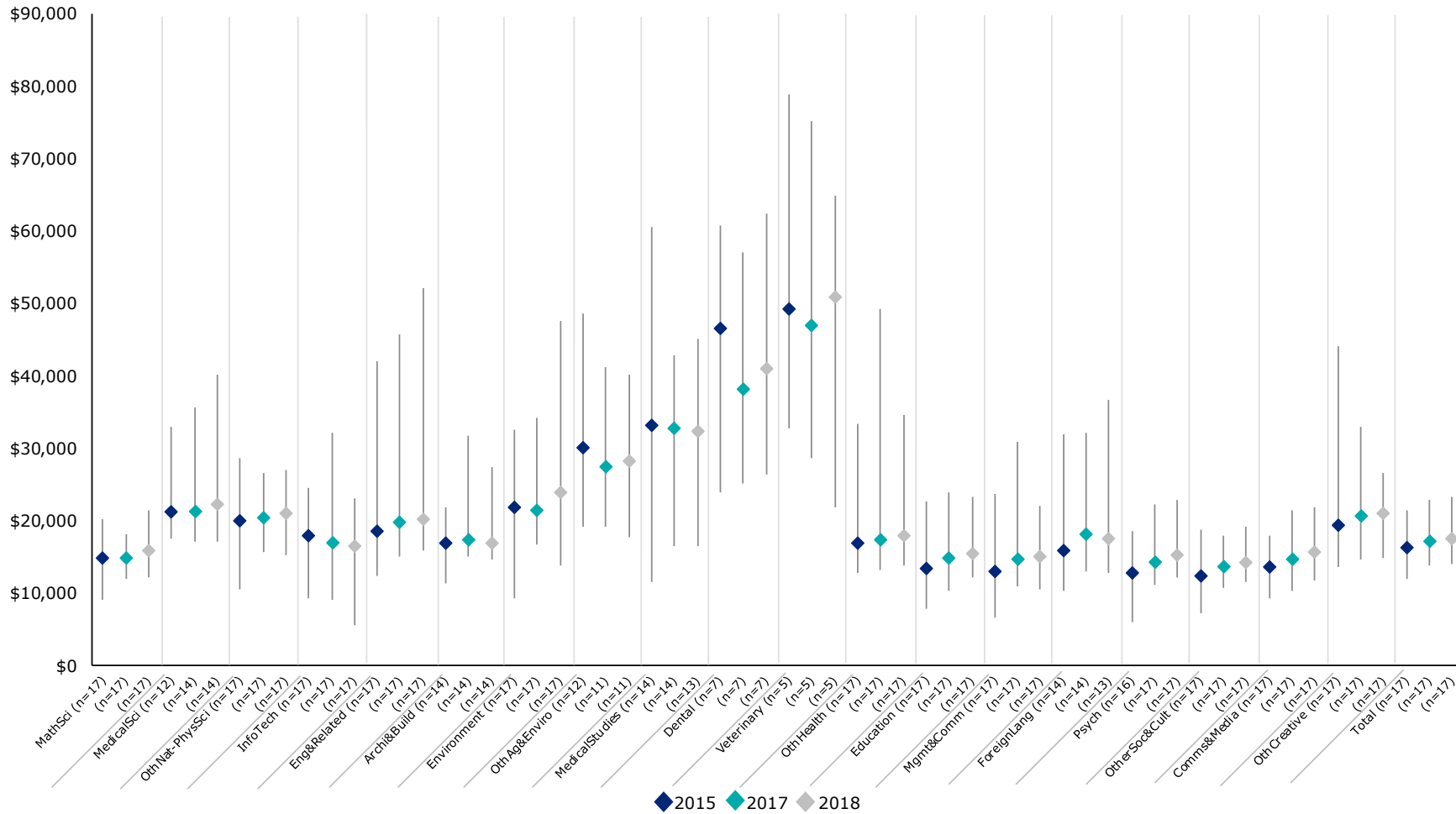
Note: Marker at average value, lines represent range from minimum to maximum. Notably, these results only include universities that provided data for 2015, 2017 and 2018.

Chart C.2: Comparing costs between 2015 and 2018 for sub-bachelor (2015 common sample (17 universities))



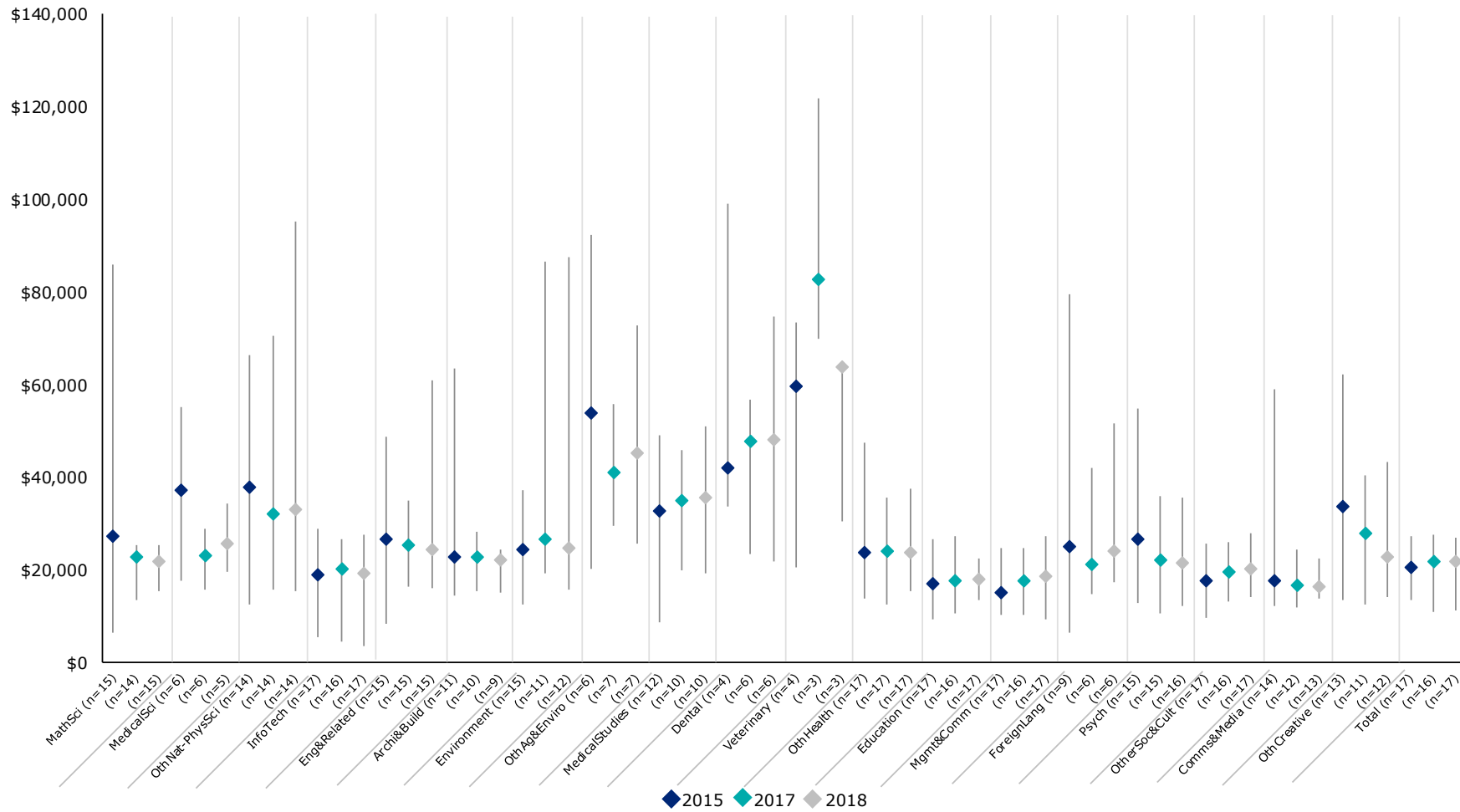
Note: For comparability, only the 17 universities that provided data for 2015, 2017 and 2018 are included. Markers are at mean. Nursing is included in Other – Health.

Chart C.3: Comparing costs between 2015 and 2018 for bachelor (2015 common sample (17 universities))



Note: For comparability, only the 17 universities that provided data for 2015, 2017 and 2018 are included. Markers are at mean. Nursing is included in Other – Health.

Chart C.4: Comparing costs between 2015 and 2018 for postgraduate (2015 common sample (17 universities))



Note: For comparability, only the 17 universities that provided data for 2015, 2017 and 2018 are included. Markers are at mean. Nursing is included in Other – Health.

Limitation of our work

General use restriction

This report is prepared solely for the use of the Australian Government Department of Education. This report is not intended to and should not be used or relied upon by anyone else and we accept no duty of care to any other person or entity. The report has been prepared for the purpose of assessing the cost of teaching and scholarship in the higher education sector. You should not refer to or use our name or the advice for any other purpose.



Deloitte Access Economics

ACN: 149 633 116
8 Brindabella Circuit
Brindabella Business Park
Canberra Airport ACT 2609
Tel: +61 2 6263 7000
Fax: +61 2 6263 7004

Deloitte Access Economics is Australia's pre-eminent economics advisory practice and a member of Deloitte's global economics group. For more information, please visit our website

www.deloitte.com/au/deloitte-access-economics

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/au/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms.

The entity named herein is a legally separate and independent entity. In providing this document, the author only acts in the named capacity and does not act in any other capacity. Nothing in this document, nor any related attachments or communications or services, have any capacity to bind any other entity under the 'Deloitte' network of member firms (including those operating in Australia).

About Deloitte

Deloitte provides audit, tax, consulting, and financial advisory services to public and private clients spanning multiple industries. With a globally connected network of member firms in more than 150 countries, Deloitte brings world-class capabilities and high-quality service to clients, delivering the insights they need to address their most complex business challenges. Deloitte's approximately 244,000 professionals are committed to becoming the standard of excellence.

About Deloitte Australia

In Australia, the member firm is the Australian partnership of Deloitte Touche Tohmatsu. As one of Australia's leading professional services firms, Deloitte Touche Tohmatsu and its affiliates provide audit, tax, consulting, and financial advisory services through approximately 7,000 people across the country. Focused on the creation of value and growth, and known as an employer of choice for innovative human resources programs, we are dedicated to helping our clients and our people excel. For more information, please visit our web site at www.deloitte.com.au.

Liability limited by a scheme approved under Professional Standards Legislation.

Member of Deloitte Touche Tohmatsu Limited

© 2019 Deloitte Access Economics Pty Ltd