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## Mapping Australian higher education 2018

Andrew Norton and Ittima Cherastidtham

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## Overview

For people new to higher education and higher education policy, the field can seem bewildering. Statistics on enrolments and performance are surprisingly difficult to find and interpret. Funding policies are complex and often reflect history rather than clear objectives or principles.

*Mapping Australian higher education 2018*, the fifth report in a series, puts key facts and their context in one document. Several major themes emerge.

Health is a key strength of Australia's higher education system. For domestic students, enrolments are growing in health-related courses more than in any other major field. Graduates from health courses have high rates of employment and enjoy increased income, at a time when graduates often earn less than they did a decade ago. Medical research receives a disproportionate share of all research funding.

Australian higher education is increasingly international. Overseas student enrolments are booming. International student fees are the single biggest source of university revenue. Profits from international students finance a substantial proportion of Australian university research. This research is itself a global enterprise, with thousands of international academic collaboration agreements and more than half of scientific articles by Australian academics having an international co-author. Australian universities have improved their position in international university rankings.

Changes to funding policy mean that the Commonwealth Government is becoming more interventionist while providing a decreasing share

of all university revenue. In 2018, the Commonwealth Government will spend less in real terms on tuition subsidies than it did in 2017, the first annual drop since 2003. Just over a third of research expenditure is financed by Commonwealth research grants.

Despite domestic commencing bachelor-degree enrolments growing slowly since 2015, higher education participation reached record levels. In 2016, 41 per cent of Australian 19-year-olds were enrolled in higher education institutions. The number is much higher for young people whose parents work in professional occupations or speak an Asian language at home. Recent enrolment patterns and policy changes all suggest that, after a decade of major growth, domestic higher education participation will plateau over the next few years.

Although new graduate employment has improved since its 2014 low point, the labour market is still tough for younger graduates. Census data shows that male bachelor degree holders aged 25 to 34 earned less in 2016 than a decade earlier. The reverse was true for 25 to 34-year-old women with bachelor degrees: their income increased. A major reason for this is greater labour force participation by women with children.

Apart from graduate outcomes, the last ten years have been successful for Australian higher education. Student numbers, research output and sector revenue all grew significantly. Student satisfaction and research performance improved. But now, apart from international students, most indicators are stable. After a decade of rapid change, Australian higher education is in a period of consolidation.

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## Introduction

*Mapping Australian higher education 2018* provides an overview of higher education policy and trends. Since its first edition in early 2012, the report has established itself as a widely used one-stop source of information on higher education.

Chapter 1 explains **how higher education is defined** in Australia, the different types of higher education provider, the various types of qualification, and what makes universities distinctive among higher education providers.

Chapter 2 reports on **student trends**, including enrolment numbers, courses chosen, and the mix of students on campus. It also discusses how students enter the higher education system.

Chapter 3 examines the **student experience**, including subject fail rates and satisfaction with teaching.

Chapter 4 looks at the **higher education workforce**, including why people become academics, their employment arrangements, and their pay.

Chapter 5 looks at **research in Australian universities**, including what topics are researched and research outputs.

Chapter 6 provides information on **how higher education is funded**, including overall levels of funding, the income-contingent HELP student loan scheme, and research funding.

Chapter 7 outlines how **per student funding levels** are determined, and **how student places are distributed** among higher education providers.

Chapter 8 describes the expanding **scope of the Commonwealth Government** in higher education, the key government departments and the higher education interest groups.

Chapter 9 examines **higher education's benefits to the public and employers**, including whether higher education graduates meet employment needs, the quality of university research, and public satisfaction with Australian universities.

Chapter 10 reports on **graduate employment and income**, showing differences by discipline, age and gender.



## 1 Higher education providers

The defining feature of a higher education provider is the legal power to issue qualifications, ranging from a diploma to a PhD. All providers must be registered with the Tertiary Education Quality and Standards Agency.

Most higher education students attend universities. But Australia also has 127 non-university higher education providers, which are a mix of for-profit and not-for-profit institutions, and generally serve specialised markets such as one field of education, occupation, qualification level or type of student. Most non-university higher education providers do not conduct research.

For universities, research is a legal requirement. Universities usually offer courses across a wide range of disciplines, and at all higher education qualification levels. Academic freedom is a strong part of university culture, although its boundaries are debated. Universities accept broad social responsibilities, to their students and the community.

Higher education providers are supported by a range of higher education service providers, which include the tertiary admissions centres that manage student applications, providers of educational technology, and companies that teach and tutor students on behalf of universities.

### 1.1 What is higher education?

For many people in Australia, ‘higher education’ and ‘universities’ are synonyms. But universities are a particular kind of higher education institution. While universities educate most higher education students, they are a minority of higher education providers in Australia – 42 of the 169 operating in mid-2018. This includes 40 universities, one

specialist university and one overseas university.<sup>1</sup> The other providers are colleges, institutes, and schools that are authorised to offer higher education qualifications. They are often known as NUHEPs – non-university higher education providers.

Before offering higher education qualifications, higher education institutions must be registered by the Tertiary Education Quality and Standards Agency (TEQSA – discussed in more detail in Section 8.2.3). TEQSA ensures that all institutions meet conditions set by government. Institutions are expected to support free intellectual inquiry, offer teaching and learning that engages with advanced knowledge and inquiry, employ academic staff who are active in scholarship, and issue qualifications that comply with the Australian Qualifications Framework (AQF).<sup>2</sup>

The power to award specific types of qualifications is the most important defining feature of a higher education provider. Free intellectual inquiry, engagement with advanced knowledge, and scholarship all occur outside as well as within the higher education sector. For these aspects of higher education no government permission is required: the market of ideas assesses value. It is the licence to issue AQF-recognised higher education qualifications, to certify individuals as having acquired knowledge and skills, that makes higher education providers distinctive.

1. TEQSA (2018a). Appendices A and B of this document have a full list of higher education providers. Two overseas universities are registered, but only one is operating, Carnegie Mellon University.
2. And a range of other requirements around governance and administration. Overseas universities can award their home country degrees: Department of Education and Training (2015a).

Qualifications are differentiated according to the knowledge and skills required for their successful completion. Table 1.1 shows the AQF qualifications, ranked from 1 to 10.<sup>3</sup> Generally, certificates I to IV (levels 1 to 4) are classified as vocational, while associate degrees through to doctoral degrees (levels 6 to 10) are classified as higher education. Level 5 diplomas and level 6 advanced diplomas can be vocational or higher education, though in practice most are taught in the vocational education sector. Although level 8 graduate certificates and diplomas have been removed from the AQF as vocational qualifications, some are still available. But most students at this level are in higher education.<sup>4</sup>

Key differences between the qualifications include the level of theoretical knowledge required, and the student's capacity to analyse information, make independent judgements and devise solutions to problems. Certificate I and II holders are expected to apply technical skills to routine tasks or predictable problems, while doctoral degree graduates are expected to be able to create new knowledge. In the middle classifications there are sometimes subtle distinctions. A certificate IV holder is expected to analyse information to complete a range of activities, while a bachelor degree holder is expected to analyse and evaluate the information. A certificate IV holder is expected to provide solutions to sometimes complex problems, while a bachelor degree holder is expected to generate solutions to problems that are sometimes complex and unpredictable. The AQF encourages pathways between the qualifications, including credit towards bachelor degrees for time spent acquiring diplomas, advanced diplomas, and associate degrees.

3. A review of the AQF commenced in 2018. For an overview of the issues see PhillipsKPA (2018).

4. Department of Education and Training (2017a, table 2.3); and NCVET (2018, table 7).

**Table 1.1: Australian Qualifications Framework**

Level	Qualification
1	Certificate I
2	Certificate II
3	Certificate III
4	Certificate IV
5	Diploma
6	Advanced Diploma; Associate Degree
7	Bachelor Degree
8	Bachelor Honours Degree; Graduate Certificate; Graduate Diploma
9	Masters Degree
10	Doctoral Degree

Source: AQF (2013).

Since there is a continuum of knowledge and skills rather than sharp dividing lines between the AQF levels, the distinctions between vocational and higher education are partly a matter of convention. The terminology should not be taken to imply that one sector is concerned with the world of work and the other is not. Most higher education students are seeking vocational outcomes. When the Australian Bureau of Statistics asked people studying qualifications in the past year about their main reason for undertaking learning, 83 per cent of those enrolled in higher education gave a job-related reason. For people in certificate III and IV qualifications, 88 per cent gave a job-related reason.<sup>5</sup> Vocational and higher education providers also overlap. Public-sector vocational education providers, the TAFEs, have added higher education qualifications to their course programs; 11 had done so as of mid-2018.<sup>6</sup> Especially in Victoria, some universities are 'dual sector', with a TAFE as well. Other universities offer vocational

5. Calculated from ABS (2018a).

6. Not counting dual sector providers with higher education as a principal purpose.

education courses directly or through subsidiaries. In the private sector, many institutions offer both higher education and vocational education courses. All up, 82 organisations provide both higher and vocational education courses.<sup>7</sup>

## 1.2 Non-university higher education providers

Non-university higher education providers (NUHEPs) are a significant part of Australian higher education. In August 2018, 127 NUHEPs (listed in Appendix A and Appendix B) were registered with TEQSA.<sup>8</sup> Some are public institutions: the Australian Film, Television and Radio School, the Australian Institute of Police Management, and the various TAFEs now offering degrees, for example. Some are owned by public universities. But most (105) are clearly in the private sector. That number has fallen slightly in recent years, but is still well up on the 78 private NUHEPs in 1999.<sup>9</sup>

Although NUHEP numbers have expanded over the past 20 years, the provider count is not straightforward. Some providers have multiple trading names, so there are more than 127 brands in the market. But some separately registered providers have common owners, so the number of players in the industry is less than 127. For example, Navitas Limited owns or partly owns 12 NUHEPs.

The private NUHEPs are a mix of not-for-profit and for-profit providers. In 2016, TEQSA identified 54 NUHEPs as not-for-profit and 65 as for-profit.<sup>10</sup> As of July 2018, 41 NUHEPs were registered charities with the

Australian Charities and Not-for-profits Commission (ACNC).<sup>11</sup> NUHEP finances are discussed in Section 6.6.

We cannot say exactly how many students are taught in NUHEPs. Where public universities outsource teaching (Section 1.4) the students are counted in the university rather than the teaching institution. With this caveat, in 2016 NUHEPs enrolled nearly 81,000 full-time-equivalent students.<sup>12</sup> It is a big increase on slightly less than 15,000 full-time-equivalent students in 1999, but only an 8 per cent market share (see Section 2.2 for more detail on enrolments).

Most NUHEPs are specialised compared to universities (discussed in Section 1.3). Usually, teaching is their only major education function, with about half (64) offering vocational as well as higher education courses. Only one NUHEP offers the full range of higher education AQF qualifications from a diploma to a PhD, and many offer only one or two of the six higher education qualification levels.

Fifteen pathway colleges specialise in diploma-level courses. Their purpose is to prepare students for entry into the second year of a university course. Typically, they have a relationship with a specific university, and the diploma curriculum matches that taught in the target university's first year. For example, students who successfully complete a Diploma of Business at Deakin College can enter the second year of a Deakin University Bachelor of Business.

Other institutions offer only postgraduate courses, often serving specific occupations with professional admission or development courses. Fourteen NUHEPs are in this category. For example, the College of Law offers entirely postgraduate courses as it prepares law graduates for practice or gives lawyers additional specialist skills.

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7. Based on the training.gov.au website and TEQSA's National Register of Higher Education Providers: TEQSA (2018a).

8. Based on TEQSA's National Register of Higher Education Providers: TEQSA (ibid.).

9. L. Watson (2000). There is also significant turnover in NUHEPs, including closures, mergers and takeovers.

10. TEQSA (2018b, p. 6). The not-for-profit count includes subsidiaries of public universities and government-owned NUHEPs other than TAFEs.

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11. ACNC (2018). To be registered, higher education providers must have a charitable purpose in the public benefit. 'Advancing education' is a legislated charitable purpose: *Charities Act 2013*, division 2.

12. TEQSA (2018b, p. 12).

Many other NUHEPs include a specific field of study, industry or occupation in their title, for example: Kaplan Business School, International College of Hotel Management, and the Australian College of Nursing. Subject specialisation can build provider reputations in niche areas.

NUHEPs offer more courses in business than any other field. These include some delivered by professional associations such as Chartered Accountants Australia and New Zealand. There are also a significant number (19) of institutions with a religious affiliation. Some are theological colleges, but others offer a wider range of courses.

Health, and particularly alternative health, is also a common field in the non-university higher education sector. Nineteen providers have a health-related speciality. Another 16 colleges specialise in various kinds of creative arts.

Some NUHEPs are primarily focused on the international student market. Twenty-six NUHEPs with published enrolment data report that two-thirds or more of their students are from overseas, and another ten primarily or exclusively market to international students. But 37 NUHEPs take domestic students only.<sup>13</sup>

In most cases, TEQSA accredits NUHEP courses.<sup>14</sup> The accreditation process includes examining course content, student admission criteria, assessment methods, and staff qualifications. NUHEPs with appropriate quality assurance systems and a track record of re-accreditation can become self-accrediting – a legal right to approve their own courses. However, most NUHEPs are not self-accrediting.<sup>15</sup>

On top of these licence-to-operate requirements, some NUHEPs seek other third-party approval or endorsement of their courses. For

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13. To take international students, higher education providers must be registered on the Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS). The 37 are not registered.

14. TEQSA (2017a).

15. The 12 self-accrediting NUHEPs are noted in Appendix A.

example, NUHEPs offering accounting courses have them recognised by CPA Australia, so their graduates can become members of that professional association. Some courses at the Australian College of Applied Psychology are approved by the Australian Psychology Accreditation Council, which also registers psychologists practising in Australia.

### 1.3 What is distinctive about universities?

‘University’ is a regulated term in Australia. No educational organisation can operate as an Australian university without meeting criteria set out in law. Commonwealth Government Provider Category Standards enforced by TEQSA determine which institutions can operate as universities.<sup>16</sup>

#### 1.3.1 Research

The most important distinctive aspect of universities as higher education institutions is their combination of research and teaching. Research is defined as original work conducted to produce new knowledge. To be a full Australian university, a higher education provider must be active in research across at least three broad fields of study: disciplines such as health, engineering, education, or science.<sup>17</sup> Higher education institutions with research activity in only one or two fields can apply to be a specialist university. Under this provision, the Melbourne College of Divinity became the University of Divinity.

While the idea that universities must be active in research is widely accepted in Australia today, the original Australian universities established in the mid-19<sup>th</sup> century were to be places of scholarship – expertise in

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16. Department of Education and Training (2015a). A list of universities is in Appendix A. Most universities also have their own founding legislation, usually from a state government.

17. A detailed categorisation of disciplines can be found in ABS (2001).

existing knowledge rather than original research. Though universities were conducting some research by the latter part of the 19<sup>th</sup> century, PhD degrees were not offered until the 1940s.<sup>18</sup>

In the late 1980s and early 1990s, predominantly teaching-focused colleges of advanced education and other government-funded higher education institutions were turned into or merged with universities, substantially diluting the university sector's research orientation. The universities that were created as a result are still sometimes referred to as 'Dawkins universities' (after the minister behind the policy, John Dawkins).<sup>19</sup> Yet only 10 years later, research became a defining legal feature of a university.<sup>20</sup>

The research requirement has made it difficult for new universities to start. University research is typically not self-financing. Public research funding is primarily awarded according to past research performance, which makes it hard for new universities to build research output. So after a period in the 1980s and 1990s when many new universities were created, only one has opened since the three-fields-of-study rule came into effect in 2000, Torrens University Australia.<sup>21</sup>

Universities aspire to a teaching-research nexus: the idea that teaching and research are mutually beneficial, not just two separate functions of the same institution. Both student satisfaction with teaching and research output have improved in the past 15 years (Section 3.3 and Section 5.3), which might suggest a synergy. Profits from teaching

finance research (Section 6.4.2). But teaching performance is not closely linked with research quality.<sup>22</sup>

### 1.3.2 Comprehensiveness

While many NUHEPs specialise in what they teach (Section 1.2), full Australian universities must offer courses in at least three broad fields of education.<sup>23</sup> Most offer more. Universities are often described as being 'comprehensive' in the range of courses they offer. Two-thirds of universities have students in all ten major broad fields of education and all but two have at least eight broad fields.<sup>24</sup>

While many students specialise in their university studies, the comprehensive nature of Australian universities creates opportunities for studying more than one field. Australian universities offer many combined qualifications, such as arts/law and commerce/science, so that students graduate with two degrees. Eight per cent of domestic bachelor enrolments in 2016 were in combined courses.<sup>25</sup> Many students also take units from faculties other than the one they are principally enrolled in. For example, an arts student may do a mathematics unit taught by a science faculty.

Comprehensiveness also extends to the range of qualifications offered. All full universities offer courses from bachelor through to PhD (Section 1.1). Some also offer diploma, associate degree and vocational education qualifications.

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18. Starting with the University of Melbourne in 1945: Forsyth (2014, p. 27).

19. The universities created during the Dawkins years are noted in the list of universities in Appendix A. For a more detailed history see Macintyre et al. (2017).

20. Through agreements between education ministers: MCEETYA (2000), later replaced by MCEETYA (2007).

21. Torrens University Australia was established under now-abolished provisions that allowed greenfield universities to have a plan to meet the three-fields rule: MCEETYA (ibid., section 8.1.1).

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22. See Cherastidtham et al. (2013) and the summary and references at Norton and Cherastidtham (2015a, pp. 31–33).

23. ABS (2001).

24. Calculated from Department of Education and Training (2018a).

25. Department of Education and Training (2017b).



### 1.3.3 Self-accreditation

Unlike other higher education institutions, Australian universities automatically have the right to accredit their own courses. University academic boards approve their university's courses, within a framework established by government regulation.<sup>26</sup> Self-accreditation is an aspect of academic freedom (Section 1.3.4). In developing courses, academics in self-accrediting universities can include material without seeking a government agency's approval. They are instead regulated by their fellow academics.<sup>27</sup>

Though universities self-accredit, they also seek external accreditation or recognition. Often this is necessary for their graduates to be admitted to professional practice. Universities sometimes also secure international recognition for their qualifications. In total, about 100 accrediting agencies or professional bodies set requirements for university courses.<sup>28</sup> Although external influence on course content is common in courses linked to the professions, in other areas it can cause controversy, especially when it comes from politically sensitive sources.<sup>29</sup>

### 1.3.4 Academic freedom

The institutional freedom of self-accreditation has its individual equivalent in the idea of academic freedom. As one American study

put it, 'academic freedom establishes the liberty necessary to advance knowledge, which is the liberty to practise the scholarly profession'.<sup>30</sup> This includes freedom from government, from external funders and, in more complex ways, from the university administration. Surveys of academics show that freedom to pursue their own research interests is a major part of what attracts them to universities.<sup>31</sup>

Academic freedom is a narrower concept than freedom of speech. It protects academics in their professional capacity, as members of the university and scholars in their field. It does not guarantee a broad personal freedom to comment on any matter of interest. Academic freedom's legislative protections, in the licence-to-operate rules enforced by TEQSA and the funding laws implemented by the Department of Education and Training, refer to 'free intellectual inquiry', not free speech.<sup>32</sup>

University policies and enterprise agreements set out more detail on how academic freedom works in practice.<sup>33</sup> Typically, universities allow academics a public role outside as well as within their scholarly expertise, but sometimes discourage use of their university affiliation. Occasionally university administrations dismiss or discipline academics who make controversial or embarrassing public statements.<sup>34</sup> Such actions almost always attract strong criticism, because academics do not see this as a legitimate role for managers (see more in Section 1.3.5 below). With much of the academic workforce on casual or fixed-term contracts (Section 4.3), self-censorship may affect academic freedom more than actual administrative action.

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26. At universities, the academic board itself is usually established or required under the university's founding legislation. The role of academic boards is discussed in Dooley et al. (2013). Courses must meet the requirements of the Higher Education Standards Framework: Department of Education and Training (2015a).  
27. Although in practice the role and power of academic boards varies between universities, with central administrations also playing a role: see Rowlands (2017).  
28. PhillipsKPA (2017, appendix 1).  
29. For example, a proposal by the Ramsay Centre to fund a course on Western civilisation, and Chinese Government influence via Confucius Institutes: Bongiorno (2018), Haines (2018) and Hamilton and Joske (2018, chapter 10).

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30. Finkin and Post (2009, p. 39).  
31. Bexley et al. (2011, p. 66).  
32. *Higher Education Support Act 2003*, section 19-115; Department of Education and Training (2015b, A6.1.4 and B1.1.2). These provisions appear to apply to students as well as academics.  
33. Stobbs (2015); and Gelber (2018).  
34. For examples and some background, see Jackson (2005) and O'Brien (2015, pp. 223–229).



The funding system also influences how academic freedom works in practice. The major government funding programs for research projects (Section 6.4.1) respect academic freedom, as academic experts assess applications from other academics. But research expenditure has biases towards medical and scientific disciplines, and towards research with potential practical outcomes (Section 5.2). Academics with other research priorities receive less financial support. In 2010, six in ten academics agreed that they had freedom to pursue their research interests, but were much less likely to say they had the time or funding to do so.<sup>35</sup>

### 1.3.5 Self-governing communities

Universities see themselves as self-governing communities. Both public and private universities are legally distinct from government.<sup>36</sup> At public universities, government appointments to university governing bodies, commonly called councils or senates, are never a majority. Private universities have no such appointments. Education ministers have no direct operational control. Partly for historical constitutional reasons, much Commonwealth Government regulation is via conditions on grants (Section 8.1), which universities can decline.

Within universities, academics see themselves as members of the university community and not just as employees.<sup>37</sup> The legal force of this distinction was explicitly acknowledged in a Federal Court judgment.<sup>38</sup> Academics expect to be involved in collective decisions, a decision-making process known as collegiality. Traditionally academics

elect members to university senates and councils. Academic critiques of university administrators often complain about what they call managerialism – managers directing academics or steering their behaviour through targets and incentives. Managerialism is seen as an ideological rival to collegiality.<sup>39</sup>

Despite complaints that university managers are too powerful, compared to for-profit corporations university organisational structures are highly decentralised, with large amounts of consultation and decision-by-committee.

Unlike at universities in some other countries, Australian students do not usually live on campus.<sup>40</sup> But the idea of the university as a community helps explain why universities often provide a wide range of student health and welfare services and include student groups in decision-making, often through student associations officially recognised by the university. Traditionally this recognition was granted; it is now required by regulation.<sup>41</sup>

The role and funding of official student organisations has been the subject of a long-running political dispute between the Liberal Party on one side, and official student organisations, universities and the Labor Party on the other.<sup>42</sup> This was in part a debate about the scope of the

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35. Bexley et al. (2013, p. 66).

36. For discussions of the corporate status of universities see Corcoran (2000) and Orr (2012).

37. See the discussion in Forsyth (2014), especially chapters 7 & 8.

38. In *University of Western Australia v Gray* the court held that academic staff were, by virtue of the definition of 'university' in the UWA Act, members of a university, 'linked historically by that definition to the idea of the university as a community of teachers and scholars', see Stobbs (2015).

39. University staff surveys show low confidence in university management: NTEU (2018).

40. In 2017 there were 56,176 on-campus student accommodation beds and a further 32,198 off-campus student accommodation beds, usually within a short walking distance of campus: Urbis (2018, p. iii). Together they could accommodate less than 6 per cent of enrolments.

41. DIICCSRTE (2013); and Department of Education and Training (2015a, A6.3).

42. Norton (2005). A compulsory fee for student services and amenities, a long-standing aspect of Australian higher education, was abolished by the Liberal Howard government from 2006. A more limited fee, capped in total and with restrictions on how it can be used, was restored by the Labor Gillard government from 2012.

university. Is it just a provider of education and research services, or is it something more to its staff and students?

### 1.3.6 Broad social responsibilities

As well as being a community in themselves, universities are expected to contribute to the broader community. Community engagement is sometimes referred to as the third stream of university activity, after teaching and research. It can include universities working with or for local communities, government, industry, not-for-profits, and the media. The standards for registration as a university elevate some of these activities from desirable to necessary, requiring demonstrated engagement with local and regional communities, and a commitment to 'social responsibility' in their activities.<sup>43</sup> Research policy has encouraged universities to focus on practical problems or commercial opportunities (Section 5.2, Section 6.4.1, Section 9.3). It is also common for university founding statutes to include community engagement objectives.

Community engagement is so diverse that it is hard to measure. One input indicator comes from academic time-use surveys, although the published surveys include other activities. The latest, from 2015, found that academics spent on average 5.3 hours a week on community and university service, out of an average 50.7 hours of work.<sup>44</sup> An earlier survey of academics found that more than half believed that community service should be rewarded in promotions, though only 15 per cent said that it was rewarded.<sup>45</sup> Although a distant third priority after research and teaching, community service is an important part of university culture and practice.

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43. Department of Education and Training (2015a, B1.2).

44. NTEU (2015a). A 2007 survey, which excluded internal university service but included services to clients or patients as well as community service, reported 4.4 hours out of 50.6 hours a week: Coates et al. (2009).

45. Bexley et al. (2011).

### 1.3.7 Multiple missions

Though the term 'university' has a formal legal definition, no single feature makes universities distinct as higher education providers. NUHEPs conduct research, self-accredit, give their academic staff freedom, operate as a community of scholars, and engage with broader social responsibilities. But few NUHEPs do all of these things, and most have limited functions beyond teaching. Contemporary Australian universities are characterised by their combination of activities more than by any one feature.

### 1.4 Higher education service providers

Although only TEQSA-registered higher education providers can award higher education qualifications, other organisations support higher education providers or deliver related higher education services.

While universities do their own marketing, intermediary organisations help co-ordinate the matching of students with courses and institutions. The most important intermediaries are the state-based tertiary admissions centres, which handle most school-leaver applications for university (Section 2.1). In the international student market, IDP Education helps match international students with universities in Australia and elsewhere.

Open Universities Australia (OUA) does not deliver education or award degrees. It sells online units and courses offered by its seven shareholder universities and other higher education providers. It is unusual in promoting not-for-degree units; selling just knowledge without a credential (though students may apply to individual universities for credit towards a degree for OUA units).

Organisations such as Blackboard, Canvas and Moodle help universities co-ordinate teaching-related activities through software known as learning management systems. These store course content and

are used to submit work, run student forums, record assessment results, and do other administrative tasks. Other technology firms offer 'adaptive learning' software, where online course materials adjust to the student. This includes an Australian company, Smart Sparrow.

Companies offering one-to-one online tutorial services for university students operate in the Australian market. An Australian tutorial service provider, Studiosity, works with 22 universities. Another firm in this market is Smarthinking, which is owned by the world's largest international educational services company, Pearson Education.

Universities also outsource course delivery. For example, Swinburne Online courses are delivered by Online Education Services, a subsidiary of the SEEK job search company. Navitas operates La Trobe University's 'La Trobe University Sydney' campus. Students study a La Trobe University curriculum and are awarded a La Trobe University degree. Queensland TAFE offers University of Canberra degrees. There are other similar arrangements around Australia and at offshore campuses.

## 2 Higher education students

Two in five school leavers now enrol in higher education. The number of students admitted with low ATARs is increasing, although they remain a small percentage of all students. Large numbers of students use previous vocational or higher education to enter their course.

Total domestic student enrolments increased rapidly over the last decade to more than one million, although growth rates have now slowed down. Off-campus enrolments are increasing more than on-campus enrolments. Since the 1990s, students have become more likely to study health-related courses, and less likely to study commerce-related courses. Although most postgraduates study part-time, the proportion of full-time students has increased to 41 per cent. Three-quarters of undergraduates study full-time.

Higher education participation rates are up across the Australian community. The rate is highest for young people whose families speak an Asian language rather than English at home. More women than men go to university. Young people with a parent in professional employment are much more likely to enrol than their contemporaries with parents in blue-collar jobs. The main cause is differences in school results.

International enrolments are booming. Nearly 400,000 international students studied in Australian universities in 2016, one-in-five studying at an offshore campus. New visa approvals show that the number of international students in 2018 will significantly exceed 2016 enrolments. Enrolments from China and India have grown the most, with Chinese students now making up a third of international enrolments.

### 2.1 Selecting students

Higher education is popular in Australia. For decades most upper-year school students in Australia have expressed an interest in going to

university.<sup>46</sup> In 2017, 57 per cent of the students who completed Year 12 the previous year applied for university.<sup>47</sup> More of the students who completed school in 2016 will apply in later years.

Most undergraduate applicants, 243,000 in 2017, use state-based tertiary admissions centres.<sup>48</sup> Tertiary admission centre applicants list the courses they would like to take, in order of their preferences. In effect, applicants simultaneously apply to multiple higher education providers and/or for multiple courses at the same provider. If they miss out on their first preference course they can still receive an offer for their second or a lower preference course.

Although the admissions centres handle most applications, increasing numbers of people, more than 124,000 in 2017, apply directly to higher education providers.<sup>49</sup> Mature-age students especially apply directly. Reasons include having only one preference, early admission opportunities that bypass the tertiary admission centres, universities using additional selection criteria such as non-academic personal attributes, and prospective students thinking it is easier or more appropriate to them.<sup>50</sup> Direct applications are the most common way of entering postgraduate courses.

Universities cannot take everyone who wants to attend. Legally, no higher education provider should accept prospective students unless

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46. James (2002, p. 15); Mission Australia (2016, pp. 15–16); Roy Morgan Research (2009, pp. 48–50); ANOP/DEET (1994, pp. 7–9); and ACER (2018, p. 10).

47. Department of Education and Training (2017c, p. 39).

48. *Ibid.* (p. 11).

49. Department of Education and Training (*ibid.*, p. 49). In practice, universities can outsource processing these applications to a tertiary admission centre. The student is just not using the multi-university preference system.

50. Harvey et al. (2016, pp. 55–56, 96–97).

they have the academic preparation and English proficiency needed for the course.<sup>51</sup> In practice, however, most people who want to attend university can do so. Some universities offer places to more than 90 per cent of the people who apply, and overall 82 per cent of applicants received an offer in 2017.<sup>52</sup>

Although the higher education system can accommodate most demand, entry to particular universities and courses is rationed because of capacity constraints, academic requirements, and prestige factors. Typically, places in over-subscribed courses are allocated based on prior academic performance, at school, in another tertiary course, or on an admission test. Universities relax their entry requirements for students from disadvantaged backgrounds. But the better an applicant's past academic results, the better their chance of being offered a place.

The most frequently used source of information on past academic performance is school results. In 2016, 42 per cent of bachelor degree students were admitted based on their secondary education. For recent school-leaver applicants the Australian Tertiary Admission Rank (ATAR) usually plays an important role in the admission decision.<sup>53</sup> The ATAR ranks school leavers in their age cohort between 0 and 99.95. An ATAR of 80 means the student did better in Year 12 than 80 per cent of their

age cohort, including people who did not finish school. ATARs below 30 are reported to students simply as 'less than 30'.<sup>54</sup>

More low-ATAR students are admitted to university now than in the past, but ATAR and university attendance are still closely linked. As ATAR declines, school leavers become less likely to apply for a university course, receive an offer, or accept an offer.<sup>55</sup> In 2017, nearly 22,000 school leavers with an ATAR of 90 or more accepted an offer of a university place, compared to less than 5000 school leavers with an ATAR of 50 or less.<sup>56</sup>

At some universities, an undergraduate general admission test for school leavers, UniTest, supplements school result-based admission systems. Specialised admissions tests are used in some fields. An example is the UMAT (Undergraduate Medicine and Health Sciences Admission Test) used for students applying for medicine at some universities. Auditions are often used for courses in the performing arts.<sup>57</sup> Mature-age applicants can sit the Specialised Tertiary Admissions Test (STAT).<sup>58</sup>

Nearly 30 per cent of domestic commencing bachelor-degree students are admitted based on previous higher education study. These include students who attended pathway colleges that award undergraduate diplomas, students switching courses or universities, and students returning for a second degree. Twelve per cent of applicants are admitted based on their vocational education qualifications or experience.

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51. Department of Education and Training (2015a, Part A, 1.1).

52. Department of Education and Training (2017c, appendix table A10).

53. Formerly called ENTER in Victoria, UAI in NSW, and TER in other jurisdictions except Queensland, which kept its OP system. The OP system will be replaced by ATAR in 2020. In 2017, 94 per cent of school-leaver applicants had a valid ATAR: Department of Education and Training (*ibid.*, p. 39). Universities do not always use ATAR as the basis of admission for school leavers, but in 2016 three-quarters of those admitted based on secondary education had their ATAR recorded in the enrolment data: Department of Education and Training (2017b).

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54. Strictly speaking, ATAR is a rank of students who did Year 7 in each state in the same year. For more detail see UAC (2018); VTAC (2017).

55. Norton et al. (2018, p. 8).

56. Department of Education and Training (2017c, appendix table A8.1).

57. There are no national statistics on how widely used these tests are. In 2016, 20 per cent of the total commencing undergraduate students who completed school in 2015 were admitted based on something other than their secondary school results: Department of Education and Training (various years[a]).

58. For a study of STAT's predictive value, see Coates and Friedman (2010).

For bachelor-degree international students, universities set admission requirements based on home-country school systems or international qualifications such as the International Baccalaureate.<sup>59</sup> International students must also demonstrate English language proficiency, which is discussed further in Section 3.1.<sup>60</sup>

University offers to applicants are not the end of the selection process. About 10 per cent of people who receive an offer do not accept it, and another 13 per cent accept but defer commencing.<sup>61</sup> Domestic applicants who accept their offer and enrol typically have until about a month after teaching starts to decide whether to proceed with a subject or course. The decision time is called the ‘census date’, which must be at least 20 per cent of the way through a subject. Students who end their enrolment before the census date don’t have to pay student contributions or fees. About 7 per cent of the applicants who accept an offer leave before the first census date.<sup>62</sup>

Intense competition between applicants for places in some universities and courses draws attention to how universities choose students. But in the Australian higher education system overall, universities compete for students who make choices in their initial applications, in whether to accept offers, in whether to stay past the first census date, and then in whether to keep going with their original course, transfer to another

59. International students also enter university from Australian schools or after other preparatory study.

60. Arkoudis et al. (2012, chapter 2); and Müller (2017).

61. The annual statistics on applications exclude those who defer from acceptances: Department of Education and Training (2017c, p. 22). Of those who deferred in 2014, 32 per cent of school leavers and 53 per cent of older applicants did not reach a census date in the next two years. This analysis uses applicants for the 2014 academic year who are then tracked for the next two years: Department of Education and Training (various years[a]).

62. Norton et al. (2018, section 6.2). Some universities have separate processes for accepting an offer and enrolling, so some of this 7 per cent may never have enrolled.

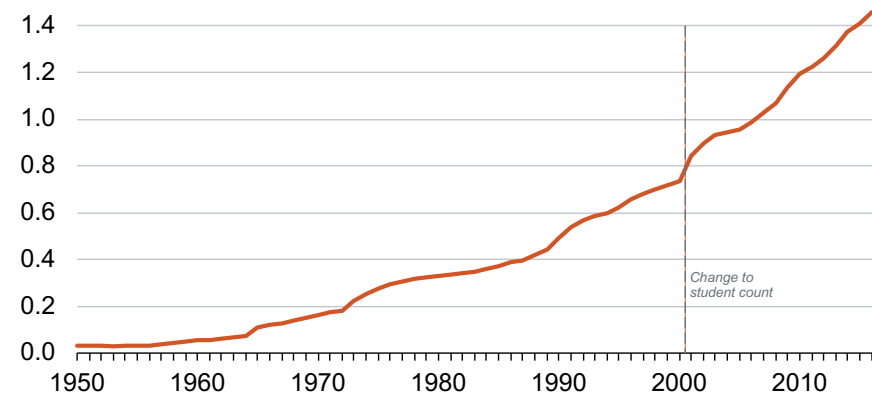
one, or leave higher education entirely. It is an ongoing process of mutual selection, with students and universities each making important decisions about the other.<sup>63</sup>

## 2.2 Overall enrolment trends

Australian higher education student numbers have grown rapidly since the 1960s, as Figure 2.1 shows. In 2016, there were 1.48 million domestic and international student enrolments.<sup>64</sup>

**Figure 2.1: Higher education students, 1950–2016**

Millions of students



*Note: Figures from 2001 onwards are based on enrolments at any time throughout the year; prior years are based on enrolments as at 31 March.*

*Sources: Department of Education and Training (various years[a]), Department of Education and Training (2014) and Department of Education and Training (2018a).*

63. Ibid. (section 1.1).

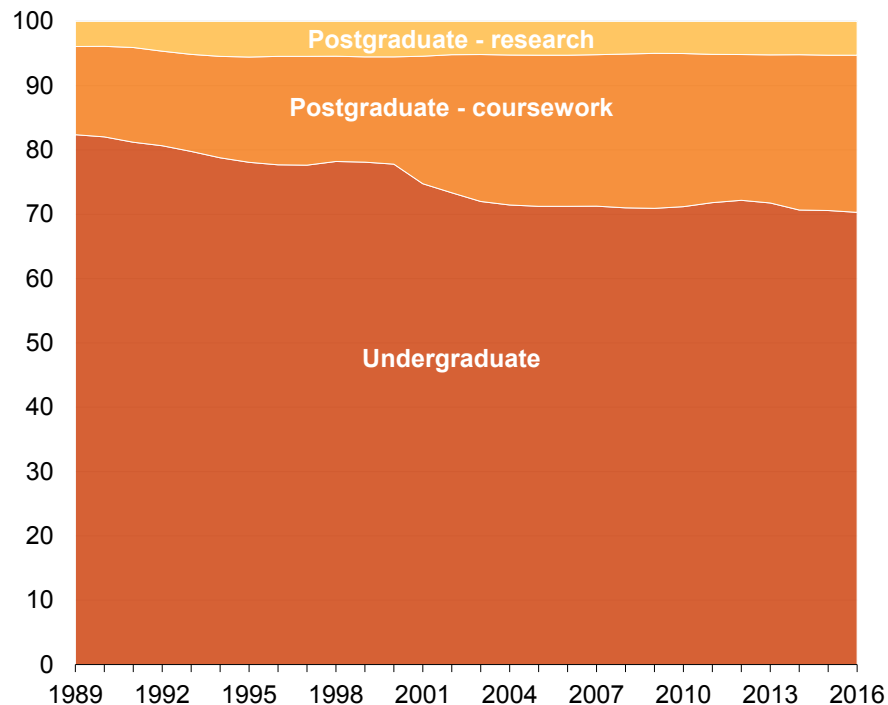
64. TEQSA (2018b). This is a slightly higher number than reported in Figure 2.1, because TEQSA includes enrolments from providers that receive no government financial support (listed in Appendix B). However, there is limited historical data available from TEQSA.



Although undergraduate numbers increased by the largest absolute number over the past 30 years, postgraduate coursework grew from 14 per cent to 25 per cent of all enrolments. While the number of research students expanded (Section 5.1), their share of all students has been stable at around 5 per cent for many years. Figure 2.2 shows the trends.

**Figure 2.2: Enrolment share by level of study, 1989–2016**

Per cent of enrolments



Note: Doctorate by coursework and extended masters are classified as postgraduate coursework.

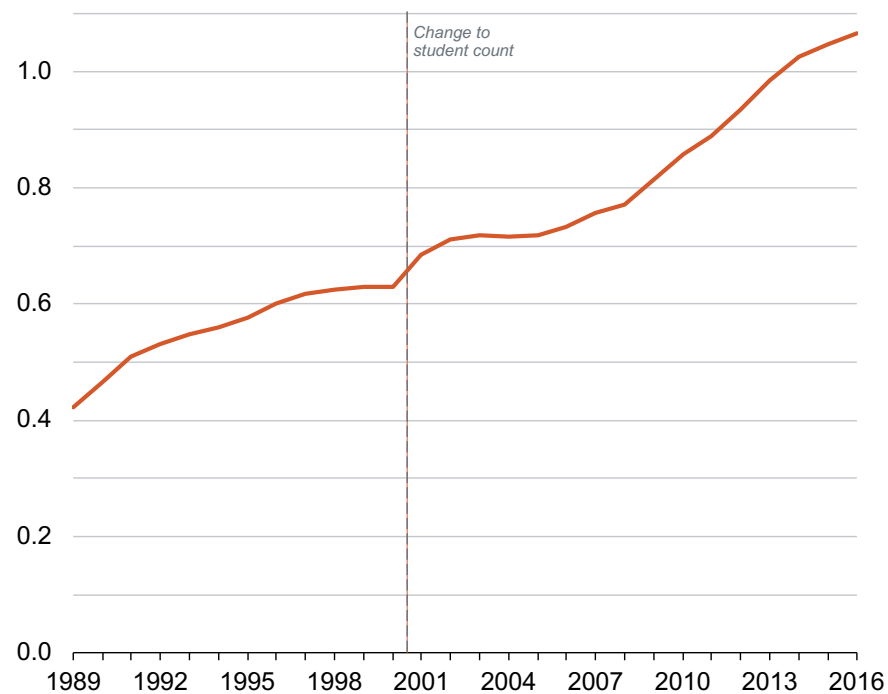
Sources: Department of Education and Training (2014) and Department of Education and Training (2018a).

### 2.3 Domestic students

Just under three-quarters of students enrolled in Australian higher education institutions are Australian citizens or permanent residents. Occasional years of slow growth or small declines in student numbers only interrupt the long-term trend towards more domestic students (Figure 2.3). In 2016, there were 1.06 million domestic students.

**Figure 2.3: Domestic higher education students, 1989–2016**

Millions of students

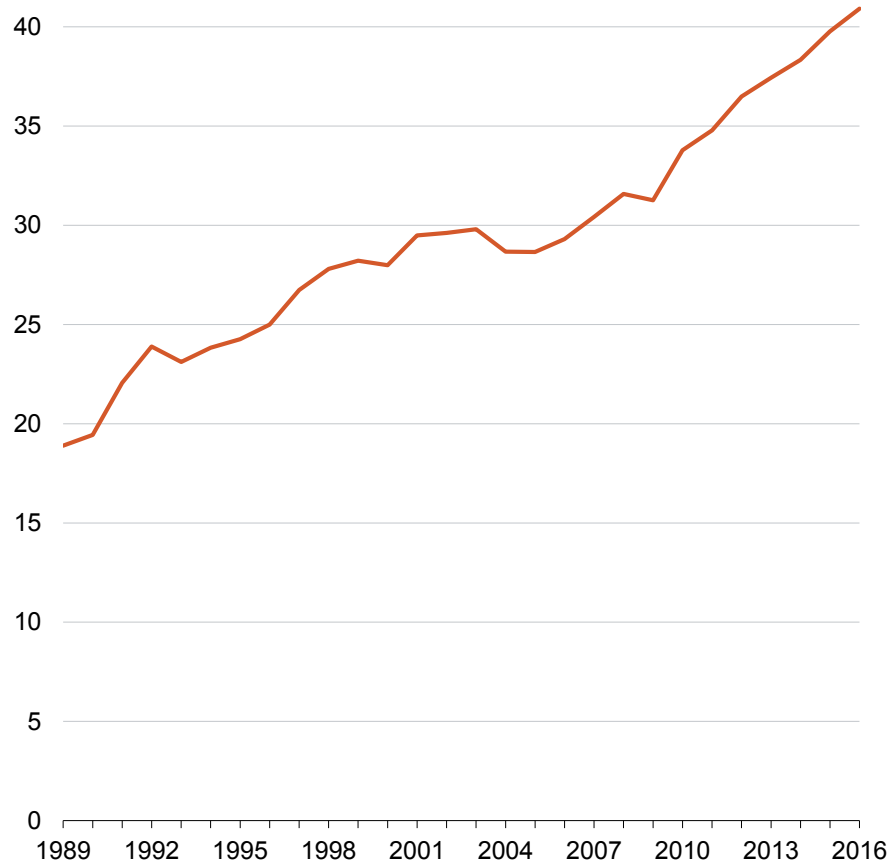


Note: Figures from 2001 onwards are based on enrolments at any time throughout the year; prior years are based on enrolments as at 31 March.

Sources: Department of Education and Training (2014) and Department of Education and Training (2018a).

**Figure 2.4: Domestic higher education participation rates, 19-year-olds, 1989–2016**

Per cent of population enrolled

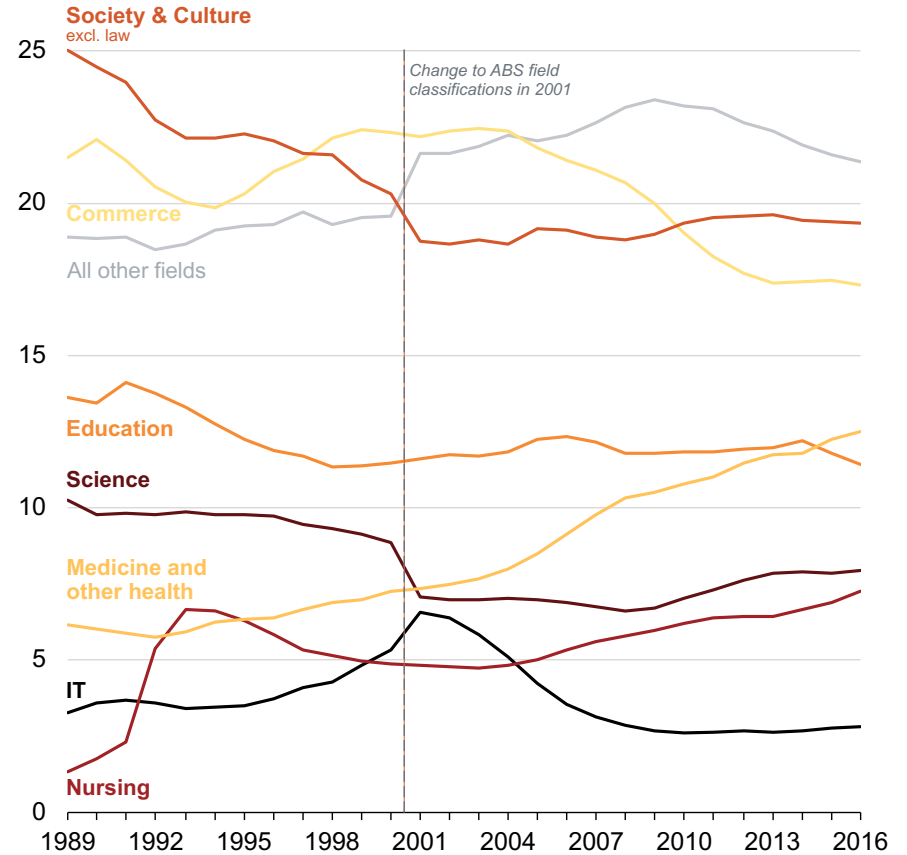


Notes: The 19-year-old participation rate is the number of Australian citizen and permanent resident, and NZ citizen 19-year-olds who are enrolled in higher education as a proportion of total 19-year-old residents in a given year less onshore international students (temporary visa-holders). Offshore international students are excluded from the calculation.

Sources: Department of Education and Training (various years[a]), Department of Education and Training (2018a) and ABS (2018b).

**Figure 2.5: Domestic enrolment share by selected fields of education, 1989–2016**

Per cent



Notes: Domestic enrolments in undergraduate and postgraduate non-research courses. Society & Culture is an ABS category. It includes humanities, social sciences, psychology and other fields listed in Appendix C. We have removed law from the count, because it is very different to the other disciplines. Remaining fields are classified according to the table in Appendix C. In 2001, the ABS moved from Field of Study classifications to the more detailed Field of Education classifications. Correspondence between the two classifications is imperfect, but acceptable for broad fields.

Sources: See Figure 2.3.

Participation rates adjust for Australia’s growing population by showing the proportion of people enrolled in higher education. Figure 2.4 on the preceding page shows higher education participation rates for 19-year-olds. Forty-one per cent of 19-year-olds were enrolled in higher education in 2016, more than double the rate in 1989.

Domestic student numbers are not expected to increase significantly in the next few years. The late-teenage population, the main source of new undergraduate students, is not growing significantly.<sup>65</sup> And funding policy changes now discourage universities from taking more undergraduate students (Section 6.3). The number of domestic students starting postgraduate coursework degrees fell 9 per cent between 2014 and 2016.<sup>66</sup>

### 2.3.1 Courses taken by domestic students

From their earliest days, Australian universities have mixed general and professional education. This remains true today, although professional courses dominate (Figure 2.5 on the previous page).<sup>67</sup> Since 2001, commerce and IT have lost enrolment share, while health-related fields have gained. Because overall enrolments expanded significantly in this period, all disciplines except IT have increased their total student numbers.

### 2.3.2 Full-time and part-time enrolment

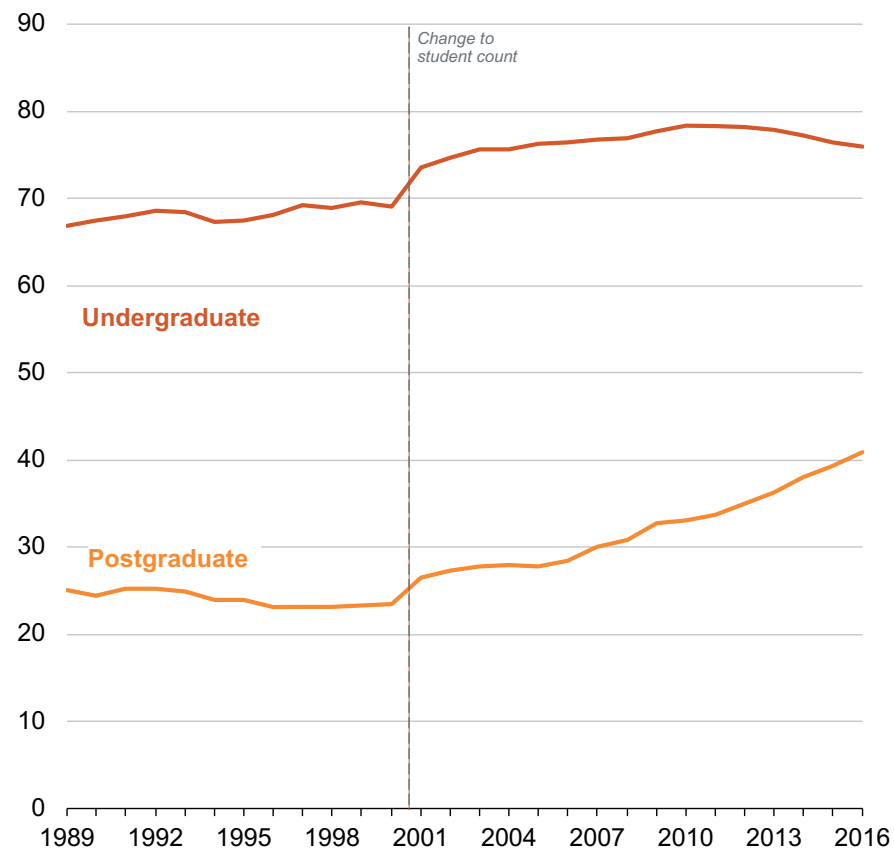
Most undergraduate students are enrolled full-time. Since 2001 the proportion of undergraduates studying full-time has increased, but since 2010 has tapered off slightly to 76 per cent (Figure 2.6). Postgraduate students are much less likely to study full-time, but an upward trend is apparent for them, reaching 41 per cent in 2016.

65. ABS (2018b).

66. Department of Education and Training (2018a).

67. Davis (2017, pp. 42–44).

**Figure 2.6: Proportion of domestic students enrolled full-time, 1989–2016**  
Per cent



Notes: Full-time enrolment is defined as 75 per cent or more of a normal one-year study load. Figures from 2001 onwards are based on enrolments at any time throughout the year; prior years are based on enrolments as at 31 March.

Sources: Department of Education and Training (various years[a]) and Department of Education and Training (2018a).

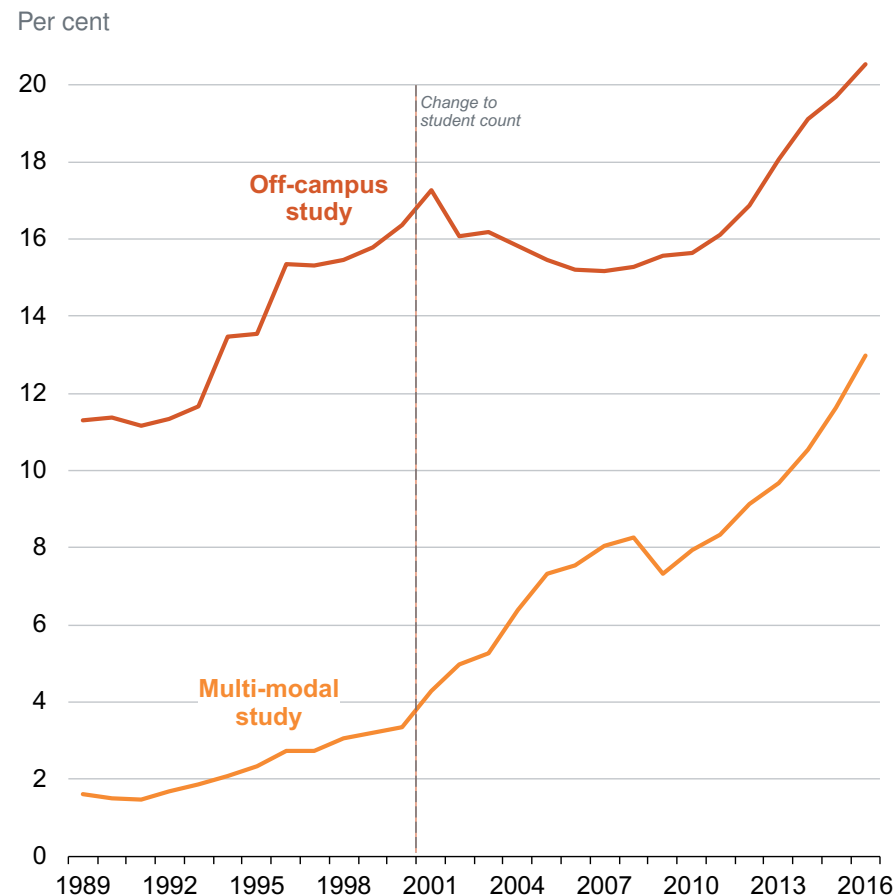
### 2.3.3 The rise of off-campus study

Studying off-campus is not new in Australia. Originally done by correspondence, it is now mostly online. Since 2011, off-campus study has increased significantly. One-in-five domestic students now studies off-campus. It is most popular with mature-age students and postgraduates. School-leaver undergraduates overwhelmingly still prefer on-campus study.<sup>68</sup> ‘Multi-modal study’ – a mix of online and on-campus – is also on the rise (Figure 2.7). By 2016, 13 per cent of students were enrolled on a multi-modal basis. Combining multi-modal and off-campus enrolments, a third of students have a substantial share of their instruction away from a university campus.

On- and off-campus are not always distinct forms of study. In 2016, about 45 per cent of students enrolled on-campus reported doing half or more of their study online.<sup>69</sup> Some universities provide study centres for their online students.

Several factors are likely to explain these changes. Improved educational technology via the internet has made studying at home easier. This technological change coincided with increased demand for postgraduate study, often from people with significant work and family responsibilities. Not having to travel to campus makes study easier for this group. Funding policy changes let public universities create many more undergraduate student places, including in online courses (Section 6.3.1).

**Figure 2.7: Proportion of domestic students studying off campus, 1989–2016**



Note: Open Universities Australia not included.

Sources: Department of Education and Training (various years[a]) and Department of Education and Training (2018a).

68. In 2016, 87 per cent of domestic bachelor-degree students who completed school in 2015 were enrolled on-campus. By contrast, 44 per cent of postgraduate coursework students aged 31–60 were enrolled on-campus: Department of Education and Training (various years[a]).

69. Social Research Centre/Department of Education and Training (2018a).

### 2.3.4 Other student characteristics

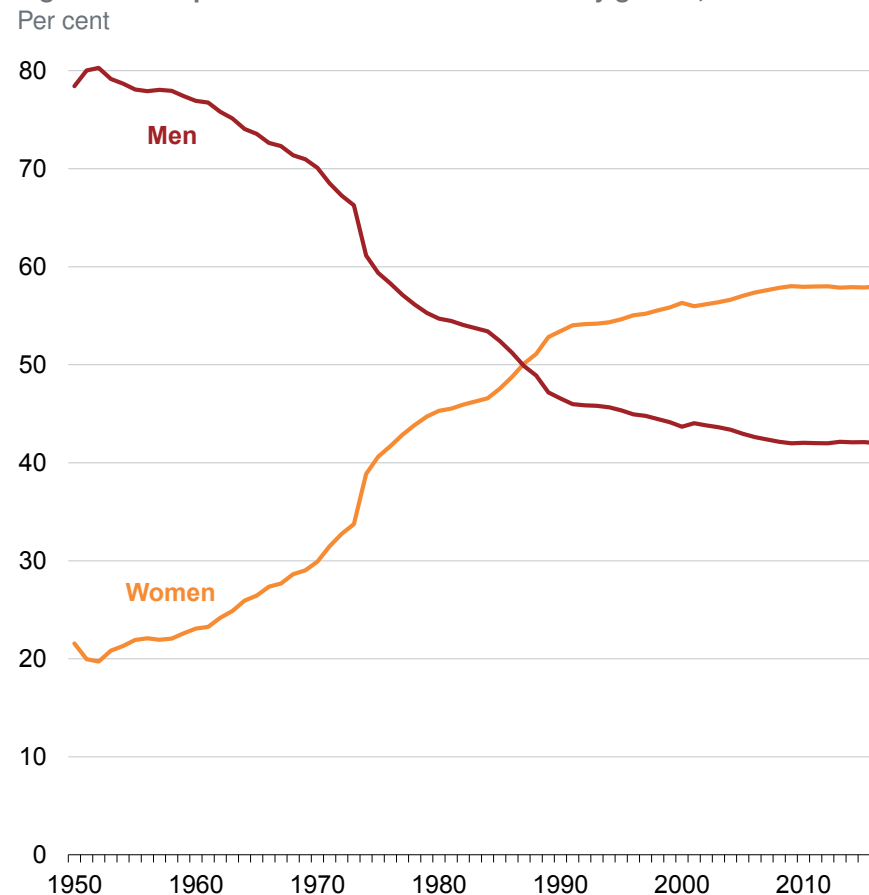
Australian universities used to be places mainly for men. In the 1950s, only about one-in-five university students was female. But in the late 1950s women started a 50-year run of consistent annual gains in enrolment share, which has now stabilised at about 58 per cent. Women have been a majority of university students since 1987 (Figure 2.8).

There are many reasons for this: the overall social position of women has improved; entry into occupations dominated by women (such as teaching and nursing) now requires higher education qualifications; girls outperform boys at school; and young men have better-paying vocational education options than young women.

Despite their long-standing overall majority in higher education enrolments, women are still an official ‘equity’ group in disciplines where they are a minority of students, such as engineering and IT. Other equity groups include students with disabilities, Indigenous students, regional and remote students, non-English-speaking-background students who arrived in the past decade, and low socio-economic status (SES) students.

Over the long term, higher education attainment has increased across all SES groups. By 2001, children born in the 1970s who had parents in manual occupations had nearly five times the higher education attainment of the children born in the 1950s to manual workers. The higher education attainment level of children of ‘upper service’ workers increased by about two-thirds in the same period.<sup>70</sup>

**Figure 2.8: Proportion of domestic enrolments by gender, 1950–2016**



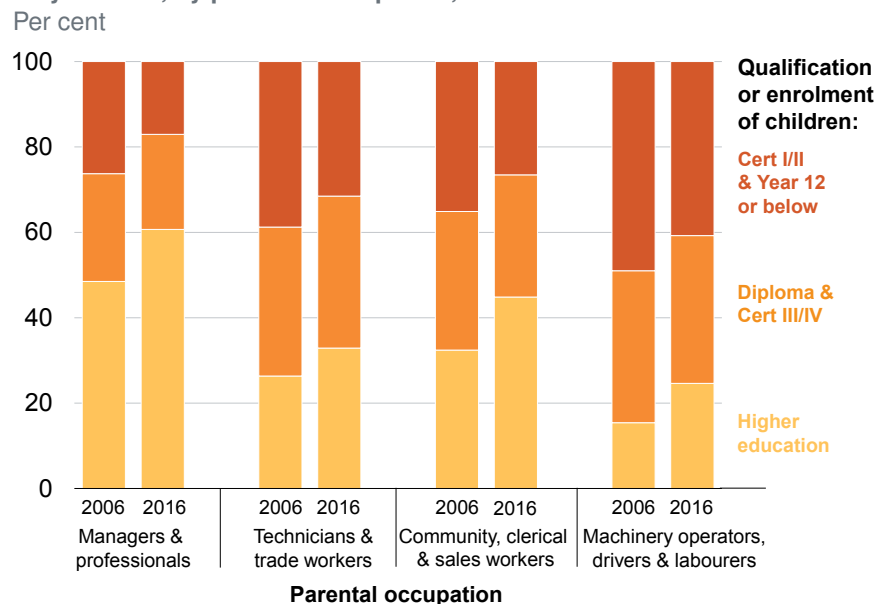
Notes: See Figure 2.1.

Sources: Department of Education and Training (2014) and Department of Education and Training (2018a).

70. Marks and Macmillan (2007).

Although attainment increases continue across the socio-economic spectrum, SES differences in university participation remain large. Figure 2.9 shows the higher education participation or qualification attainment of people aged 20–24 in 2006 and 2016, classified according to parental occupation. In 2016, 25 per cent of the children of machinery operators, drivers and labourers were in higher education or had a degree. By contrast, 61 per cent of the children of managers and professionals were enrolled in or had completed higher education.

**Figure 2.9: Level of highest education enrolment or attainment for 20 to 24-year-olds, by parental occupation, 2006 and 2016**



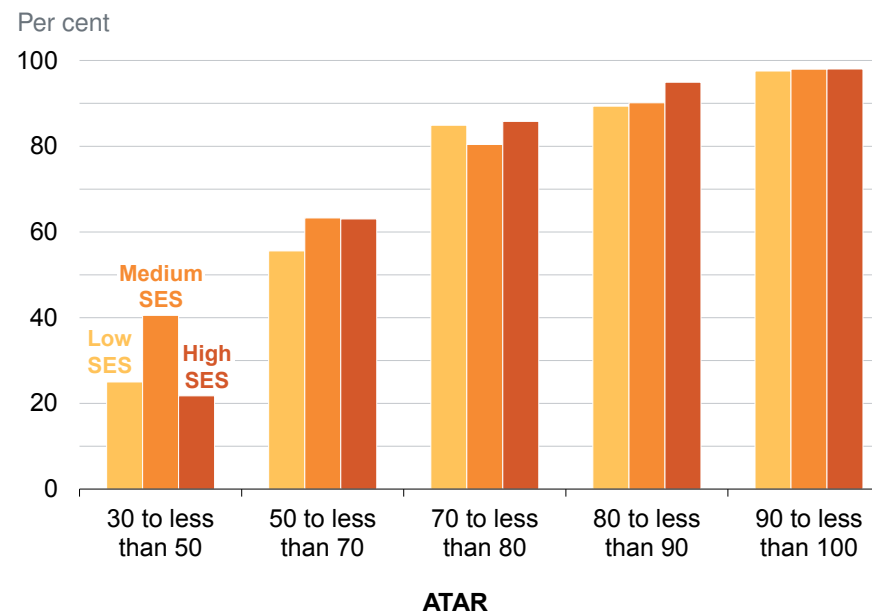
Note: Where parents had different occupations, the occupation requiring the highest skill level was used.

Source: HILDA (2016).

School outcomes limit the options of young people from low SES backgrounds. They are less likely to finish school than high SES students, and much less likely to attain a high ATAR.<sup>71</sup> Although school results vary significantly by SES, university participation rates differ little across different socio-economic backgrounds once ATAR is taken into account (Figure 2.10).

Young people who speak languages other than English at home typically have much higher rates of university attendance than other

**Figure 2.10: ATAR, socio-economic status and university participation, 2012**



Note: University participation rates by 2012 for people who were in Year 9 in 2006. SES is defined by the father's occupation when the student was aged 15.

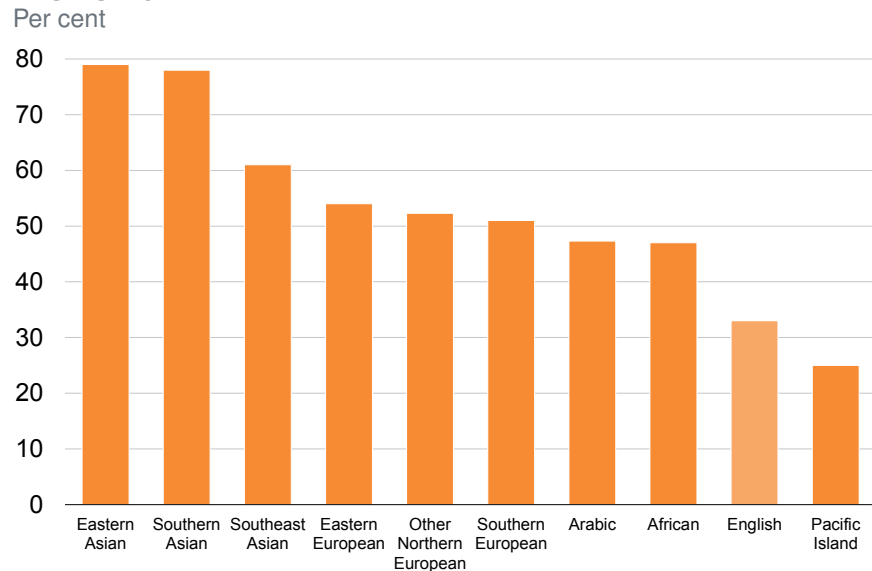
Source: Grattan analysis of Longitudinal Survey of Australian Youth: NCVET (2014).

71. Norton (2016, pp. 186–188).



young people (Figure 2.11). In communities speaking Eastern Asian languages, such as Cantonese or Mandarin, or Southern Asian languages, such as Hindi or Bengali, participation rates are well over twice that of their contemporaries who speak English at home. Most domestic students speak English at home (84 per cent). The most common other home languages are Cantonese, Mandarin, Vietnamese and Arabic.<sup>72</sup>

**Figure 2.11: Higher education participation among 18-to-20-year-olds, by language spoken at home, 2016**



*Notes: Australian citizens only. For Pacific Island languages, ancestry was also used to better identify the group of interest.*

*Source: ABS (2017a).*

72. Department of Education and Training (2017a, table 9.2).

## 2.4 International students

International students have long studied at Australian universities, but in small numbers until the 1990s. Before then, international enrolments were usually wholly or partly subsidised by the Australian Government.<sup>73</sup> From 1986, universities were allowed to take international students at fees they set and kept. Double-digit growth rates quickly became the norm, promoted at times by migration policies favouring former international students.<sup>74</sup> Australian universities have also established branch campuses overseas, or partnered with education providers in other countries to deliver Australian courses.<sup>75</sup>

In 2016, 391,500 international students were enrolled with Australian higher education providers (Figure 2.12 on the following page). After a slowdown between 2010 and 2013, international student numbers recovered to reach a new peak in 2016. Data derived from immigration statistics, which does not include students at offshore campuses, show strong growth continuing into 2018.<sup>76</sup>

A substantial minority of international students – 80,000 in 2016 – are enrolled offshore, with about two-thirds of those in Singapore (28 per cent), Malaysia (20 per cent) or China (16 per cent). Counting only onshore students, about one-in-five students in Australian universities is an international student. Just under half of all international students are enrolled in commerce-related courses. Other major fields include engineering (12 per cent), IT (10 per cent), ‘society and culture’ (8 per cent) and health-related fields (8 per cent).<sup>77</sup>

73. Meadows (2011); Megarrity (2007). A limited number of international students from developing countries still receive scholarships to study in Australia.

74. Spinks and Koleth (2016) has an overview of migration policy changes.

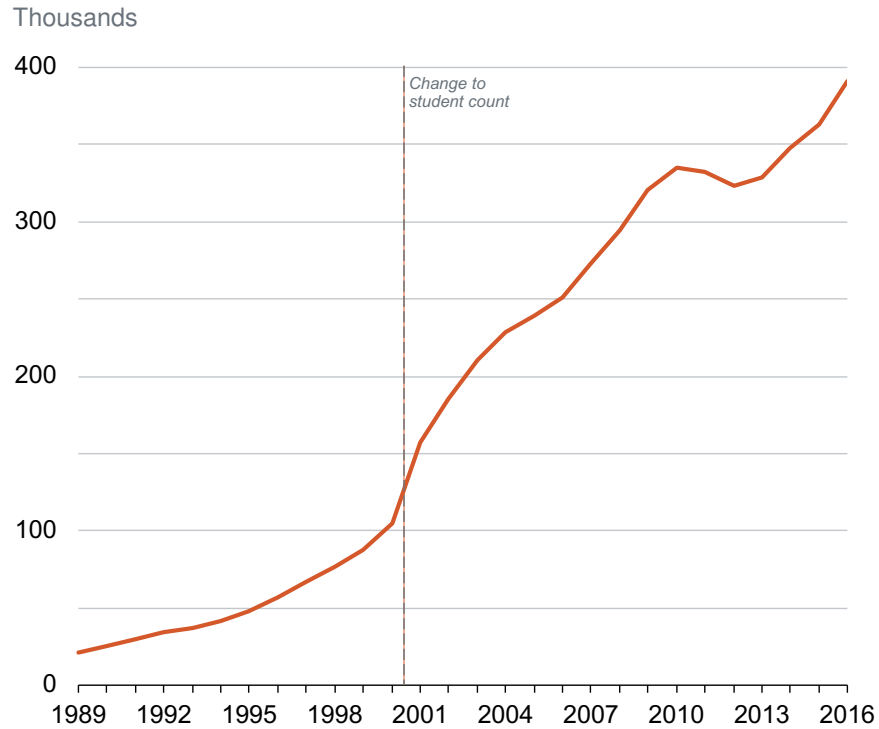
75. See Ziguras and McBurnie (2015, especially 6 and 7).

76. Department of Education and Training (2018b); and Department of Home Affairs (2018a).

77. See Appendix C for field of education classification details.

Australian universities enrol students from most countries, but the largest numbers come from Asian nations (Figure 2.13). Since 2000, enrolments from China have grown 20-fold. They now make up more than one-third of all international students in Australian higher education.

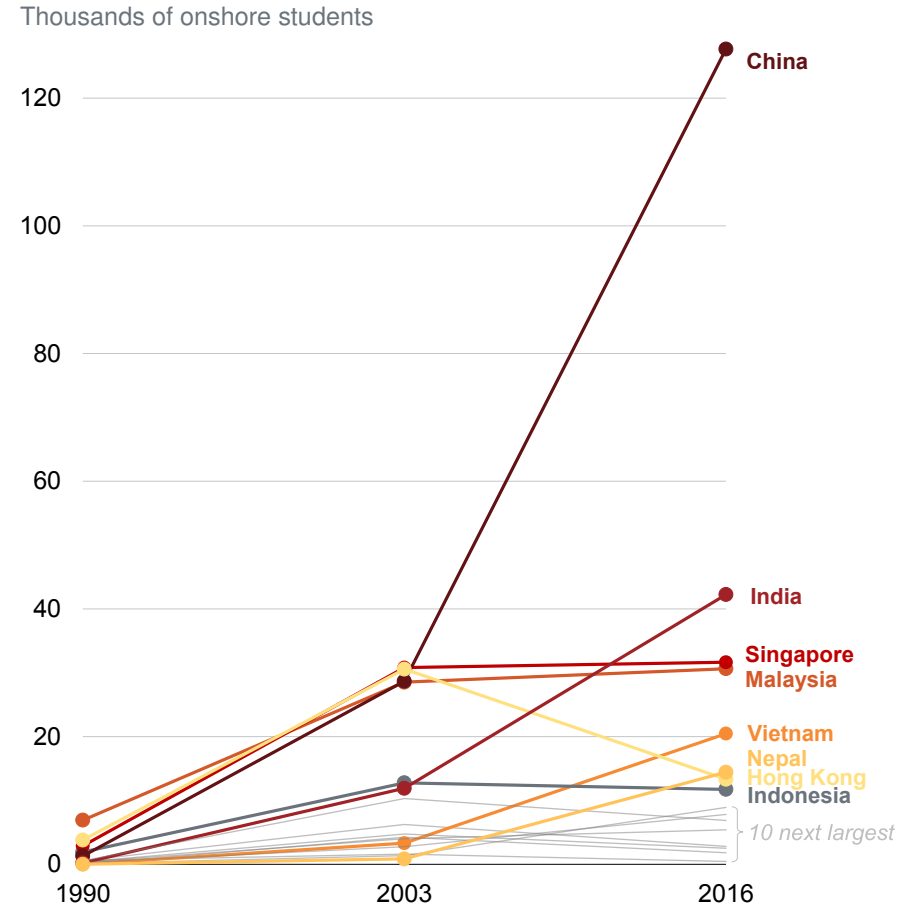
**Figure 2.12: International students enrolled in Australian higher education, 1989–2016**



Note: Figures from 2001 onwards are based on full-year enrolments; prior years are based on enrolments as at 31 March.

Sources: Department of Education and Training (2014) and Department of Education and Training (2018a).

**Figure 2.13: International students by main source countries**



Note: By country of permanent home residence.

Source: Department of Education and Training (various years[a]). Annual figures are available from Department of Education and Training (2017a), and preceding years.

### 3 The student experience

In recent years, students have become slightly less likely to fail subjects. Although there is concern about soft marking of international students, they report lower average marks and are more likely to fail subjects than domestic students.

Course completion rates are decreasing, with students commencing their degrees in 2008 more likely to have finished in six years than students who started in later years. Part-time study and a low ATAR increase the risk of non-completion. An increasing number of students with these characteristics is likely to explain completion trends.

Students are generally satisfied with the quality of teaching in Australian higher education, although after twenty years of improvement, satisfaction levels have stabilised.

#### 3.1 Passing and failing

For students, subjects passed is a key measure of success. For the higher education system's credibility, subjects failed matter too. Failed subjects are a sign that academic standards are being enforced, and that employers and others can trust that graduates have the expected knowledge and skills.

In some cases, that trust is not absolute. Doubts about the quality of teacher education graduates prompted the NSW and Victorian governments to set minimum academic entry requirements for school leavers applying for teaching courses.<sup>78</sup> While admission processes are regulated for all courses (Section 2.1), government-set minimum admission requirements for particular courses are unusual. Nationally,

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78. Department of Education and Training (Victoria) (2018); and NSW Education Standards Authority (2018).

teaching graduates also now need to pass a literacy and numeracy test.<sup>79</sup> No other field has such a test mandated by government.

In the international education market, government agency reports have argued that some universities put student recruitment and retention ahead of academic standards, with problems including cheating, soft marking and inadequate English language requirements.<sup>80</sup>

All universities set minimum English language requirements, but not necessarily at the level needed for successful study. One major language testing service, IELTS, recommends that for academic courses students should have a 'band' of 7 or more on a scale where 1 is lowest and 9 is highest.<sup>81</sup> Despite this, most universities set a minimum of band 6. No university has a general minimum above 6.5, although specific courses can require greater proficiency.<sup>82</sup> One study found that students with band 6 English averaged more than 200 errors per 1000 words of written text, compared to 35 for students with band 7 English.<sup>83</sup>

With international students paying high fees, both they and their universities want them to succeed. This is likely to affect behaviour.

A survey of 14,000 students in eight Australian universities found that 6 per cent self-reported cheating on an assignment and/or an exam. International students were twice as likely as domestic students to

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79. AITSL (2015). To be successful, graduates need a score that would put them in the top 30 per cent of the population. The pass rate in 2017 was 92 per cent, but at the worst performing university is was about 75 per cent: Urban (2018).

80. ICAC (2015); and Victorian Ombudsman (2011).

81. IELTS (2018, pp. 12–13).

82. Check of university websites conducted in July 2018.

83. Müller (2015, p. 1211). Many of the errors for band 7 students were errors also made by native speakers of English.

admit to cheating.<sup>84</sup> Many more students reported sharing or trading notes or assignments. In a parallel survey of 1150 academic staff, more than two-thirds had suspected that an assessment task was not written by the student who submitted it. In more than 60 per cent of such cases, the academic's knowledge of the student's language ability was a reason for their suspicion. Seven per cent of staff were aware of their students cheating in an exam.<sup>85</sup>

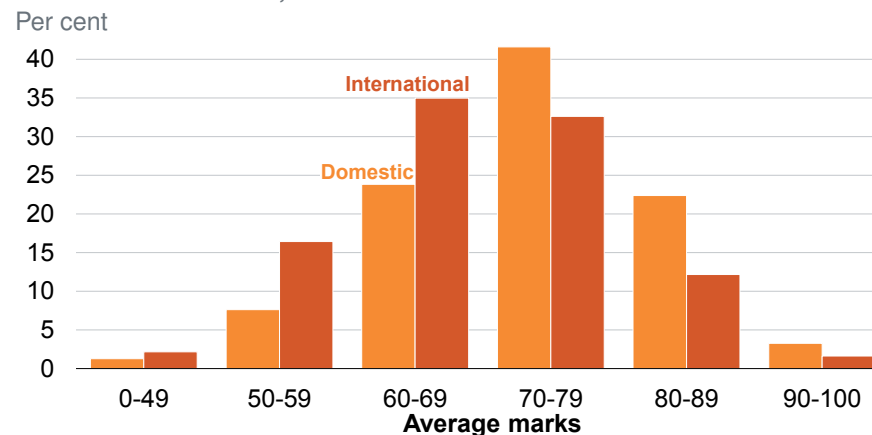
TEQSA has issued advice to universities on how to deal with 'contract cheating', prompted by well-publicised cases of commercial websites offering cheating services.<sup>86</sup> However, most cheats use work by other students or friends.<sup>87</sup> While cheating is sometimes sophisticated, it can also be amateurish, with document metadata (10 per cent) and off-topic content (36 per cent) being common grounds for academics suspecting malpractice.<sup>88</sup> In the 2018 federal Budget, TEQSA received additional funding to work on academic integrity issues.<sup>89</sup>

While cheating is punished when detected, academics claim that international students benefit from 'soft marking'. In a union survey, 28 per cent of academics agreed with the proposition that they felt pressure to pass full-fee-paying students whose work is not good enough.<sup>90</sup> Due to high levels of academic autonomy (Section 1.3), the same organisation recruits the students, designs the course, approves the curriculum, teaches the subjects, conducts the assessment and awards the qualification. With weak third-party overview, the university

system relies on the integrity of academics and internal processes to maintain academic standards.<sup>91</sup>

Whether soft marking exists or not, international students receive lower marks than domestic students. International students are substantially more likely to self-report average marks below 70 per cent (Figure 3.1). Between first and third year, domestic students become slightly less likely to report average marks below 70 per cent, while international students become more likely to do so.<sup>92</sup>

**Figure 3.1: Average self-reported marks, bachelor-degree domestic and international students, 2016**



Notes: Bachelor pass degree students only. Survey conducted August-October 2016.

Source: Student Experience Survey, Social Research Centre/Department of Education and Training (2018a).

84. Bretag et al. (2018).

85. Harper et al. (2018).

86. TEQSA (2017b).

87. Bretag et al. (2018).

88. Harper et al. (2018).

89. TEQSA (2018c).

90. NTEU (2018, p. 20).

91. Courses must be periodically reviewed by independent people within the organisation, and student performance compared with that of students in comparable courses: Department of Education and Training (2015a). However, this does not fully deal with the potential conflicts of interest built into university internal processes.

92. Social Research Centre/Department of Education and Training (2018a).

International students are more likely than domestic students to fail subjects (Figure 3.2). However, fail rates decrease after first year despite reduced average marks. International student fail rates went down in the years to 2010. These improved results were largely driven by universities that previously had high fail rates.

For domestic commencing bachelor-degree students, fail rates went up as enrolments increased between 2009 and 2013. Since then, rates have declined slightly, with 14 per cent of subjects attempted failed in 2016 (Figure 3.2). For continuing domestic students, fail rates have been steadier. From 2013 to 2016, their subject fail rate was about 9.5 per cent.

### 3.2 Course attrition and completion

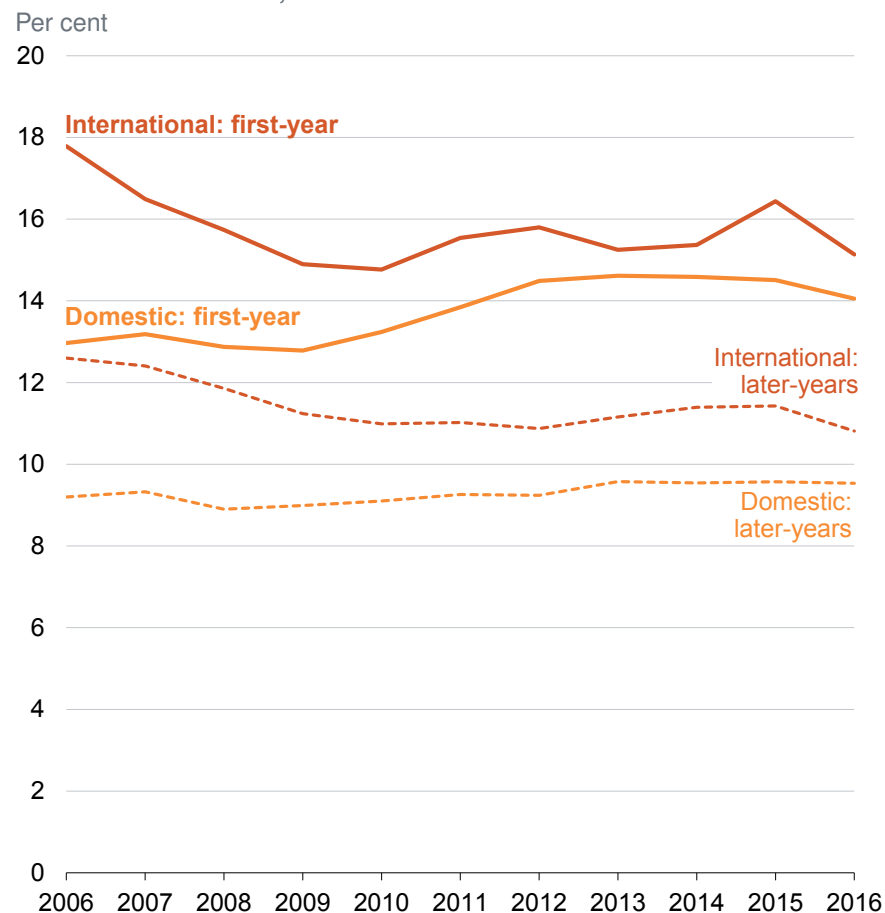
Of the students who started a bachelor degree in Australia in 2007, 22 per cent left without completing a degree in the following nine years. Four per cent were still enrolled after nine years, and the remaining 74 per cent had completed a degree (not necessarily the one they started).<sup>93</sup> Analysis over shorter time periods suggests completion rates are trending slightly down. After six years, 63 per cent of the students who commenced in 2011 had finished a course, down from 65 per cent who commenced in 2008 (Figure 3.3 on the next page). The likely reason is that universities took more students with characteristics that put them at elevated risk of not completing, such as a low ATAR or part-time study.<sup>94</sup> Short-term attrition rates – students not enrolled in what would have been their second year – stabilised for those commencing in 2014 and 2015.<sup>95</sup>

93. Department of Education and Training (2017d). The international student completion rate over nine years was 78 per cent for those starting in 2007.

94. Norton et al. (2018, pp. 24–29, 33–36).

95. Department of Education and Training (2017a, appendix 4.1). International student attrition is increasing but remains much lower than for domestic students: 9 per cent compared to 15 per cent.

**Figure 3.2: Subject fail rates for bachelor-degree domestic and international students, 2006–2016**



Notes: The calculation is subjects passed as a percentage of all subjects passed or failed. Withdrawn, yet-to-be-determined and missing subject results are ignored. Subjects dropped before the census date are not recorded in the data. This may bias the results in favour of domestic students, because for visa reasons international students must maintain an enrolment of at least 75 per cent of the full-time level. Onshore students only.

Source: Department of Education and Training (various years[a]).

Attrition is not necessarily bad. Some students are just trying university without having clear goals. Many students who don't complete leave in their first year, limiting their time and money costs.<sup>96</sup> Students often also benefit from their time at university, even if they do not complete a degree. In a Grattan Institute survey, 40 per cent of people who had dropped out said they would still begin their degree despite knowing what they know now, suggesting that the benefits outweighed the costs. But 10 per cent of students who drop out have studied for three years or more, accumulating substantial HELP debts.<sup>97</sup>

A 2018 report from the Higher Education Standards Panel (Section 8.2.2) recommends a range of measures to increase completion rates, and the Government says it supports the recommendations.<sup>98</sup>

### 3.3 Student satisfaction with teaching

Since the early 1990s, completing students at Australian universities have received a course experience questionnaire (CEQ). Core questions cover teaching, generic skills and overall satisfaction.

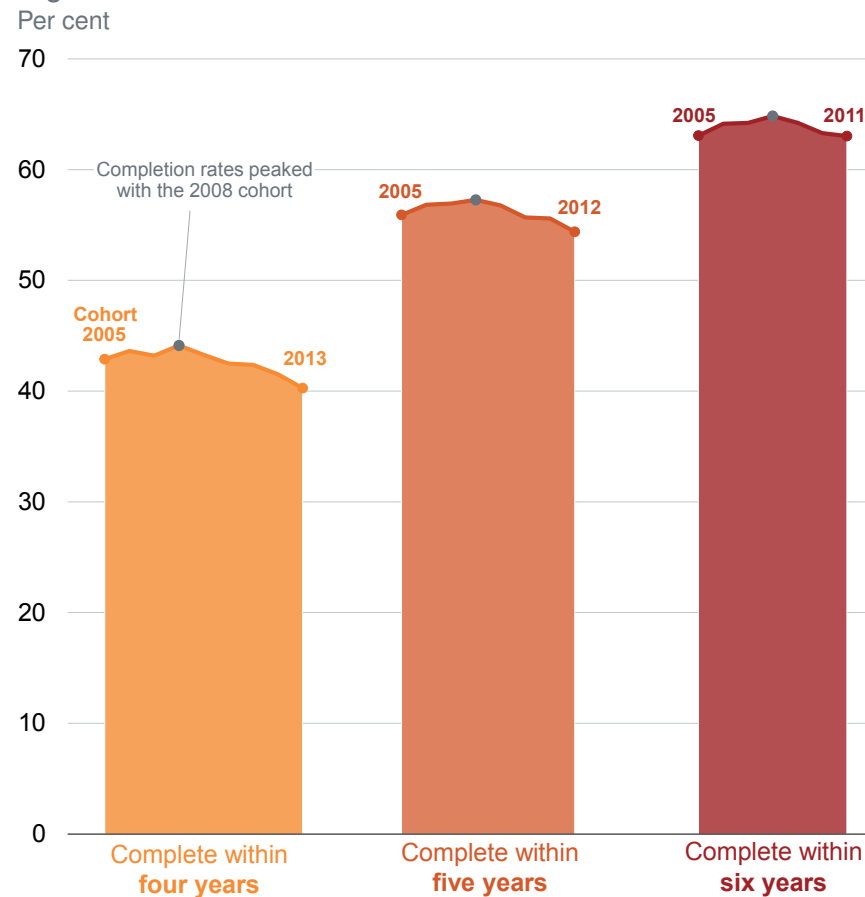
The initial CEQs revealed low levels of satisfaction with teaching, but a positive trend began in the mid-1990s. Each year, more completing students indicated satisfaction with elements of university teaching (defined as choosing one of the top two points on a five-point scale). The surveyed elements included the level and helpfulness of feedback, teaching staff effort and effectiveness, whether students were motivated by teaching staff, and whether teaching staff made an effort to understand difficulties students were having.

96. Norton et al. (2018, pp. 8–12, 17–18).

97. Ibid. (pp. 16–22).

98. HESP (2018). These recommendations significantly overlap with those of Norton et al. (2018, chapters 5 to 8).

**Figure 3.3: Completion rates for the 2005–2013 commencing bachelor degree cohorts**



Notes: Commencing domestic bachelor-degree students at public universities. Based on the first enrolment between 2005 to 2012 of each student. A common student identification number is used to track students over time, including moves between universities. Students did not necessarily complete their original course, but did complete a bachelor degree.

Source: Cherastidtham et al. (2018).

Figure 3.4 shows average responses to these questions from completing bachelor-degree students. It was not until 2007 that majority satisfaction was achieved. The trend until 2016 was consistently towards more satisfaction. Due to survey methodology changes in 2010 and 2016 there are breaks in the time series.<sup>99</sup> Flat results in 2016 and 2017 suggest satisfaction levels are stabilising.

Possible reasons for the long-term improvement in student satisfaction with teaching include research into teaching methods, teacher training, better information from student surveys, linking academic promotion to teaching performance, improved technology, increased regulation of standards, occasional government financial incentives, and more market competition.<sup>100</sup>

Despite improved student satisfaction with teaching, Australian students seem less satisfied than their British or American counterparts.<sup>101</sup>

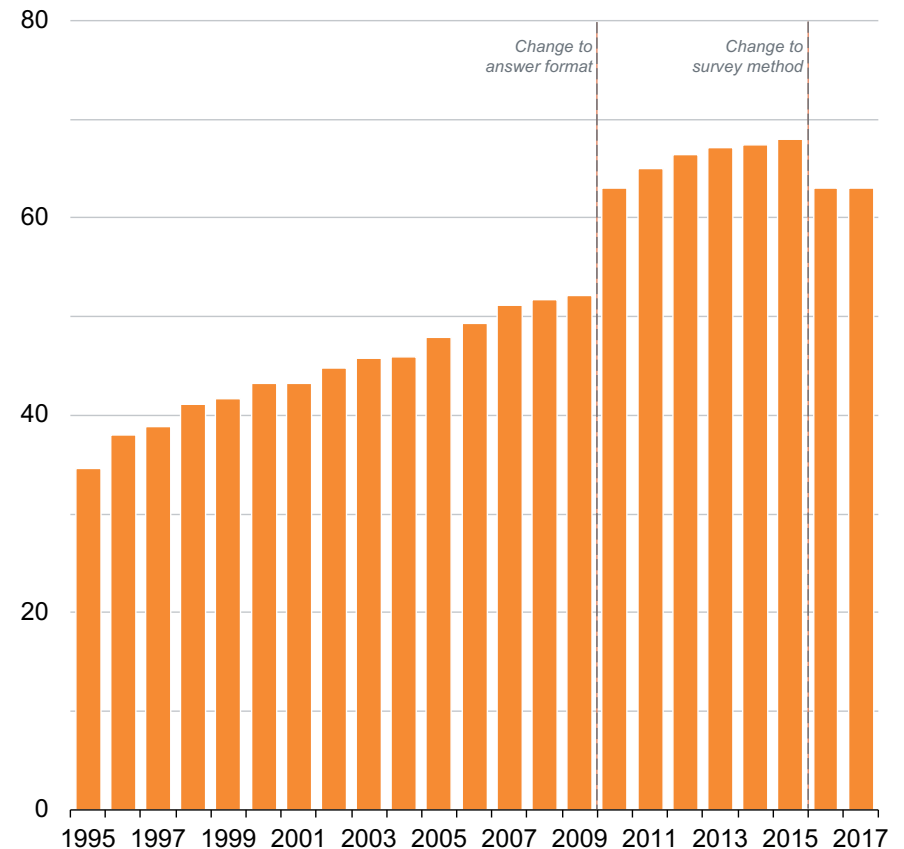
Since 2012, Australia has also had a national survey of current students, now called the Student Experience Survey. Its specific questions on curriculum, teaching and assessment differ from those in the CEQ, and there are other important differences in how the results are calculated and reported. These produce higher satisfaction

99. In 2010 a mid-point in a five-point scale, which had previously been unlabelled, was described as 'neither agree nor disagree' with the proposition being offered (for example, 'the staff put a lot of time into commenting on my work'.) Possibly this means that satisfaction using the top two point definition was understated for previous years. However, CEQ respondents may have interpreted 'neither agree nor disagree' as meaning 'I have no opinion', while they could have interpreted the unmarked mid-point as representing a view, such as 'middling' or 'mediocre' but not unsatisfactory. In 2016, the survey was taken over by another organisation, and different sampling and data collection methods were used.

100. For discussion of possible mechanisms for teaching improvement see Norton et al. (2013, chapter 6) and Probert (2015).

101. Social Research Centre/Department of Education and Training (2018b, p. 25); and Department of Education and Training (2018c, p. 61).

Figure 3.4: Average student satisfaction with teaching, 1995–2017  
Per cent



Note: Uses the 'good teaching' scale in the CEQ.

Sources: GCA (various years) and Department of Education and Training (2018c).



scores than reported in Figure 3.4.<sup>102</sup> Between 2012 and 2017, student satisfaction with teaching quality has varied in a narrow range between 79 per cent and 82 per cent with 80 per cent recorded in 2017.<sup>103</sup> As with the CEQ, results from the Student Experience Survey suggest that student satisfaction with teaching has stopped improving.

In both the CEQ and the SES, international students are less satisfied than domestic students with teaching.<sup>104</sup>

The 2017 Student Experience Survey included 58 non-university higher education providers (NUHEPs). Average overall satisfaction with teaching in NUHEPs matched that of universities, but with a wide range between institutions, from a low of 62 per cent to a high of 98 per cent.<sup>105</sup> Teaching satisfaction results by university, NUHEP and field of education can be found on the Quality Indicators for Learning and Teaching (QILT) website.<sup>106</sup>

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102. The Student Experience Survey allows students to give a clear 'mediocre' or 'middling' response, by choosing options such as 'some' and 'fair'. All responses are coded on a 0-to-100 scale, and students averaging 55 or more are classified as satisfied. See Social Research Centre/Department of Education and Training (2018b, pp. 81–82).

103. *Ibid.* (p. 4).

104. GCA (2015, table H); and Social Research Centre/Department of Education and Training (2018b, p. 6).

105. Social Research Centre/Department of Education and Training (2018b, pp. 19–23).

106. [www.qilt.edu.au](http://www.qilt.edu.au).

## 4 The higher education workforce

The higher education workforce has grown over the last decade. Casually-employed staff, who do much of the teaching, are an increasing share of all academic staff. Among academic staff with permanent or fixed-term appointments, teaching-only staff are growing at the fastest rate, although from a small base.

Most university staff are not academics. For the last 35 years, about 57 per cent of university staff with permanent or fixed-term appointments have performed a variety of non-academic roles. The largest group are faculty support staff, but the fastest growth is in student welfare services staff.

### 4.1 People employed in higher education

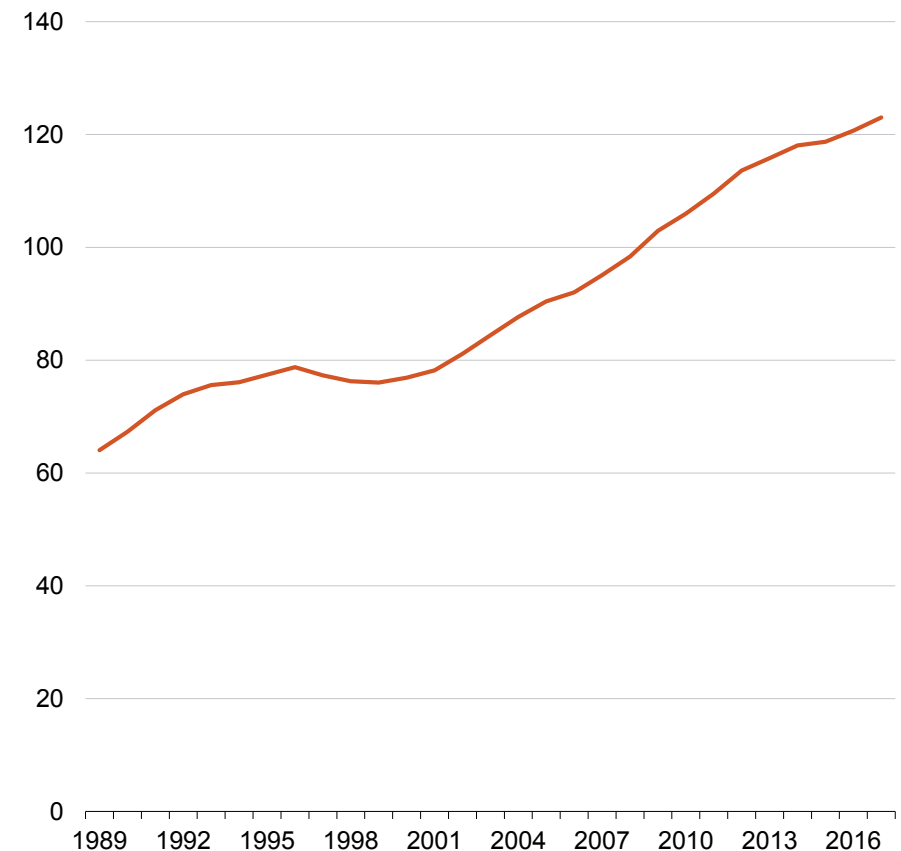
Australia's universities employed 123,000 people on a permanent or fixed-term contract basis in 2017. The total number of university employees has increased in most years since the late 1990s, as Figure 4.1 shows. These statistics omit casually employed staff. In mid-2018 an estimated 94,500 people were employed on a casual basis, predominantly in teaching-only academic roles.<sup>107</sup> In the non-university higher education sector, staff numbers are reported on a full-time-equivalent basis only.<sup>108</sup> Non-university higher education

107. Data supplied by UniSuper, as of 30 June 2018. This is an imperfect count because it is based on patterns of superannuation contributions rather than direct information about employment status. It includes people with UniSuper accounts who no longer work in higher education, and omits others who work in higher education but use another superannuation fund. In 2016, 55 per cent of full-time-equivalent casual staff were in teaching-only roles: Department of Education and Training (2017e, appendix 1.7).

108. For example, two part-time staff each working half the hours normally expected of a full-time staff member would be counted as one full-time equivalent.

**Figure 4.1: Number of permanent and fixed-term staff in universities, 1989–2017**

Thousands



Source: Department of Education and Training (2017e) and predecessor publications.

providers (NUHEPs) employed 3,200 full-time-equivalent academics in 2016, with 38 per cent engaged on a casual basis.<sup>109</sup>

In 2017, 55,600 permanent or fixed-term contract staff had academic job classifications. Most academics are employed to teach and research, or to research only (the research workforce is discussed in Section 5.1). Teaching-only staff are the smallest (11 per cent) but fastest-growing part of the academic workforce. Sometimes this growth reflects a genuine university commitment to teaching. But it is also explained by reclassifying teaching and research staff whose research output is too low, and university enterprise agreement provisions allowing some casually-employed teaching staff to convert to on-going employment.<sup>110</sup>

Academic staff are outnumbered by the 67,400 permanent or fixed-term contract employees with non-academic job classifications. There is a common belief that non-academic staff, often called ‘general’ or ‘professional’ staff, are growing as a share of the university workforce.<sup>111</sup> But for permanent and fixed-term contract employees, the non-academic share of the total workforce has been stable at around 57 per cent for at least the past 35 years, on a full-time-equivalent basis.<sup>112</sup>

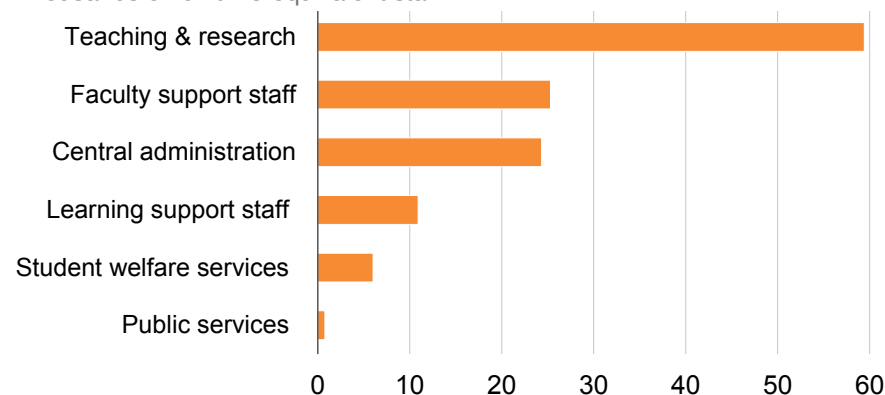
No data source gives a fully satisfactory account of higher education work. Both academic and non-academic work is outsourced, casual employees need to be counted (explored further in Section 4.3), and job classifications do not necessarily describe daily duties.<sup>113</sup> Official

university statistics describe non-academic staff according to where they work in the university, not their role.

Within these constraints, Figure 4.2 estimates the distribution of staff responsibilities in 2016. On a full-time-equivalent basis, including casual staff, 47 per cent of the university workforce is in teaching or research. Twenty per cent of university employees are faculty support staff, 19 per cent work in central administration (which includes building and grounds maintenance), 9 per cent are in learning support services (such as libraries), and 5 per cent work in student welfare services

**Figure 4.2: Staff by area of university, 2016**

Thousands of full-time-equivalent staff



*Notes: 2016 data used because it includes a count of casual staff. Most data is based on staff employed by area of the university. However, some staff with academic ranks not engaged in teaching or research in a department or faculty have been reclassified as ‘faculty support staff’, while some staff who are not in a department of faculty who are engaged in teaching or research are classified as such. Depending on university organisational structures, roles performed by ‘faculty support staff’ could be the same as those in other non-academic categories. The figures are approximate due to data limitations.*

*Sources: Department of Education and Training (2017e) and Department of Education and Training (2018a).*

109. TEQSA (2018b, p. 42). There is no information on non-academic staff.

110. Probert (2013); and Andrews et al. (2016).

111. Forsyth (2014, chapter 7).

112. Department of Education and Training (2017e, table 1.2) and DEET (1993, p. 137). For full-time staff only, the 57 per cent was also recorded in 1967: Commonwealth Bureau of Census and Statistics (1967).

113. For example, some people with academic titles are primarily administrators, while some non-academic staff are classified as ‘research only’.

(such as health and counselling). In percentage terms, student welfare services staff are increasing at the fastest rate. Universities may be responding to significant minorities of students reporting mental health issues.<sup>114</sup>

The 2016 Census provides detailed occupational data for people working in higher education, which can clarify some aspects of non-academic employment. Seventeen per cent of higher education staff are in clerical or administrative roles, 10 per cent are managers, and 5 per cent are in technical or trade occupations.<sup>115</sup>

## 4.2 Entry into the academic workforce

Unsurprisingly, the main motivations for seeking academic work are intellectual. In a 2010 survey of Australian academics, more than 90 per cent agreed that opportunities for intellectually stimulating work, passion for a field of study, and the opportunity to contribute to developing new knowledge drew them to academia.<sup>116</sup> A survey of research students in the same year had similar findings. Developing knowledge, and the interest and challenge of academic work, were rated most highly as reasons to choose academic over other types of work.<sup>117</sup>

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114. Cvetkovski et al. (2012). Health or stress issues are the most commonly-cited reason for considering leaving university without completing a course: Social Research Centre/Department of Education and Training (2018b, p. 29).

115. ABS (2017a). Fifty-five per cent of higher education jobs in the ABS 'professional' category are clearly academic, mainly 'university lecturers and tutors', but apart from some occupations clearly labelled as 'scientist' there is no clear category for research-only staff. Many higher education professional jobs are too ambiguous to allocate within universities to academic or non-academic functions. A statistician, doctor, lawyer, engineer or one of many other highly-educated professionals could be either.

116. Bexley et al. (2011, p. 13).

117. Edwards et al. (2011, p. 39).

Over time, the PhD has become the expected qualification for an academic. In 1991, fewer than half of all academics had a PhD; by 2017 nearly 70 per cent had one.<sup>118</sup> Some academic staff are enrolled in, but yet to complete, research qualifications.<sup>119</sup> Most research students aspire to an academic job, although fewer see this as a realistic goal.<sup>120</sup>

Teaching staff must have a PhD or a qualification level above the course they are teaching, or equivalent professional experience.<sup>121</sup> The latter exception recognises the subject-matter expertise of people working outside universities, along with the insights professional practice can bring to teaching.

## 4.3 Casual and fixed-term academic employment

Temporary academic jobs have become more common (Figure 4.3 on the following page).<sup>122</sup> On a full-time-equivalent basis, casual staff are 23 per cent of the university academic workforce. On a headcount basis, casually-employed academics are probably a majority of the academic workforce.<sup>123</sup> Academic casual staff are usually employed at the most junior academic rank.

Casual academic employment has benefits. For students, casual teaching staff can offer expertise – often from professional practice – that full-time academics lack. About a quarter of casual academic staff primarily work outside the university sector.<sup>124</sup> For aspiring academics

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118. Department of Education and Training (2017e, table 4.2); and DEET (1993, p. 149).

119. Bexley et al. (2011, p. 41).

120. Edwards et al. (2011, p. 22); and Bentley et al. (2017, pp. 29–30).

121. Department of Education and Training (2015a, A3.2).

122. For more detail on employment conditions for casuals, see Andrews et al. (2016).

123. See May (2011) for an analysis based on 2010 data. The more recent figures cited earlier in this chapter are consistent with this conclusion, but certainty is not possible due to data limitations.

124. May et al. (2013, p. 264).

studying for a PhD, casual teaching work helps them financially and gives them experience relevant to their future careers. About half of casually employed academics are also students, mostly in PhD programs.<sup>125</sup>

Yet while casual academic employment has benefits, low pay and job insecurity can produce frustration for aspiring academics. Some academics have been employed casually for long periods. Of the casual staff who responded to a 2017 union survey, 60 per cent reported having worked on a casual or sessional basis for six years or more.<sup>126</sup> An earlier survey found that one-in-five casual teaching staff taught at more than one higher education institution.<sup>127</sup> Less than 20 per cent of respondents to the 2017 survey were satisfied with their work contract, although most did not want a full-time job.

Although casual employment causes difficulties for affected staff, it will remain common. Casual staff, who can be hired and fired more easily than continuing staff, help universities manage volatility in student numbers.<sup>128</sup> As universities must compete for domestic and international students (Section 7.2), enrolment fluctuations are inevitable.

Casual employment also reflects the unusual schedule of universities. Academic years are typically divided into two semesters. The undergraduate teaching period runs for six months a year, with about two more months for exams. Funding policy does not support giving all academic staff research time in non-teaching periods, so it is cheaper for universities to hire staff only for teaching periods, rather than all year round.

125. Bexley et al. (2011, p. 38); and Strachan et al. (2012, p. 59).

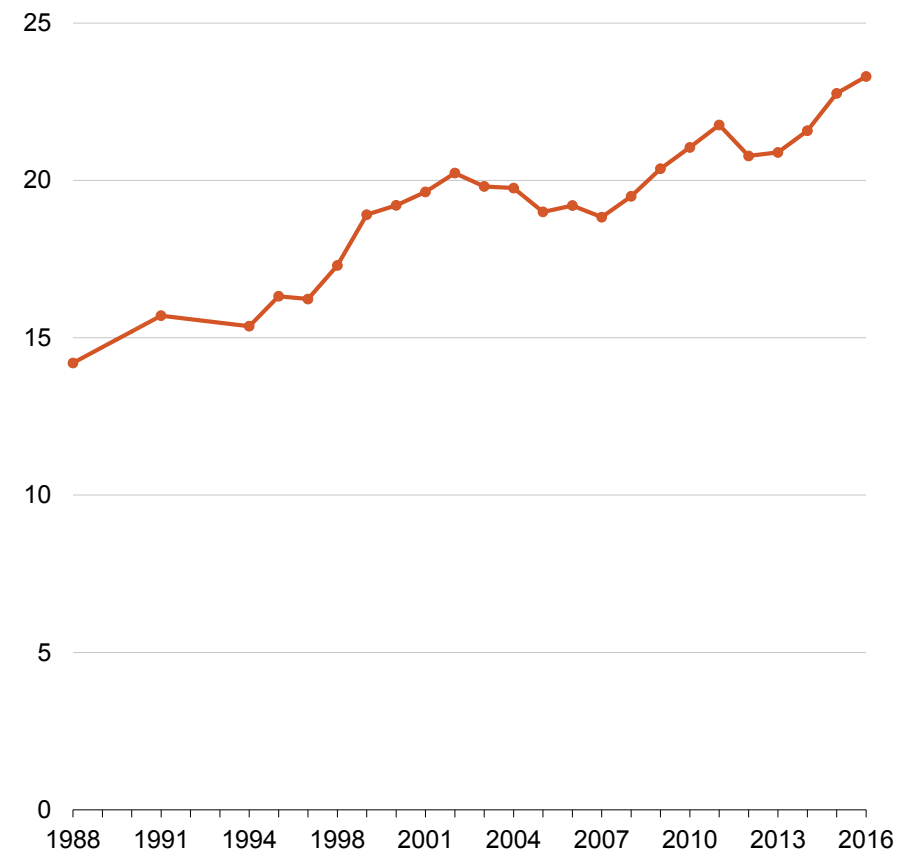
126. Evans (2017).

127. NTEU (2015b, p. 22).

128. Andrews et al. (2016, p. 1).

**Figure 4.3: Casual employment as a share of the full-time-equivalent academic workforce, 1988–2016**

Per cent



Sources: May et al. (2013), Department of Education and Training (2017e, appendix 1.17) and DEET (1993).

In 2017, 46 per cent of non-casual academic staff were on fixed-term contracts – slightly down on previous years because permanent staff numbers increased more quickly between 2013 and 2016 (Figure 4.4). In 2017, growth in fixed-term staff numbers outpaced growth in permanent staff.

Most fixed-term academic staff, 52 per cent in 2017, are in research-only positions. This reflects the time-limited nature of much research funding. The major research agencies – the Australian Research Council and the National Health and Medical Research Council (Section 6.4.1) – award project funding of up to five years only. Academic employment can be built on successive fixed-term contracts. In 2015, 40 per cent of fixed-term contract employees had been on them for six years or more.<sup>129</sup>

Within universities, permanent academic appointments on a teaching and research or research-only basis are seen as the ideal. But the way universities are organised and funded does not support this ideal. Chapter 6 explores funding issues in detail.

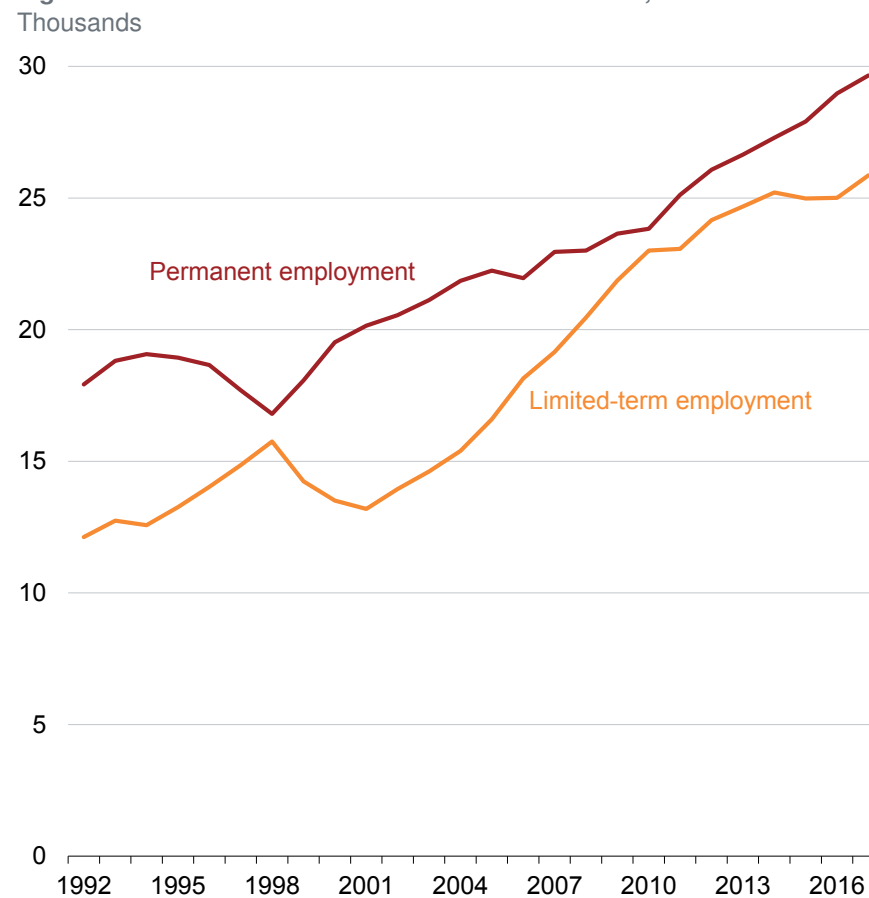
#### 4.4 Pay and job satisfaction

For research students, pay is one of the few aspects of work life that they believe will be worse in academia than in alternative careers.<sup>130</sup> Academic salary ranges in 2018 are reported in Table 4.1 on the next page. Some universities have higher base pay rates than others. The lowest base rate is \$63,000 for an associate lecturer. The highest base rate is \$194,000 for a professor. Superannuation contributions, paid in addition to these amounts, are typically much larger than in other industries. In practice, salary loadings are sometimes paid to make universities more competitive in the labour market. In a 2011 survey,

129. Grattan Institute calculations from NTEU (2016, p. 4).

130. Edwards et al. (2011, p. 39).

Figure 4.4: Permanent and fixed-term academic staff, 1992–2017



Notes: Research-only staff holding jobs without academic classifications are excluded from this chart. Their numbers are declining, but in 2017 300 had permanent positions and 1916 had fixed-term contracts.

Source: Data special request from the Department of Education and Training.

15 per cent of female and 22 per cent of male academics reported receiving a loading.<sup>131</sup>

Since 2001, the proportion of permanent and fixed-term academic staff at professor or associate professor level has increased from 21 per cent to 29 per cent. The other levels have fallen as a share of all academic staff (although the most junior has increased in full-time-equivalent terms if casual staff are included).<sup>132</sup> With more senior staff, average academic salaries are increasing.

Various surveys of academics since the early 1990s have shown issues with academic job satisfaction.<sup>133</sup> In some surveys, only half of academics were satisfied with their jobs. Australian academics also appeared less satisfied with their jobs than their peers in other countries.<sup>134</sup> In 2011, 69 per cent of academic staff in Australia were satisfied with their job overall.<sup>135</sup> The most recent academic staff survey, conducted by the National Tertiary Education Union (NTEU) in 2017, found 77 per cent agreed with the proposition that ‘my work gives me satisfaction’. But this may be satisfaction with their core academic work, rather than their overall employment. The same survey showed dissatisfaction with workloads, lack of promotion, and senior management.<sup>136</sup>

**Table 4.1: Academic pay ranges, 2018**

Rank	Minimum	Maximum
Professor	\$168,000	\$194,000
Reader/Associate Professor	\$134,000	\$166,000
Senior Lecturer	\$111,000	\$144,000
Lecturer	\$91,000	\$121,000
Associate Lecturer	\$63,000	\$98,000

*Notes: Pay ranges presented exclude superannuation contributions. Employer superannuation contributions of 17 per cent are common. Many universities are negotiating with the NTEU on new enterprise agreements in 2018, which are likely to change these figures.*

*Source: University websites and enterprise agreements.*

131. Strachan et al. (2012, p. 56).

132. Department of Education and Training (2018a).

133. Bentley et al. (2013a, p. 30).

134. Bentley et al. (2013b, p. 247).

135. Strachan et al. (2012, p. 39).

136. NTEU (2018, pp. 16–17).



## 5 Research in higher education institutions

After a decade of rapid growth, the university research workforce, including staff and research students, has declined in recent years. Australian university research has a global reach, with more than half of scientific publications having an international co-author.

Australian university research is skewed towards scientific and technological fields, with medical research a priority. Over the last twenty years, research has become less focused on knowledge for its own sake, with most research aimed at more practical or commercial outcomes.

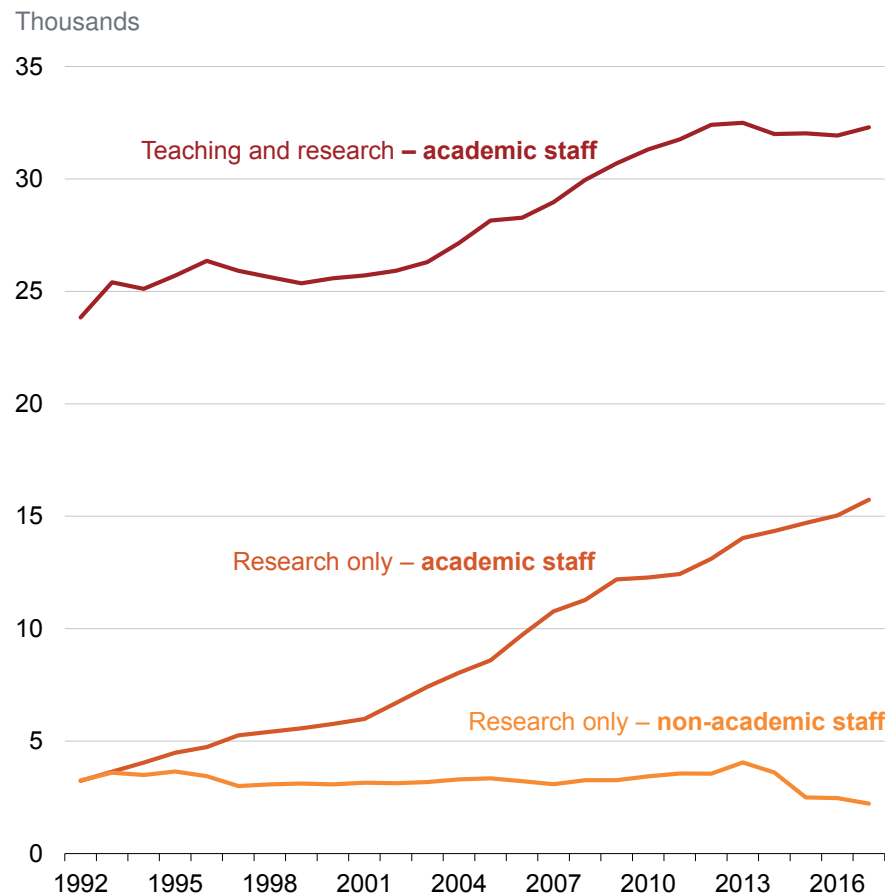
Although the annual number of research publications continues to increase, the rate of growth has slowed.

### 5.1 The research workforce

The higher education research workforce overlaps with, but is not the same as, the academic workforce described in Chapter 4. This is mainly due to research students, but also because academics with teaching-only positions are excluded, while research-only staff with non-academic classifications are included.

In 2017, 48,000 academics with permanent or fixed-term positions had a research or a teaching-and-research function (Figure 5.1). With other research staff added, the university research workforce was 50,250. With teaching-and-research roles under pressure from largely separate teaching and research funding (Section 6.4.1), specialised research-only academic staff have increased from 12 per cent of academic research staff in 1992 to 33 per cent in 2017. In recent years, this growth has been offset by declining numbers of non-academic staff with research roles. Their combined total of 17,950 is slightly lower than it was in 2013.

**Figure 5.1: Numbers of teaching-and-research and research-only staff, 1992–2017**



Source: Special data request from the Department of Education and Training.

On a full-time-equivalent basis, including casual staff, the research-only and research-and-teaching workforce was 43,435 in 2016, more than 1,000 below its 2013 peak. Casuals play a minor role in research compared to teaching, at 8 per cent of full-time-equivalent research-only and teaching-and-research positions in 2016.<sup>137</sup>

Not all of the university research workforce is funded by universities. A quarter of research outputs in 2015 included a contribution from a person who volunteered, such as an emeritus professor or an honorary fellow, or who was employed by another organisation, such as a medical research institute.<sup>138</sup>

Research students are another source of unpaid or lowly-paid research labour. Their numbers have increased every year since 1990 (Figure 5.2). Including overseas students, who make up 32 per cent of enrolments, there were 66,405 research students in 2016. High rates of part-time enrolment bring full-time-equivalent numbers down to 45,470, which is less than in 2014 or 2015.<sup>139</sup> In 2016, 8,903 PhDs were completed, along with 1,638 masters by research degrees.<sup>140</sup>

On both a headcount and full-time-equivalent basis, postgraduate research students outnumber university staff with research responsibilities. On ABS figures, 57 per cent of all research and development ‘person years of effort’ in higher education institutions comes from postgraduate students.<sup>141</sup>

International collaboration supplements Australia’s research capacity. In 2016, Australian universities had nearly 5700 academic or research collaboration agreements with higher education institutions overseas,

137. Department of Education and Training (2018a).

138. ARC (2015a, p. 70). Academics on exchange from other universities are paid by a university, but not necessarily by the university they are currently working at.

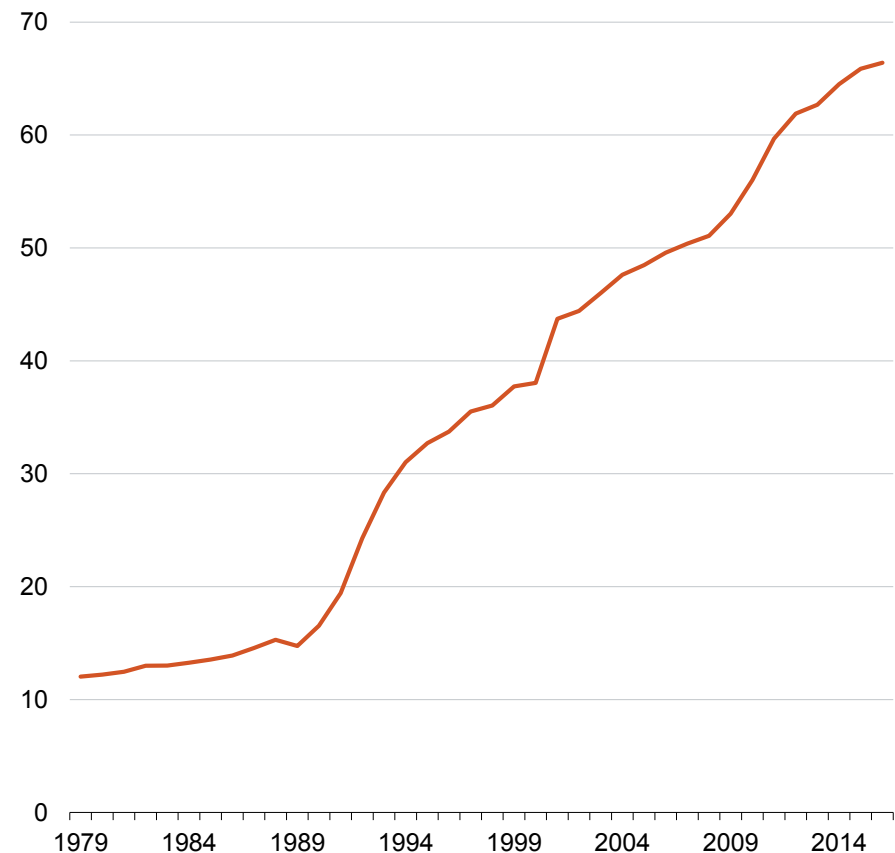
139. Department of Education and Training (2018a).

140. Department of Education and Training (2017a).

141. ABS (2018c).

**Figure 5.2: Enrolments in research degrees, 1979–2016**

Thousands of students



Note: Domestic and international students.

Sources: Department of Education and Training (2014) and Department of Education and Training (2018a).

up from just over 3000 in 2003.<sup>142</sup> In the 2008–2014 period, more than half of Australian scientific publications had an international co-author.<sup>143</sup>

## 5.2 Research topics and types

Research spending in Australia is strongly skewed towards scientific and technology disciplines, and medical science in particular. Medical and health research accounted for 28 per cent of higher education research spending in 2016, with other sciences, engineering and IT together responsible for 44 per cent. About 13 per cent of research spending is on the humanities and social sciences.<sup>144</sup> Within health research, cancer, infectious diseases and cardiovascular diseases get the greatest financial support.<sup>145</sup> In 2015, the Commonwealth Government set research priorities. These are organised around themes rather than disciplines – food, health, soil and water, transport, cyber security, energy and resources – but are unlikely to change the historical discipline emphases of Australian university research.<sup>146</sup>

Research is classified using OECD categories according to its approach to knowledge as well as its field. As Figure 5.3 shows, ‘pure basic research’, which is the pursuit of knowledge without looking for long-term benefits other than advancing knowledge, has declined as a proportion of all research spending since 1994. In 20 years it went from 36 per cent to 23 per cent of all research expenditure. With total university research spending increasing substantially (Section 6.4.2),

142. Universities Australia (2016, p. 5).

143. UNESCO (2016, p. 790).

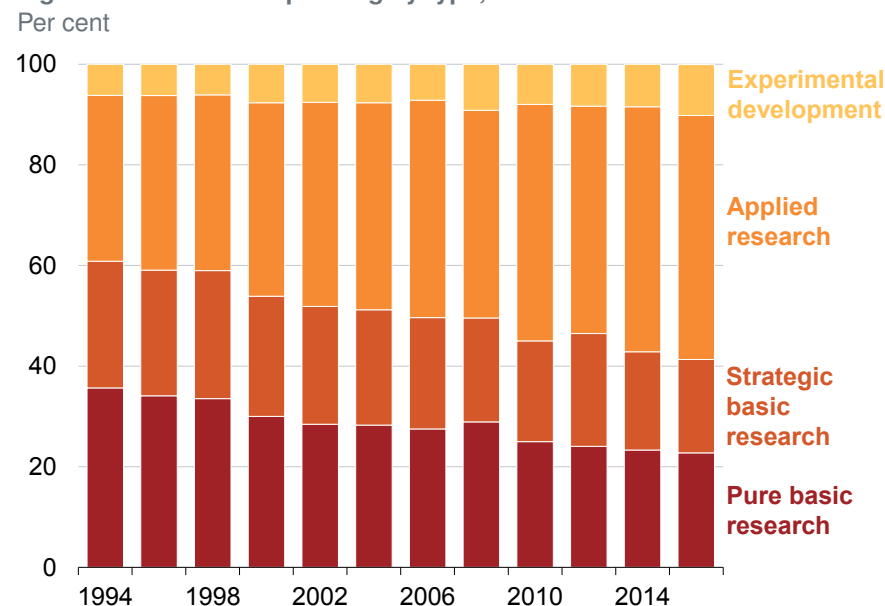
144. ABS (2018c). Humanities and social sciences includes economics and creative arts.

145. NHMRC (2018). This funding goes to medical research institutes as well as universities.

146. Australian Government (2015). To date, a research topic being a priority theme has had little effect on success rates in competitive grant projects: ARC (2018a) and ARC (2018b).

however, basic research spending increased significantly in real terms until 2012.<sup>147</sup> The shift has been to applied research, a category covering research aimed at finding possible uses for basic research or new ways of achieving specific and predetermined objectives. If government policy is successful, the trend towards applied research will continue, as research funding policy favours collaboration with industry (Section 6.4.1).

Figure 5.3: Research spending by type, 1994–2016



Source: ABS (2018c).

147. Basic research declined slightly in real terms between 2012 and 2014 and then increased to 2016, but is still below 2012 levels: calculated from ABS (2018c).

### 5.3 Research outputs

Publications are the main academic research output. These include books, book chapters, papers and articles. Until 2014, data was published on all these outputs, with articles the most common form of publishing.<sup>148</sup> A full count of research publications is not available, but international research databases provide numbers of articles with authors affiliated to Australian universities. While these sources cover large numbers of academic journals, they are oriented to science more than the social sciences and humanities, and so omit some publications. The Scopus database, used in Figure 5.4, identified nearly 67,000 research journal articles in 2017 with Australian connections. International co-authors mean that Australian universities cannot claim full credit for all these publications.

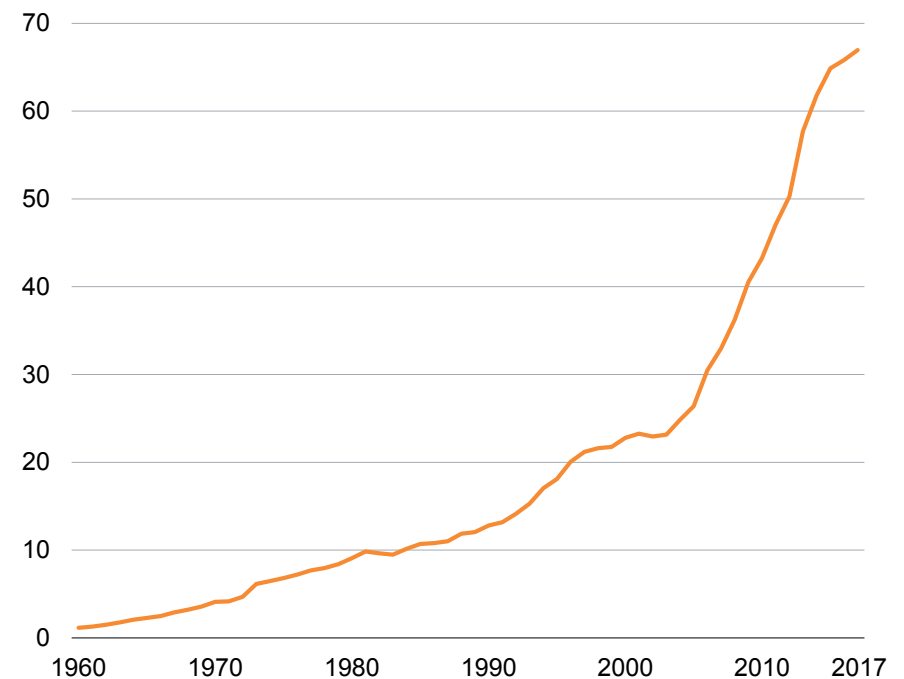
Figure 5.4 shows one aspect of how universities have transformed themselves in recent decades. From 2004 to 2014, the annual increase in journal articles never fell below 6 per cent. In 2016 and 2017, growth slowed to below 2 per cent per year. Because it takes time to conduct research, and because academic journals are often slow to publish articles, research outputs as an indicator lag behind staff and funding numbers. Slow growth in 2016 and 2017 is likely to reflect the trends in staff numbers shown in Figure 5.1, which in turn are affected by the funding issues explored in Section 6.4.1.

Other research outputs have also increased. ‘Invention disclosures’ – a notification of a novel and useful device, material or method to a university’s technology transfer office – more than doubled, to 982, between 2000 and 2015.<sup>149</sup> The number of licences or options earning or expected to earn income increased more than four-fold over

the same period, to 2,073.<sup>150</sup> The number of firms getting ideas or information for innovation for business increased between 2007 and 2015, before falling back (Section 9.4). Academics also share their research expertise for free as part of their community engagement activities (Section 1.3.6).

**Figure 5.4: Research journal articles with at least one Australian university affiliated author, 1960–2017**

Thousands of publications



Source: Elsevier (2018).

148. Department of Education and Training (2015c). This was discontinued due to a change in research block grant funding policy (Section 6.4.1). A 1997–2014 time series is available in Norton and Cakitaki (2016, p. 40).

149. Larkins (2011, p. 218); and DIIS (2017, table 1).

150. ARC et al. (2002, p. 97); and DIIS (2017, table 1).

## 6 Higher education finance – the macro picture

Higher education providers had revenues of \$38 billion in 2016–17, with eighty per cent of this amount earned by public universities.

Although more than half of university revenue comes from government grants or HELP loans, the government share is falling. In 2018, government spending on tuition subsidies will decline in real terms for the first time in fifteen years, after subsidies increased by 80 per cent during this period. Lending to students through the HELP scheme continues to increase, although HELP's total cost to the government is declining, mostly due to restricting lending to vocational education students.

Total university research spending increased between 2014 and 2016, but the research expenditure boom that began in the early 2000s is over. Direct government research spending now finances only a little over a third of university research expenditure.

International student revenue is increasing rapidly, exceeding \$9 billion in 2017, making it the single largest source of revenue for public universities.

Overall, most universities are in a sound financial position, but with flat government revenues they are vulnerable to a downturn in the international student market.

### 6.1 Higher education as an industry

As participation in higher education has increased, it has become a more economically significant industry. In 2016–17, the total revenue of organisations offering higher education qualifications was \$37.9 billion, equivalent to about 2 per cent of GDP.<sup>151</sup> This includes income from

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151. TEQSA (2018b, p. 45).

teaching, research and other sources. Public universities dominate the industry, with revenues of \$30 billion in 2016.<sup>152</sup>

Over the past twenty years, higher education has become a significant export industry. The ABS estimates that international student fee revenue earned by all Australian higher education providers totalled \$7.6 billion in 2016 and \$9.3 billion in 2017.<sup>153</sup> International students also contribute to other industries, through their spending while in Australia.

### 6.2 Public spending on higher education – overview

Public spending on higher education takes four main forms:

- direct grants to higher education institutions, primarily for teaching (Section 6.3.1);
- student loans that are taken out by students but paid to higher education institutions on behalf of students (Section 6.3.2);
- student income support payments, which are paid directly to students (Section 6.3.4); and
- direct grants to higher education institutions, primarily for research (Section 6.4.1).

Table 6.1 on the following page provides an overview of these funding streams. It omits minor grants from government agencies other than the Department of Education, short-term programs, and legacy superannuation costs. In total, higher education-related government expenditure for 2017–18 was \$13.86 billion.

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152. Department of Education and Training (2017f).

153. ABS (2018d, table 9). For financial year, see ABS (2017b, table 9).

Eligibility for public funding depends in the first instance on the legal status of each higher education institution. Institutions that meet basic criteria can offer their students FEE-HELP loans (discussed in Section 6.3.2), which also makes their students eligible for income support (discussed in Section 6.3.4). But eligibility for other funding categories is largely restricted to institutions specifically listed in the *Higher Education Support Act 2003*.

The ‘Table A’ list contains all universities established by a government, plus the Australian Catholic University and the Batchelor Institute of Indigenous Tertiary Education. Though ‘public university’ is not a legal concept, in common usage the term refers to Table A universities. They are entitled to receive money from all teaching and research funding schemes, as well as money under programs for disadvantaged students.<sup>154</sup>

‘Table B’ contains Bond University, the University of Notre Dame, the University of Divinity, and Torrens University. This listing entitles them to FEE-HELP and research funding, and makes them eligible for teaching subsidies in courses deemed to be national priorities. In practice, only Notre Dame receives these subsidies.

‘Table C’ gives FEE-HELP to students in higher education providers operating in Australia but controlled from overseas. Carnegie Mellon University students benefit from Table C listing.

In contrast to the process for higher education providers accessing FEE-HELP, there are no rules determining which institutions are on Tables A, B or C, and there is no application process. Entitlements are largely a matter of history and politics.

154. The main programs are the Higher Education Participation and Partnerships Program (HEPPP), which spent \$138.3 million in 2017–18, and the Disability Support Program, which spent \$7.4 million in 2017–18: Department of Education and Training (2018d, p. 48).

**Table 6.1: Overview of public higher education subsidies, 2017–2018**

Category	Sub-category	Description	Millions
<b>Teaching grants</b> (~\$7bn)	Commonwealth Grant Scheme	Funding based on the number of Commonwealth supported domestic student places. See Section 6.3.1.	\$7,000
<b>Loan costs</b> (~\$1.2bn) <i>Distinct from new lending of ~\$6.5b</i>	HECS-HELP, FEE-HELP, OS-HELP, SA-HELP & Student Start-up Loans	Costs are interest subsidies and debt not expected to be repaid. See Section 6.3.2.	\$1,232
<b>Income support for students</b> (~\$1.8bn)	Youth Allowance	Living expense support for students aged 16–24. See Section 6.3.4.	\$1,453
	Austudy	Living expense support for students aged 25 or more. See Section 6.3.4.	\$356
	ABSTUDY	Support for living expenses for Indigenous students. See Section 6.3.4.	\$53
<b>Research grants</b> (~\$3.3bn)	Competitive research grants	NHMRC. See Section 6.4.	\$627
	Performance-based block research grants	Research training and general research funding. See Section 6.4. ARC. See Section 6.4.	\$1,953 \$758
<b>Other grants</b> (~\$0.4bn)	Other recurrent grants	For example: equity, national institutes, TEQSA.	\$429
<b>Total</b>			\$13,861

*Notes: This table is largely based on annual portfolio Budget statements. In the chapter that follows HELP's costs are reported on a different basis. Spending on Youth Allowance, Austudy and ABSTUDY is estimated based on the share of recipients in higher education in June 2016. Student Start-up Loan costs are estimated using HELP doubtful debt. The table excludes state and local government spending.*

*Source: Department of Industry, Innovation and Science (2017a), Department of Education and Training (2018d) and Department of Social Services (2018a).*

An overview of different entitlements to public support is in Table 6.2 on the next page.

### 6.3 Spending on and by students

Spending on students, for both their tuition costs and living expenses, comes from a mix of public and private sources.

#### 6.3.1 Teaching grants for higher education institutions

The single largest source of public subsidy for higher education is the Commonwealth Grant Scheme (CGS). Public universities and their students have the main entitlements to CGS funding, as Table 6.2 shows. Although the funding legislation does not specifically say that the CGS is for teaching, its Constitutional foundation as a 'benefit to students' (Section 8.1) and its link with student numbers strongly imply that supporting teaching is its main purpose.

CGS funding for each higher education provider is principally calculated according to its number of Commonwealth-supported places. One 'place' is equivalent to the number of subjects normally taken by a full-time student (equivalent full-time student load, or EFTSL, has the same meaning as a place). The CGS payment per place depends on its discipline. All disciplines are allocated to one of eight funding 'clusters', each of which has its own Commonwealth funding rate, called a Commonwealth contribution (these rates and the separate student contribution rates are discussed in Section 7.1). These rates are indexed annually to CPI inflation.

For each cluster, the number of Commonwealth-supported student places is multiplied by its Commonwealth contribution funding rate. These cluster sub-totals are added together to calculate the core CGS funding for each higher education provider. Extra payments for regional locations, medical students and preparatory courses paid out of the CGS add to the total, but these are a small part of overall

Table 6.2: Overview of funding eligibility

Funding type	Table A	Table B	Table C	Other HE providers	OUA <sup>o</sup>
FEE-HELP loans	✓	✓	✓	✓	✓
Commonwealth supported places and HECS-HELP loans	✓	✓ Provided the place is in a 'national priority' category*	✓ Provided the place is in a 'national priority' category* <i>None in 2018</i>	✓ Provided the place is in a 'national priority' category*	~ Indirectly via universities delivering award programs
Research block grants	✓	✓	✗	✗	✗
Research training places	✓	✓	✗	✗	✗
ARC competitive grants	✓	✓	✗	✗	✗
NHMRC Grants	✓	✓	✓ None in practice	✗	✗
Student income support	✓	✓	✓	✓ If also eligible for HELP	✓

Notes: <sup>o</sup> Open Universities Australia; \*Based on ministerial decision. NHMRC guidelines do not preclude Table C institutions but none meet broader medical research requirements.



spending. Per student funding rates and the number of places are the key determinants of total funding. Section 7.2.1 outlines how the number of places is set.

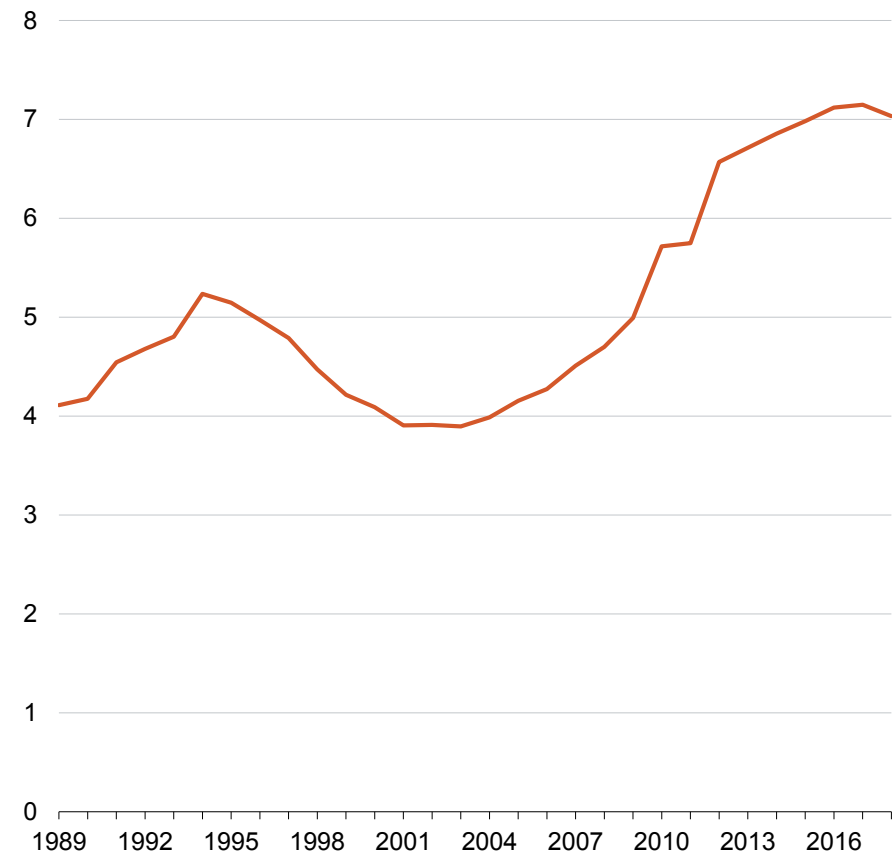
For 2018 and 2019, total CGS funding for bachelor-degree places at most universities has been set at no more than 2017 levels. Each university's CGS funding will therefore be the amount payable for student places delivered, or the maximum amount set by government, whichever is the lower. In practice, universities will not be paid their CPI indexation, or Commonwealth contributions for additional students beyond 2017 numbers.<sup>155</sup> The Government says it will increase funding in line with population growth from 2020, but only for universities that meet yet-to-be-determined performance criteria.<sup>156</sup> The number of postgraduate Commonwealth-supported places has also been cut.

Due to these policy changes, total CGS spending in 2018 will fall in real terms for the first time since 2003 (Figure 6.1). However, spending grew by 80 per cent in real terms in the intervening 15 years. The single most important reason for this growth was the easing, and then abolition, of controls on the number of bachelor-degree Commonwealth supported places (Section 7.2.1). Effectively, capping total CGS funding put these controls back in place.

The CGS is the main direct grant for teaching, but Commonwealth cash flow to universities for teaching also includes HELP loans, which are discussed in the next section.

**Figure 6.1: Core teaching grant funding, 1989–2018**

\$2018 billion



*Notes: Operating grant figures are used prior to 2005, less HECS charges and research funding subsequently distributed separately. Adjusted using CPI.*

*Source: Data from the Department of Education and Training .*

155. Based on a Freedom of Information request, the ABC reported university-level funding implications: Conifer (2018). For the amounts allocated to each university, see Department of Education and Training (2018e). For detail on how the limits were imposed, see Norton (2017a).

156. Birmingham (2017). Population growth for people aged 18–64.

### 6.3.2 Lending to students

Since 1989, the Commonwealth Government has lent higher education students money to pay for their courses. The loans are called ‘income contingent’ because repayments depend on the debtor’s income. Students or former students pay a share of their income through the tax system each year until the debt is fully paid off. In 2018–19, they begin repaying when their income reaches \$51,957 or more. At that point, they repay 2 per cent of all their income. The share of income repaid increases with earnings, up to a maximum of 8 per cent.<sup>157</sup> The repayment system will change from 2019–20, with a new initial repayment threshold of \$45,881, and repayments of between 1 per cent and 10 per cent of income, depending on earnings.<sup>158</sup> HELP debtors living overseas were exempt from repayment until the 2016–17 tax year. They must now report their worldwide income to the Australian Taxation Office (ATO), and repay using the same thresholds and rates as debtors in Australia.

#### Student loan schemes

Australia’s income-contingent loan scheme, initially known as HECS (Higher Education Contribution Scheme), was renamed HELP (Higher Education Loan Program) in 2005. Since the scheme’s inception, other income-contingent loan schemes have proliferated. The most direct descendant of the original scheme, HECS-HELP, lends money to pay student contributions – the student share of the funding rate for a Commonwealth-supported place (see Section 7.1.1). An estimated \$4.7 billion will be lent through HECS-HELP in 2018–19.<sup>159</sup>

157. ATO (2018). Threshold information from 1989 to 2017 is available in Norton and Cherastidham (2016), Appendix A.

158. *Higher Education Support Legislation Amendment (Student Loan Sustainability) Act 2018*.

159. Estimate provided by the Department of Education and Training.

Currently students can borrow unlimited amounts through HECS-HELP, although annual course charges are capped (Section 7.1.1). From 2020, there will be a maximum amount of outstanding debt for tuition expenses. This will be \$150,000 for medicine, science and dentistry students, and \$104,440 for other students.<sup>160</sup> HECS-HELP borrowing before 2020 will not be counted towards the cap.

The FEE-HELP scheme lends money to domestic full-fee students – mainly postgraduate coursework students and students outside the public universities. An estimated \$1.6 billion will be lent through FEE-HELP in 2018–19, of which \$1 billion will be borrowed by postgraduate students.

FEE-HELP borrowers have always had a lifetime borrowing limit for tuition expenses (for 2018, \$127,992 for medicine, dentistry and veterinary science; \$102,392 for all other courses).<sup>161</sup> From 2020, FEE-HELP loans will be incorporated into the overall borrowing cap, which could include HECS-HELP debt incurred in a previous course. However, there will be no lifetime limit on borrowing. HELP debtors who repay previous debt will be able to borrow again, up to the limit.

OS-HELP helps finance overseas study by Commonwealth-supported students. How much students can borrow under OS-HELP depends on circumstances, but it is up to \$9,063 for a six-month period.<sup>162</sup> Students can borrow twice under OS-HELP. An estimated \$124 million will be lent under OS-HELP in 2018–19. SA-HELP supports a separate charge for student services and amenities. Its maximum annual loan

160. As indexed to inflation. The cap will include HECS-HELP, FEE-HELP, VET FEE-HELP and VET Student Loans. It will not include loan fees, indexation, OS-HELP, SA-HELP or Student Start-up Loans.

161. Borrowing under the VET Student Loans scheme, and its predecessor VET FEE-HELP, is also included in this cap.

162. The standard OS-HELP cap per six-month period is \$6,665, or \$7,998 for students going to an Asian country. An additional \$1065 is available for language study in preparation for going to an Asian country.

is \$298 in 2018 (the price limit on the student amenities fee). An estimated \$117 million will be lent under SA-HELP in 2018–19.

In 2016 the Government converted the previous Student Start-up Scholarship – a lump sum grant for students receiving student income support – into an income contingent loan, the Student Start-up Loan.<sup>163</sup> The loan is available to students on education-related income support (Section 6.3.4). Eligible students can receive lump sums of \$1,055 up to twice a year. The money is intended to assist them with textbooks, relocation expenses and other education-related costs. Although the Student Start-up Loan is separate from HELP, its repayment provisions mirror those applying to HELP debt. Debtors begin repaying Start-up Loan debt once they finish repaying HELP debt.

#### HELP borrowing and repayment trends

Annual lending through HELP for higher education reached \$6.4 billion in 2017–18, having doubled in real terms since 2008 (Figure 6.2). Total HELP lending accelerated more quickly until 2016, due to the vocational education VET FEE-HELP scheme. VET FEE-HELP lending was separate to the other schemes, but it shared borrowing caps and repayment systems with the higher education HELP loans. VET FEE-HELP was replaced with VET Student Loans in 2017, with annual lending now much lower than before. All the money borrowed is consolidated into a single HELP debt managed by the ATO.<sup>164</sup>

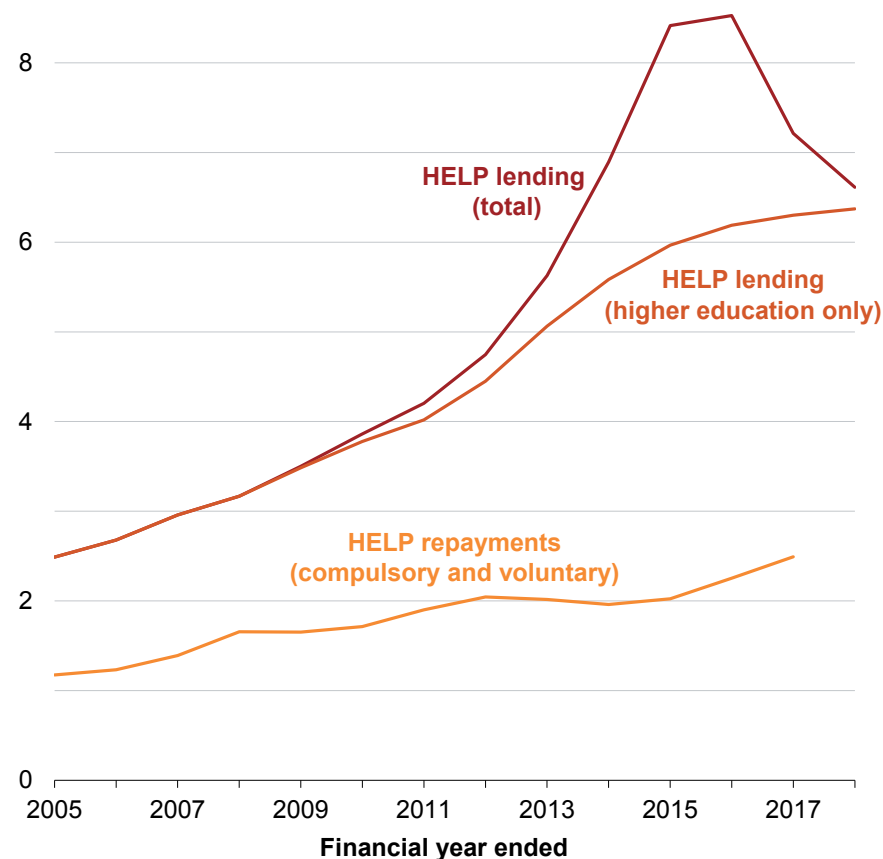
From 2012 to 2015, HELP repayments stalled, as Figure 6.2 shows. This was due to weak graduate employment and wages (see Chapter 10), and increasing numbers of HELP debtors falling below the initial income threshold below which no repayment is required.<sup>165</sup> Since

163. Department of Human Services (2016).

164. As of August 2018, there was a bill before the Parliament to create a separate loan scheme for vocational education.

165. Norton and Cherastidham (2016, chapter 3).

**Figure 6.2: HELP lending and repayment, 2005–2018**  
\$2018 billion



Notes: HELP lending by financial year is calculated by taking the average of the relevant two calendar years. Indexed to CPI.

Sources: Data supplied by the Department of Education and Training, Department of Education and Training (2015d), Department of Education and Training (2015b), Department of Education and Training (various years[b]) and ABS (2017c).

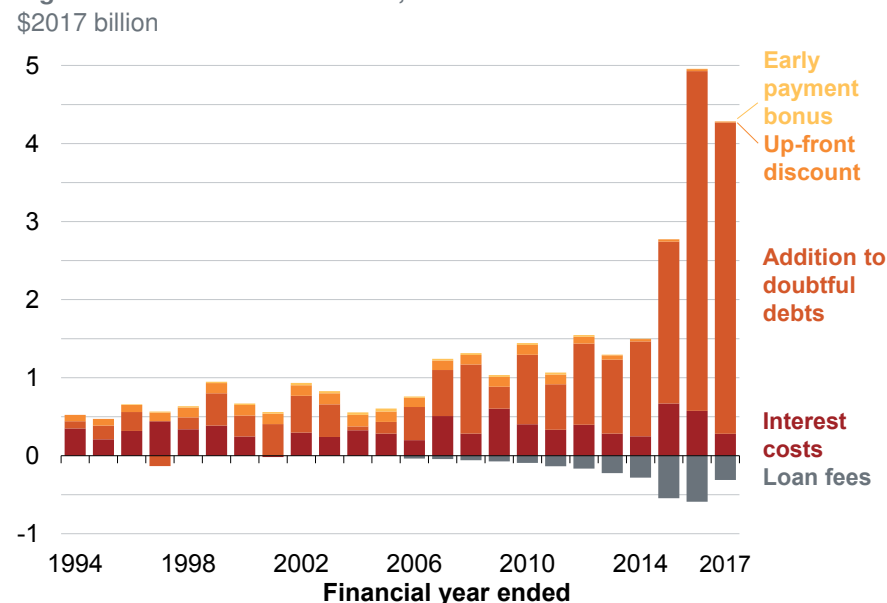
2016 repayments have started growing again. In 2016–17, the most recent year available, the ATO collected an estimated \$2.5 billion in HELP repayments. This includes \$43.4 million from HELP debtors overseas.<sup>166</sup> It is not clear whether the lower initial threshold applying from 2019–20 will have much effect on total annual HELP repayment revenue. While additional lower-income debtors will make repayments, these will all be under \$550 a year. Because of changes to the higher-income repayment thresholds, most debtors will repay less each year.<sup>167</sup>

### HELP's costs

Government financial statements do not present a clear account of HELP's annual costs.<sup>168</sup> Figure 6.3 provides Grattan Institute estimates of HELP's component costs, along with offsetting revenue.

HELP's largest cost is debt not expected to be repaid, commonly called doubtful debt. Debt becomes doubtful when debtors are not expected to make sufficient repayments during their life to clear what they owe. Eventually, on death, remaining debt is written off. As most HELP debtors are still young, only small amounts are currently being written off for this reason.<sup>169</sup> Doubtful debt costs are therefore estimates, given what we know about current HELP debtors and their repayment prospects. The Government estimates that 17 per cent of new HELP

Figure 6.3: Annual cost of HELP, 1994–2017



Notes: This chart cannot be compared directly to the Department of Education and Training's Portfolio Budget Statement (Table 6.1) due to a different methodology. The most important difference is that this chart examines the cost of the historical stock of HELP debt, while the Budget papers incorporate estimates of the future cost of each year's lending. In this Figure, addition to doubtful debt is the increase in total doubtful debt since the previous year. The interest cost is calculated as the difference between the ten-year Commonwealth bond rate and the CPI indexation rate, multiplied by the level of outstanding debt. Loan fees include FEE-HELP, VET-FEE-HELP and VET Student Loans, based on estimates of loan fee-liable lending. Indexed using CPI. The 'early payment bonus' reduced HELP debt by more than the amount repaid. Before it was abolished at the end of 2016, HELP debts were reduced by 5 per cent more than the payment. This is counted as a cost to the Government. The 'upfront discount' applied to student contributions paid directly to universities. Before it was abolished at the end of 2016, upfront payments received a 10 per cent discount. The Government compensated universities for the discount.

Sources: Based on Department of Education and Training (2015b), annual reports for portfolios responsible for higher education, information supplied by the Department of Education and Training.

166. Information provided by the Department of Education and Training. Indexed to \$2017–2018.

167. Norton and Cherastidham (2018).

168. The main annual reporting is in the Department of Education and Training's portfolio Budget statements, for example Department of Education and Training (2018d, pp. 49–50). It is an un-itemised estimate of the cost of that financial year's lending. Reporting of HELP's finances could be significantly improved, but the international accounting standards used in the Commonwealth Budget are an obstacle to clarity. Some of the complexities are discussed in Parliamentary Budget Office (2016).

169. In 2017–18, \$6.5 million was written off.

debt issued will not be repaid.<sup>170</sup> Figure 6.3's \$4 billion doubtful debt cost for 2016–17 includes further write-downs of money previously lent, as well expected losses on lending during 2016–17.

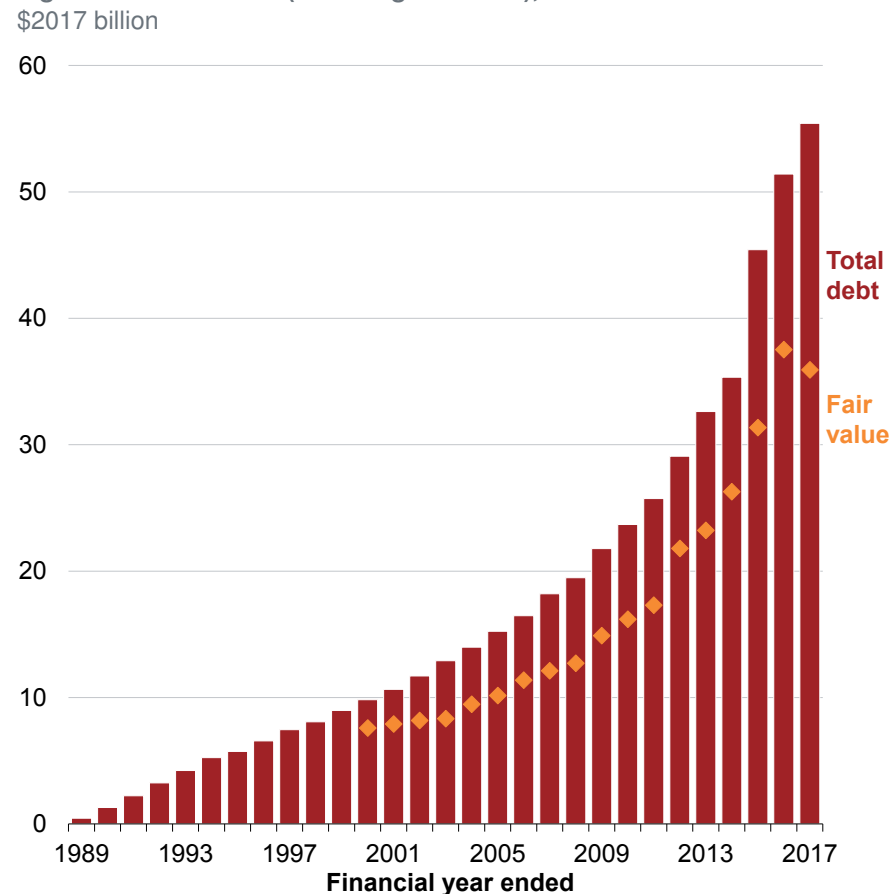
HELP's other major cost is an interest subsidy. This occurs because the Government borrows money in the bond markets, which it re-lends to students at the typically lower CPI inflation rate. Taxpayers pay the cost of the difference between the two numbers. For 2016–17 this net interest bill is an estimated \$280 million.<sup>171</sup> The Grattan Institute has estimated the annual net interest bill on the HELP debt each year from 1994 (Figure 6.3). Bond rates that are well below their long-term average kept down the interest cost for 2016–17, despite the increased total debt discussed below.

Offsetting these costs are revenues from loan fees. Full-fee undergraduates at NUHEPs must pay a 25 per cent loan fee if they take out a FEE-HELP loan.<sup>172</sup> For example, if a full-fee undergraduate student borrows \$10,000, the Government records a debt of \$12,500. The loan fee is a source of revenue for HELP (Figure 6.3), although much of this in recent years was due to vocational education lending.<sup>173</sup>

### Total HELP debt

At 30 June 2017, HELP debtors owed the Commonwealth Government \$55.4 billion, including money lent to vocational education students. Since 2000, the Government has published the HELP debt's 'fair' value (shown in Figure 6.4). This is an estimate of how much the HELP debt is worth to the Government. At 30 June 2017, the HELP debt's fair

Figure 6.4: HELP debt (including fair value), 1989–2017



Note: Indexed using CPI.

Sources: Department of Education and Training (2017g) and preceding publications.

170. Department of Education and Training (2018d, p. 50).

171. This figure is an estimate because the government does not specifically borrow for HELP. The notes to Figure 6.3 explain the assumptions behind this estimate.

172. Before 2019, full-fee students at private universities also paid the 25 per cent loan fee.

173. The loan fee for vocational education courses is 20 per cent.

value was \$35.9 billion, \$19.5 billion less than its nominal value.<sup>174</sup> The main cause of the lower fair value is doubtful debt.

### 6.3.3 Private spending by students

Private higher education spending by students has increased, reaching \$13.2 billion in 2016, although 40 per cent of this revenue still comes from the Government through HELP loans (Figure 6.5). In 2016, domestic students contributed slightly more revenue than international students. As enrolment trends show weak domestic but strong international student growth (Chapter 2), and the ABS reports rapid increases in education exports (Section 6.1), international students are likely now to be the largest source of revenue from students. When the CGS is added, total income for domestic students would still exceed international student revenue. The fees paid by different types of student are discussed in Chapter 7.

### 6.3.4 Student income support

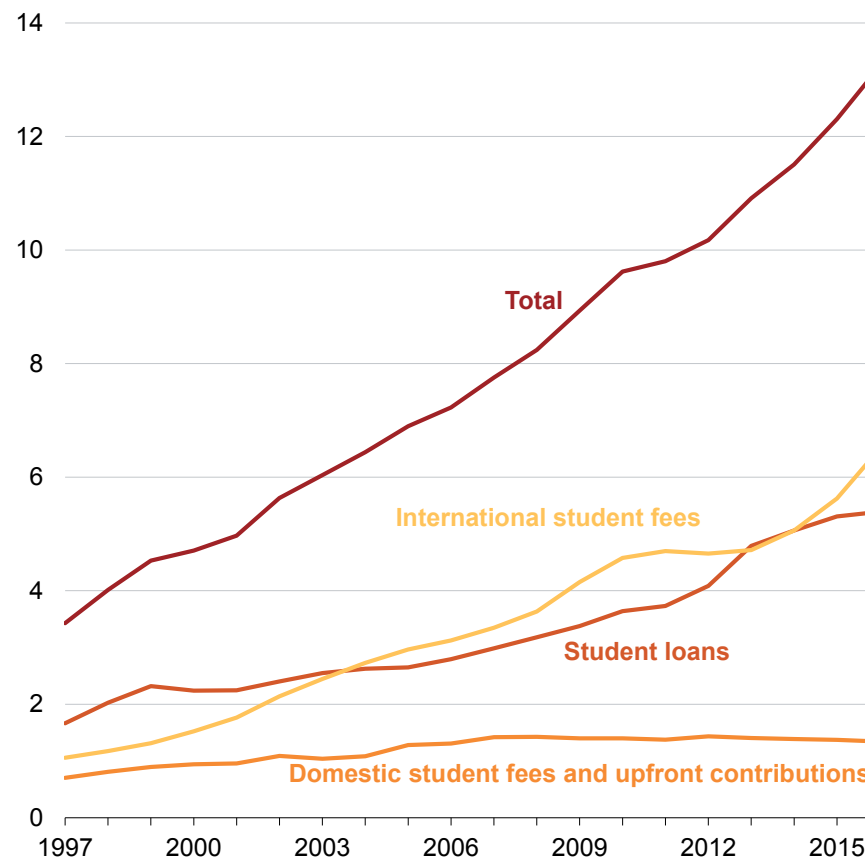
Most domestic students finance their tuition expenses through the CGS and/or HELP, but living costs while studying are mainly privately financed. In a 2017 survey of student finances, a third of undergraduates reported receiving a student income support payment, and 6 per cent reported another Centrelink payment. Nearly 80 per cent of undergraduates were in paid work, and 62 per cent of full-time undergraduates reported financial support from their family or partner.<sup>175</sup>

In 2017, full-time domestic undergraduates reported a median annual income of \$18,300, and expenditure of \$14,200, of which \$1,300 was study-related. Part-time undergraduate students had more

174. Department of Education and Training (2017g), p 128. This large write-down is affected by substantial predicted losses on the VET FEE-HELP scheme.

175. Universities Australia (2018a, pp. 19, 24).

**Figure 6.5: Teaching revenue from students, 1997–2016**  
\$2018 billion



Notes: Does not include fees or charges paid by students for non-teaching services such as student amenities or accommodation. Indexed using CPI.

Source: Department of Education and Training (various years[c]).



finely-balanced finances, with median annual income and expenditure both at \$29,000.<sup>176</sup>

Government student income payments are generally available to full-time undergraduates who are Australian citizens or permanent residents. Students in some postgraduate coursework programs are also eligible for student income support.<sup>177</sup> Eligibility was restricted in 2018 to students at higher education providers that also offer HELP loans.<sup>178</sup> Although this will affect only a small number of students, it is a significant change. Since the current needs-based student income support system was established in 1974, it had been the only government payment that treated students equally, regardless of their choice of higher education provider.

The biggest student income support scheme is Youth Allowance. In June 2016, 177,378 higher education students received Youth Allowance.<sup>179</sup> The estimated cost of Youth Allowance for higher education students in 2017–18 was \$1.45 billion.<sup>180</sup>

Students whose parents earn \$52,706 a year (2016–17) or less are entitled to the full at-home Youth Allowance rate of \$293.60 a fortnight.

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176. Ibid. (pp. 18, 27).

177. For historical student income support programs and statistics, see Daniels (2017).

178. See changes to the *Student Assistance (Education Institutions and Courses) Determination 2009 (No. 2)*, Schedule 2. Institutions whose students can receive student income support are listed in Appendix A. Institutions whose students cannot receive student income support are listed in Appendix B.

179. Department of Social Services (2017a). These are the latest figures in which higher education students are specifically reported.

180. Expenditure on Youth Allowance for higher education students is not specifically reported. This estimate assumes that the share of Youth Allowance recipients who are in higher education is the same as in June 2016, and that they receive payments proportionate to their share of the Youth Allowance population. School and vocational education students also receive Youth Allowance. Funding aggregates from Department of Social Services (2018a, p. 47).

There are higher rates for students who live independently. The payment reduces if parents earn more than \$52,706, or if the student earns more than \$437 a fortnight.<sup>181</sup>

Youth Allowance recipients are not subject to the parental income test if they meet various criteria indicating independence from their parents or if they turn 22. This makes students in high-income households eligible for Youth Allowance, so long as their personal income is low.

There are two other, smaller income support programs. Austudy is for students aged 25 or older, and supported 32,392 students in June 2016.<sup>182</sup> Its estimated cost for 2017–18 was \$356 million.<sup>183</sup> ABSTUDY is for Indigenous students, and in 2015–16 supported 4,815 higher education students.<sup>184</sup> Its estimated cost for 2017–18 was \$52.7 million.<sup>185</sup>

As noted, students receiving Youth Allowance, Austudy and ABSTUDY can all apply for up to \$2,110 a year in loans, on top of their benefits (Section 6.3.2). \$159.5 million was lent in 2017–18.<sup>186</sup>

As well as these generally needs-based income support schemes, merit-based stipends are available for research students through the Research Training Program (RTP). These are funded by the Commonwealth but allocated by universities, which decide on a stipend amount between a 2018 base rate of \$27,082 and a maximum of \$42,307.<sup>187</sup> This new program gives universities flexibility on student numbers

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181. Department of Human Services (2018a).

182. Department of Social Services (2017b).

183. Expenditure on Austudy for higher education students is not specifically reported by the Government. See the explanation for Youth Allowance.

184. ANAO (2017, p. 16). Some Indigenous students receive Youth Allowance or Austudy instead: Department of Social Services (2018b).

185. Expenditure on ABSTUDY for higher education students is not specifically reported by the Government. See the explanation for Youth Allowance.

186. Department of Social Services (2018a, p. 47).

187. Department of Education and Training (2018f).



and funding rates. Statistics on how they spent RTP money should be available in the second half of 2018. In 2016, 12,142 students received funding under the predecessor Australian Postgraduate Awards.<sup>188</sup>

## 6.4 Spending on research

Like teaching, research is funded from a mix of public and private sources.

### 6.4.1 Public research funding programs

Universities receive two broad types of research grant. Competitive grants provide money for specific projects, centres or individuals through fellowships. Performance-based block research grants are determined by formulas that are primarily based on success in attracting other funding. ‘Block’ funding means that universities have discretion on its precise use, within the broad parameters of the funding scheme. Though all universities can apply for research grants, the Group of Eight or sandstone universities (listed in Appendix A) receive most research funding.

#### Competitive grants

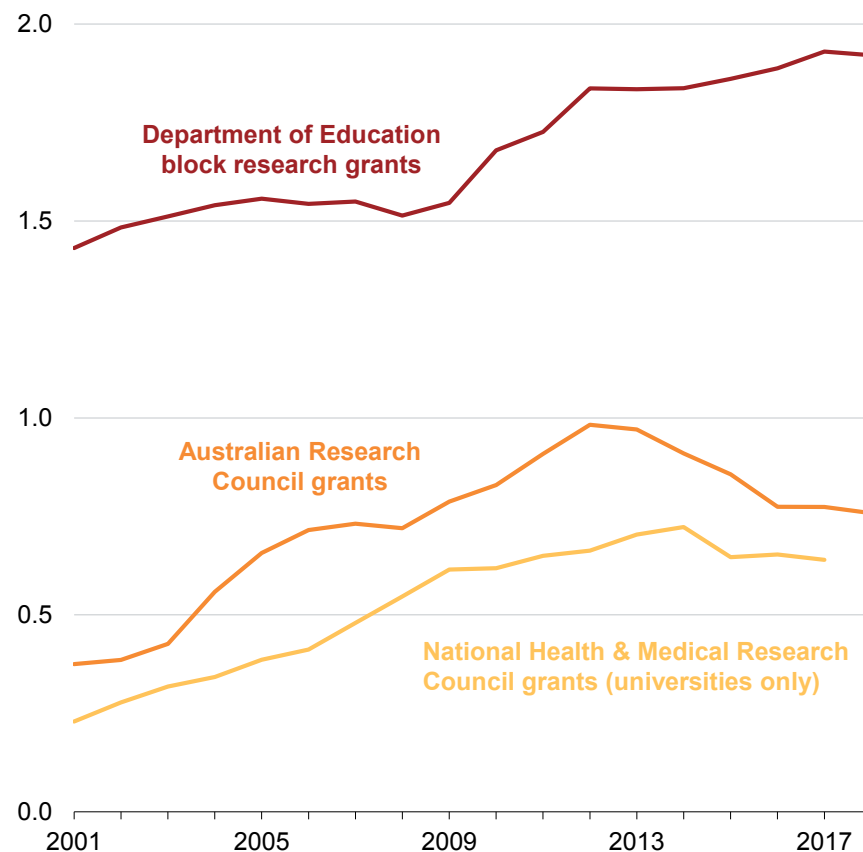
The Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) are the main sources of competitive grant funding.<sup>189</sup> Eligibility for ARC grants is largely restricted to universities. Eligibility for NHMRC grants is broader and includes medical research institutes and hospitals, but universities are the main recipients. Figure 6.6 shows trends in ARC and NHMRC university funding. In real terms, the ARC’s funding has declined since 2013 after a period of significant growth. It spent \$758.1 million on

188. Department of Education and Training (2018g).

189. Department of Education and Training (2018h) provides a full list of competitive grant sources recognised for performance grant funding.

Figure 6.6: ARC, NHMRC and block research grants to universities, 2001–2018

\$2018 billion



Notes: ARC and block grants are for the financial year ending 30 June, NHMRC grants are for the calendar year. Non-university funding has been excluded from the NHMRC figure. Indexed using CPI.

Sources: Department of Industry, Innovation and Science (2017a) and Department of Education and Training (2018d).

research grants in 2017–18.<sup>190</sup> Estimated NHMRC university grants for 2017–18 were \$626.9 million.<sup>191</sup>

For universities, the significance of these competitive grants goes beyond the money they receive. Their level of grant income contributes to their performance-based block research funding (see next section). For academics and their institutions, winning competitive grants brings prestige as well as money.

Winning an ARC grant is difficult. Projects are assessed by academic experts in the relevant field, so that only the highest quality projects are supported. For Discovery Project grants, aimed at supporting excellent basic and applied research, 18.9 per cent of the 3,136 applications for funding in 2018 were approved. Funded projects receive between \$30,000 and \$500,000 a year for up to five years. A researcher applying for a Discovery grant must show a track record in research publications and evidence of research quality, including whether the proposal addresses a significant problem and will advance knowledge.<sup>192</sup> Group of Eight universities won more than 60 per cent of new Discovery Project money for 2018.<sup>193</sup>

Linkage Projects encourage collaboration between higher education providers and other organisations, including industry. Partner organisations are required to contribute to the project. Linkage grants reflect a government emphasis on useful knowledge and innovation. These grants are one reason why research activity has shifted towards applied research (Section 5.2). Because they involve external partners, Linkage grant proposals are more difficult to organise and many fewer applications are made (only 417 in 2017) than for Discovery grants,

despite their higher success rate – 32 per cent in 2017. Group of Eight universities also dominate this pool, securing 63 per cent of new funding for 2017.<sup>194</sup>

For NHMRC project grants, application success rates declined from 23 per cent in 2010 to 16 per cent in 2017.<sup>195</sup> The main criteria for assessing projects are scientific quality, significance and/or innovation, and the researchers' track record in research output and impact. There is no maximum amount of project funding, and projects can be funded for up to five years. The NHMRC also offers program funding for broad areas of health research expected to 'contribute new knowledge at a leading international level'. Once again, the Group of Eight universities dominate. They secured more than 80 per cent of grant payments in 2015.<sup>196</sup>

### Performance-based block grants

Block grants help sustain systemic research capacity. They help fund general research infrastructure such as laboratories and libraries that can be used in many different research projects. Project grants do not cover 100 per cent of project costs, on the assumption that block grants cover part of the total cost. Block grants are, however, widely regarded as too low to cover all the indirect costs associated with competitive grants.<sup>197</sup> In 2001, block grants programs paid \$2.37 for every \$1 of ARC and NHMRC funding. In 2017, they paid \$1.37.

Historically, several block grant programs have operated with different purposes and funding formulas.<sup>198</sup> These have now been simplified into two main programs.

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190. Department of Education and Training (2018d, p. 121).

191. Sourced from Department of Industry, Innovation and Science (2017a). NHMRC figures not available at the time of writing.

192. ARC (2017a).

193. ARC (2018b).

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194. ARC (2018a).

195. NHMRC (2017).

196. NHMRC (2015).

197. Watt (2015, pp. 13–14).

198. Larkins (2011). See also Norton and Cherastidham (2014, pp. 50–51).

Research Support Program (RSP) funding is distributed to universities according to their success in attracting research income. It is slightly weighted to industry and other engagement income (52.8 per cent) compared to competitive grant income (47.2 per cent).<sup>199</sup> The RSP allocated \$894 million for 2018, with Group of Eight universities receiving two-thirds of the total.<sup>200</sup>

Research Training Program (RTP) funding is distributed to universities according to their numbers of research degree completions (50 per cent weighting), and their share of competitive grants and industry and other research income (25 per cent weighting each).<sup>201</sup> The RTP provides student income support as well as offsetting other university research training costs (Section 6.3.4). Its allocation is \$1.03 billion for 2018, with 60 per cent going to Group of Eight universities.<sup>202</sup>

Most previous research block grant programs were weighted more towards competitive grant income. They also included numbers of academic publications. The current formulas are intended to encourage university engagement with industry.

The grants described in this section are the largest recurrent sources of specific research funding. There are also other, smaller research funding programs, including access to the new Medical Research Future Fund; contract research from government agencies; once-off capital grants for research infrastructure; and various other funding sources from all levels of government.<sup>203</sup>

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199. Department of Education and Training (2017h).

200. Department of Education and Training (2017i).

201. Department of Education and Training (2017h).

202. Department of Education and Training (2017i).

203. Department of Education and Training (2017f); Department of Industry, Innovation and Science (2017a); and Department of Health (2018).

#### 6.4.2 Other sources of research funding

Government funding specifically for research finances only part of total university research activity (Figure 6.7). In 2016, total university research spending was \$11.3 billion (in \$2018). Commonwealth research-specific spending financed 34 per cent of university research expenditure. Universities also draw on international and private sources of research funding, including industry contracts and donations. Together, these sources finance another 15 per cent of research.<sup>204</sup> About half of all research expenditure is therefore financed from sources that are not specifically for research.

The funding for Commonwealth supported students discussed in Section 6.3 and Section 7.1 is one of these sources. The CGS and student contributions are together known as 'base funding'. Their predecessor funding program, the operating grant, was explicitly for teaching and research, and this combination established university practices. The most recent analysis of base funding, using a sample of universities, suggests that 86 per cent of it was spent on teaching.<sup>205</sup> Assuming that the remainder was spent on research, that would have provided an additional \$1.6 billion in 2016.

Along with CGS money, universities make profits on full-fee students (Section 6.3.3 and Section 7.1.2). Grattan Institute analysis for 2013 estimated that overall at least one dollar in every five spent on research came from teaching-driven funding. Financial transfers occur between disciplines as well as between teaching and research. Surpluses from teaching business-related courses support research in other faculties.<sup>206</sup>

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204. Department of Education and Training (2017j) provides total and by-university data.

205. Deloitte Access Economics (2017, p. xxii). This report says that 85 per cent of base funding for bachelor degrees was spent on teaching. Spending on teaching for postgraduates has been inferred from other data in the report.

206. Norton and Cherastidham (2015a).

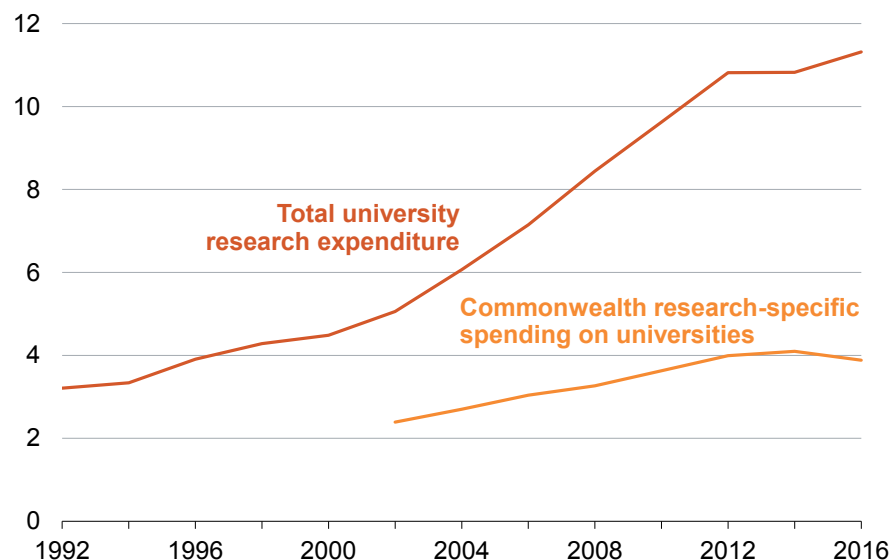
While using student-derived revenue for research is sometimes questioned, it is unavoidable given the current structure of Australian higher education. Most academic staff with permanent or fixed-term contracts have both teaching and research roles (Section 5.1), but this staffing model is not well-supported by the public funding system. Teaching staff and funding reflect student enrolments by institution and field of study. Yet the main research funding schemes distribute money using criteria that are unrelated to coursework student numbers. Government funding schemes tend to drive teaching and research resources in

divergent directions. Research spending funded by surpluses on teaching preserves teaching-research academic employment.

Teaching-funded research can also protect university autonomy. Although governments have successfully steered university research towards more applied research (Section 5.2), the Commonwealth's dwindling share of all research funding expenditure suggests that universities can finance their own priorities.

**Figure 6.7: Total university research expenditure, 1992–2016**

\$2018 billion



Notes: Indexed using CPI. Commonwealth research-specific funding includes research block grants, competitive grants, and other Commonwealth income recorded in the Higher Education Research Data Collection.

Sources: Department of Education and Training (2017k); ABS (2018c); Universities Australia (2018b).

### 6.5 Public and private spending over the long run

Over the long run, total public spending on higher education has increased in most years. From the perspective of universities, it has two distinct phases over the past 80 years, as Figure 6.8 on the following page shows. Until the late 1980s, public funding complemented and then replaced income from students, pushing up the government share of all university revenue. From the late 1980s, private funding usually grew more quickly than public funding, due to HECS/student contributions and full-fee courses, pushing down government spending as a share of all university revenue.<sup>207</sup> Despite the growth of private funding, universities remain reliant on government. In 2016, 58 per cent of university cash flow – counting both grants and HELP revenue – came from government.<sup>208</sup>

### 6.6 Overall financial position

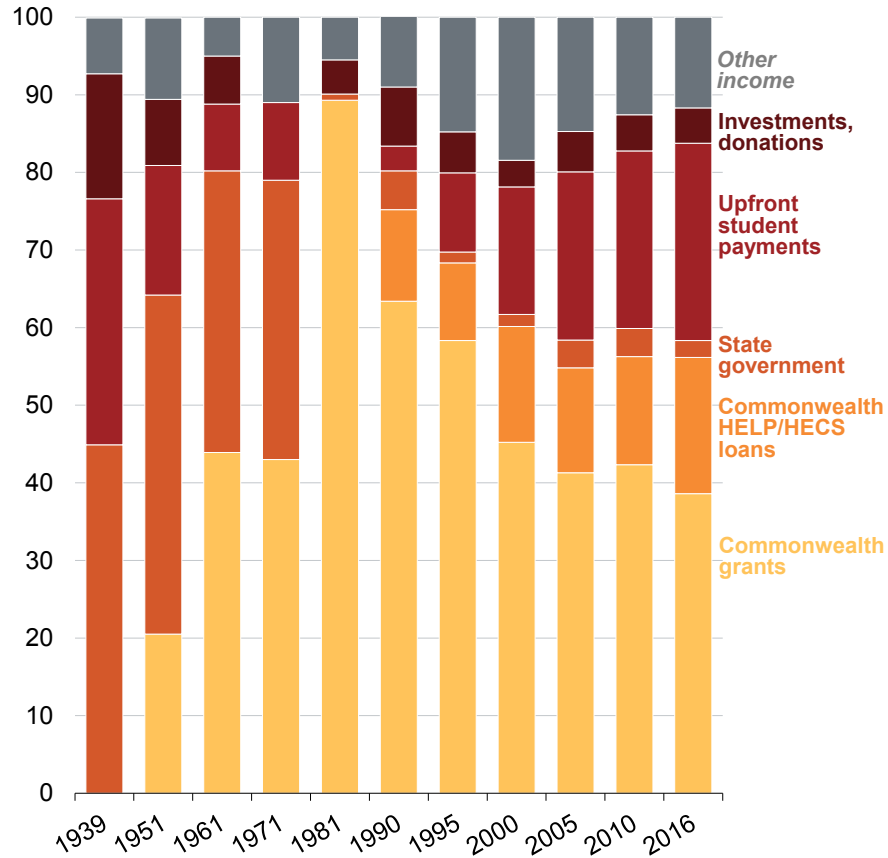
From the mid-1990s to the mid-2000s public universities often experienced financial difficulties, but their position improved subsequently (Figure 6.9 on the next page). For a number of years, additional government grant income (Figure 6.1, Figure 6.6) and private revenue (Figure 6.5) contributed to larger annual surpluses despite rising

207. See Norton (2017b) for more detail on the history of public and private funding.

208. Commonwealth Government grants, 38.6 per cent; HELP loans, 17.5 per cent; State Government grants, 2.2 per cent.

**Figure 6.8: Public and private revenue shares of universities, 1939–2016**

Per cent of total

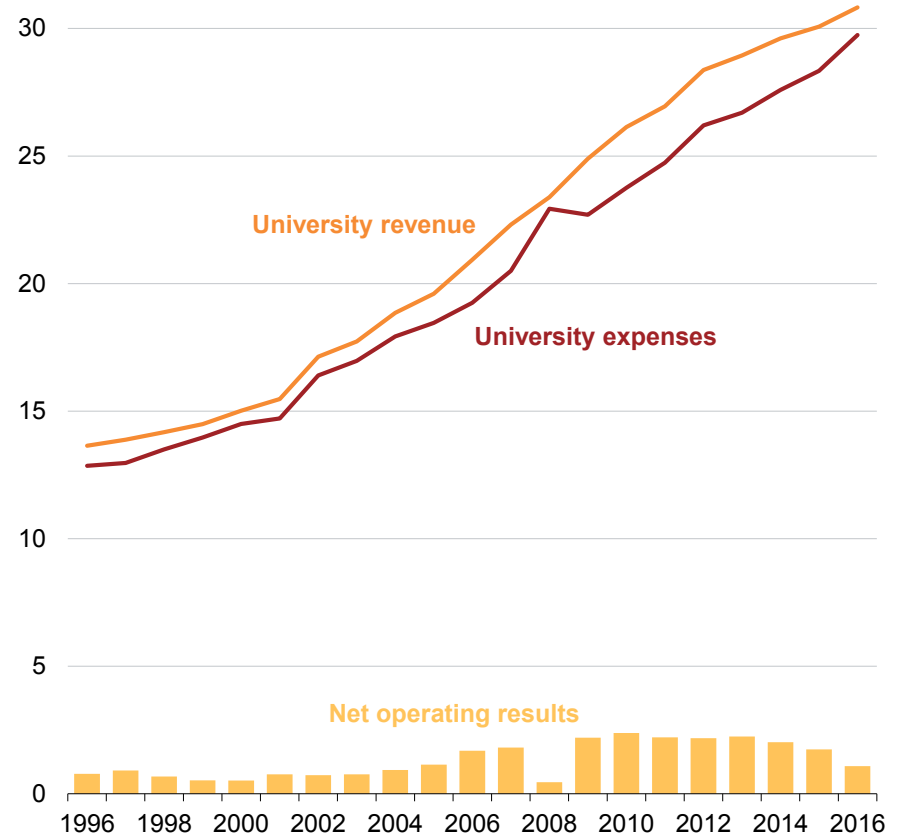


Note: Upfront student payments include fees and HECS or student contribution payments.

Sources: DEET (1993) and Department of Education and Training (various years[c]).

**Figure 6.9: Public university revenue and expenses, 1996–2016**

\$2018 billion



Notes: Indexed using CPI. The 2008 result was due to investment losses in the global financial crisis.

Source: Department of Education and Training (various years[c]).

expenses. In recent years, surpluses have started to shrink again. In 2016, they were 5 per cent of revenue.

Now, booming international student numbers (Section 2.4) will deliver large profits to some universities. But limits on total CGS spending (Section 6.3) mean that costs for Commonwealth-supported students will grow more quickly than revenue for 2018 and 2019 at least. Universities that were expanding their Commonwealth-supported enrolments before their funding was frozen may be locked into new spending without fully offsetting new revenue (they will still receive student contributions).<sup>209</sup> A downturn in international student numbers, as has happened before (Section 2.4), would put further pressure on university finances.

In recent years, TEQSA has published limited information about NUHEP finances. Not including TAFEs, their revenues were \$3.9 billion in 2016–17, including from their non-higher education activities.<sup>210</sup> Many not-for-profit NUHEPs are financially fragile, with a third making losses in 2015–16 and overall surpluses at 1 per cent of revenue. The median for-profit higher education provider earned profits of 10 per cent of their revenue, with one-in-ten making a loss.<sup>211</sup> Navitas Ltd is the largest for-profit in the Australian market. In 2016–17 it had university partnerships revenues of \$574 million, with profits of \$125 million, from operations in many countries.<sup>212</sup> It is bigger than many of Australia's smaller public universities.

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209. The universities that were expected to expand their enrolments and income can be seen in Conifer (2018).

210. TEQSA (2018b, p. 45).

211. TEQSA (2017c, pp. 8 ,21).

212. Navitas (2017, p. 67). Laureate International, which operates Torrens University, is smaller than Navitas in Australia but had global revenues of \$US4.4 billion in 2017, making it the world's largest education company: Laureate Education (2018).

## 7 Higher education finance – the micro picture

Most domestic undergraduate students are in places supported by the Commonwealth Government. The funding rate – what universities receive – for a Commonwealth supported place is a mix of a tuition subsidy and a regulated student contribution. Most students pay the student contribution with a HECS-HELP loan.

Until the end of 2017, the Government subsidised unlimited numbers of domestic bachelor-degree students, a system called demand driven funding. For 2018 and 2019 total funding on tuition subsidies will be frozen at 2017 levels. This takes policy back to a previous system of block grants, under which universities receive a set annual amount of money.

Fees for international students, most domestic postgraduates and students in private higher education providers are set by the market. International students typically pay significantly more than domestic students.

### 7.1 Funding per student

#### 7.1.1 Commonwealth-supported students

A ‘Commonwealth-supported student’ is somebody in a place funded by the Commonwealth Grant Scheme (Section 6.3) or required to pay a student contribution.<sup>213</sup> Except in limited circumstances, every domestic undergraduate student in a public university is Commonwealth supported. Postgraduate coursework Commonwealth-supported places are

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213. Most Commonwealth-supported students are supported by the CGS and pay a student contribution. However, students in enabling places aimed at preparing them for a higher education course do not pay student contributions, and universities do not receive CGS payments for enrolments in excess of agreed numbers in courses with allocated places or when the total funding amount would exceed their maximum CGS payment (Section 6.3.1 and Section 7.2).

initially allocated to universities, which then distribute them to students. In recent years about one-third of domestic postgraduate coursework students have been Commonwealth supported.<sup>214</sup>

Commonwealth-supported students can pay their student contribution directly to their university or, if they are citizens, borrow it under the HECS-HELP scheme (Section 6.3.2). If the student borrows under HECS-HELP, the Commonwealth Government pays the university on the student’s behalf.<sup>215</sup> Nearly 90 per cent of student contribution liabilities are deferred using HECS-HELP.

Commonwealth and student contributions are both based on the unit of study, or subject. They are the same for undergraduates and postgraduates, but differ according to field of education. There are eight Commonwealth contribution amounts and three student contribution amounts.<sup>216</sup> For each field, adding together the Commonwealth and student contribution gives the total funding rate. Table 7.1 lists fields of study and their funding levels, expressed as the rate for a full year of study.

These rates reflect history and political compromises. A study of higher education expenditure from the late 1980s is the single biggest

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214. Department of Education and Training (various years[a]). Publicly-funded postgraduate research places are distributed under the Research Training Program, see Section 6.4.1.

215. Australian citizens, permanent residents and New Zealand citizens resident in Australia are domestic students for CGS funding. However, only Australian citizens and New Zealand citizens who have lived in Australia for ten or more years and since they were a child have access to HELP. Other New Zealand citizens and permanent residents must pay their student contributions upfront.

216. Disciplines with the same Commonwealth contributions are described as being in a ‘funding cluster’, and disciplines with the same student contributions are described as being in the same ‘student contribution band’.



influence on the total per student amount.<sup>217</sup> Since then, the most important change occurred in 2005 when universities were given the power to set student contributions up to a legislated maximum and keep the money (previously, HECS went to the Government). For most disciplines, the maximum was 25 per cent more than the previous HECS rates. There was no science to this particular percentage; it was a political compromise to get the higher education reform bill through the Senate. Maximum student contributions quickly became standard prices charged by all universities.

### 7.1.2 Full-fee paying students

Full-fee paying students do not receive CGS funding. The fees they pay are lightly regulated. There is a floor price for international students, but no legal ceiling on the fees universities can charge international students or domestic students in full-fee markets.<sup>218</sup> Only market forces regulate maximum fees.

Figure 7.1 shows median fees charged to international students taking bachelor degrees in 2018, along with the maximum and minimum fee charged. The median fee ranges from \$27,500 to \$34,000 a year depending on discipline. Fees vary widely around these mid-points. Students can pay twice as much to attend the most expensive university as the cheapest university offering a similar course. International students often prefer high-fee over low-fee universities.<sup>219</sup> Generally, universities earn more from an international than a domestic student. However, occasionally universities set fees for international students in agriculture, science and engineering that are below the combined Commonwealth and student contributions reported in Table 7.1.

217. For the background, see DEEWR (2010, pp. 24–26).

218. The floor prices are set out in the *Higher Education Provider Guidelines 2012*. Their purpose is to prevent universities spending public money on international students.

219. Norton and Cherastidham (2015b, chapter 2).

**Table 7.1: Contributions for a 2018 Commonwealth-supported place**

Discipline	Commonwealth contribution	Maximum student contribution	Total funding rate
Humanities	\$5,896	\$6,444	\$12,340
Law, business, economics	\$2,120	\$10,754	\$12,874
Behavioural sciences	\$10,432	\$6,444	\$16,876
Social studies	\$10,432	\$6,444	\$16,876
Education	\$10,855	\$6,444	\$17,299
Journalism	\$12,830	\$6,444	\$19,274
Clinical psychology	\$12,830	\$6,444	\$19,274
Visual and performing arts	\$12,830	\$6,444	\$19,274
Architecture	\$10,432	\$9,185	\$19,617
Nursing	\$14,324	\$6,444	\$20,768
Allied health	\$12,380	\$9,185	\$22,015
Engineering	\$18,240	\$9,185	\$27,425
Science	\$18,240	\$9,185	\$27,425
Agriculture	\$23,151	\$9,185	\$32,336
Dentistry, medicine, veterinary science	\$23,151	\$10,754	\$33,905

*Notes: The student contributions listed in the table are the maximum that universities can charge, as legislated in the Higher Education Support Act 2003. They may charge less than this amount if they choose, but in practice this rarely occurs.*

*Source: Department of Education and Training (2017).*

Although domestic postgraduates are sometimes charged high fees, these are never more than and usually significantly less than the fees charged to international students in the same course. In disciplines such as nursing and teaching, it is common for domestic postgraduate fees to be less than the funding rates for a Commonwealth-supported place.<sup>220</sup>

### 7.1.3 Teaching spending per student

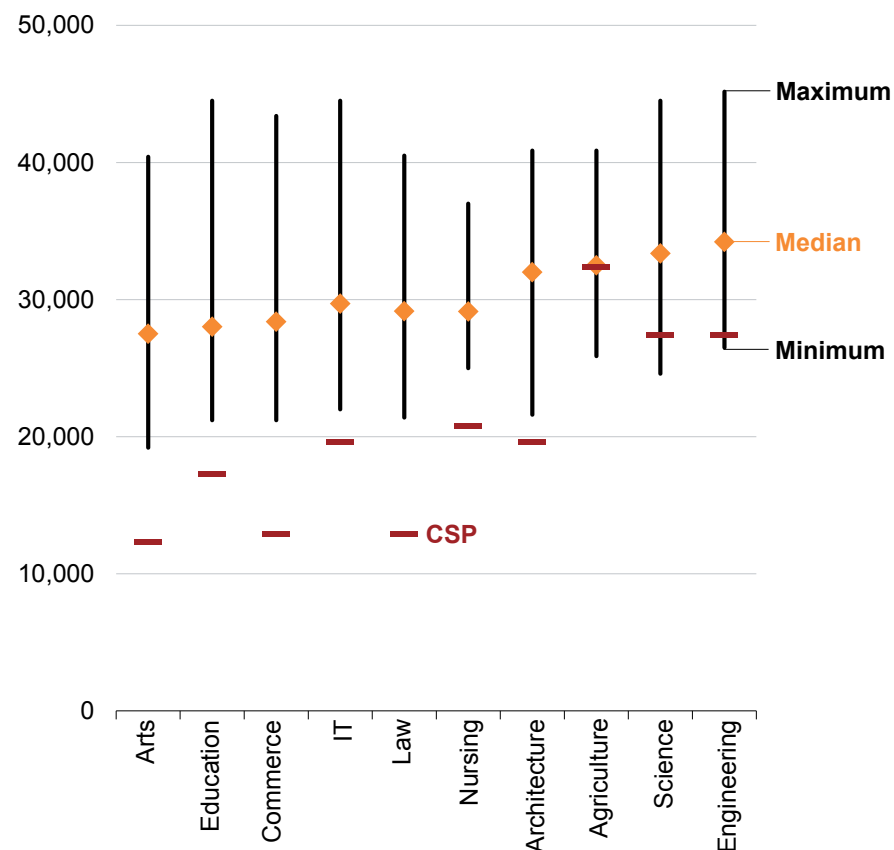
We can identify most revenue coming to public universities from teaching (Section 6.3), but spending on teaching is not currently reported, although the Government is going to collect this information from universities receiving CGS funding.<sup>221</sup>

There are inherent difficulties in calculating teaching spending. The same staff and facilities are used to produce teaching, research and community engagement. Time and facility use surveys can allocate some costs among activities, but not all expenditures can be neatly classified in this way. Assumptions need to be made, which may inflate or deflate teaching costs.

Using 2015 cost data, a 17-university study found that median undergraduate teaching costs were *below* funding rates in nine of ten broad fields of education (though at least one university had costs above funding in each of the ten). The average cost on this basis was about \$16,000 per equivalent full-time student.<sup>222</sup>

The behaviour of public universities suggests that funding for Commonwealth-supported places is usually sufficient to cover teaching

**Figure 7.1: Annual international-student bachelor-degree fees, 2018**  
\$2018



Notes: Course fees were based on comparing similar courses at different universities. Fees are indicative. 'CSP' = Commonwealth-supported place.

Source: University websites.

220. In 2018, 7 of 27 universities offering a full-fee master of teaching or education course to domestic students, and 12 of 23 universities offering a full-fee master of nursing course, charged fees below the Commonwealth-supported rates shown in Table 7.1. Source: University websites.

221. Spending on teaching and scholarship as a condition of funding: Department of Education and Training (2018e).

222. Deloitte Access Economics (2017, pp. xxii, 17).

costs. Public universities voluntarily increased their annual domestic bachelor-degree intake by more than 40 per cent between 2008 and 2015, when numbers stabilised.<sup>223</sup> The universities enjoyed healthy financial surpluses in this period (Section 6.6).

Universities often claim to be under-funded, but it is difficult to evaluate whether this is true, and, if so, by how much. The problems are partly conceptual – to what extent should research be funded through teaching, and what standard of course delivery is acceptable? And they are partly evidential – how should costs be calculated, and what assumptions should be made about reasonable costs?

#### 7.1.4 Internal allocation of funding

Universities are not obliged to spend teaching revenues in the disciplines or departments that earned them. The funding rates reported in Table 7.1 above are not recommended internal funding rates. They were essentially used – at least until the inception of the demand-driven funding system discussed in Section 7.2.1 below – to calculate a total sum of money paid to each university. Within their overall funding allocation, universities can design internal funding systems reflecting their own costs and priorities. The federal funding system does not adjust per-student rates to institutional differences, but it does permit universities to make those adjustments in how they spend their money.

In practice, revenue from Commonwealth-supported students tends to be allocated to the faculties or departments where the students are enrolled. If spending on these students exceeds revenues, the faculties or departments are typically described as losing money or receiving cross-subsidies from profitable parts of the university. If costs cannot be contained or other revenues found, ‘loss-making’ areas risk closure. So in practice Commonwealth funding rates shape university behaviour more than policy makers originally intended.

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<sup>223</sup>. Department of Education and Training (2018a).

## 7.2 Distributing student places

A higher education system requires a system of distributing student places. Places need to be allocated to higher education providers, disciplines and students. The three broad theoretical models are central allocation, block grant and market distribution.

In a *central allocation model*, the government determines detailed priorities and allocates the student places it funds accordingly. Priorities could be for specific courses or disciplines, higher education providers, or types of students. While nobody is forced to take student places created under government-priority setting, the system limits options. People who want a university place must take what is available. Priority setting can be supported by student incentives, such as scholarships or lower fees.

In a *block grant model*, the government allocates funding to higher education providers, with broad guidelines about its use, such as minimum numbers of students. Within these broad rules, universities decide how to spend the money.

In a *market distribution model*, the government does not set priorities. Higher education providers decide what courses to offer students, and students decide whether to enrol in the courses at the fees charged. This is the model that largely applies for international students, for much of the domestic postgraduate market, and among the non-university higher education providers (NUHEPs – see Section 1.2).

Compared to central allocation of student places, a market system gives students more power. Higher education institutions have stronger incentives to respond to student preferences, and to concentrate on the student experience. Yet market systems depend on students paying full fees, which may reduce total demand for higher education, especially without a student loan scheme.

A higher education ‘voucher’ scheme combines market mechanisms and public subsidies. Under this model, the government broadly steers the higher education market, using subsidies to make particular disciplines, or higher education generally, more financially attractive. The number of vouchers can be limited or unlimited, and rationed using academic results or other eligibility criteria. The key point is that higher education providers must compete for students, rather being allocated student places. Voucher schemes may have literal vouchers – documents sent to prospective students that they can redeem at higher education providers. Usually this is not necessary. Prospective students can provide higher education providers with evidence of their eligibility.

### 7.2.1 Distributing government-supported places

Historically, Australia has mostly used block grant systems to distribute government-supported student places. Not using detailed centralised allocation was an acknowledgement that universities are autonomous institutions (see also Section 1.3.3 to Section 1.3.5). Until the 1980s, this distance from political intervention was reinforced by using semi-independent bureaucratic bodies to distribute funding.<sup>224</sup> Centralised allocation was used at the margins, mostly through funding new higher education places. This was sometimes very prescriptive, allocating precise numbers of places to specific courses and campuses. But new places were only ever a small percentage of total Commonwealth-supported places.

Block grants let universities plan around predictable public funding levels. This gave the system stability, but weakened competitive pressures. Universities had few financial incentives to attract additional students or to change what they offered to reflect student preferences. For a few years in the mid-2000s, universities were penalised if they

exceeded enrolment targets set out in funding agreements with the Government by more than 5 per cent. With demand exceeding the supply of student places, each publicly-funded university had a virtually guaranteed share of total enrolments.<sup>225</sup>

In 2009, the Government announced that it would introduce a ‘demand-driven’ funding system.<sup>226</sup> After a phase-in period of increased maximum block grants, in 2012 funding caps on Commonwealth-supported bachelor-degree places at public universities, except in medicine, were lifted. Medical places, Commonwealth-supported postgraduate places and sub-bachelor places (diploma, advanced diploma, associate degree – see Section 1.1) were still allocated centrally, using funding agreements between the Government and universities. Despite these exceptions, demand-driven funding represented a major shift away from block grants to the voucher model. Bachelor-degree enrolments in each public university, along with the system as a whole, could now move up and down in line with university decisions and student demand.

Demand-driven funding achieved its original goals of increasing participation in higher education (see Section 2.3) and making universities more responsive to student and labour market demand.<sup>227</sup> But it was criticised for letting in under-prepared students, producing too many graduates, and costing too much. This last criticism finally brought demand-driven funding to an end, with the funding freeze discussed in Section 6.3.1.<sup>228</sup> Effectively, block grant funding has returned. However, the opposition Labor Party promises to restore demand-driven funding if elected.<sup>229</sup>

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224. Coaldrake and Stedman (2016, pp. 232–239).

225. A summary of allocative systems since 1989 can be found in Grattan Institute (2018).

226. DEEWR (2009, pp. 17–19).

227. Kemp and Norton (2014); Norton (2017c).

228. Birmingham (2017).

229. Shorten (2018).

## 8 Higher education policy making

Although the Commonwealth Government has limited direct constitutional power over education, it has come to dominate higher education policymaking. For decades it did this through attaching conditions to its funding, but a High Court case in 2006 gave it broader powers of direct regulation.

The most important Commonwealth Government agencies are the Department of Education and Training, the Tertiary Education Quality and Standards Agency, and the major research project funding bodies: the Australian Research Council and the National Health and Medical Research Council. Because migration policy is important to the international student market, the Department of Home Affairs also plays a role.

### 8.1 The rise of Commonwealth authority

Australian higher education began as a state responsibility. Except in its territories, the Commonwealth Government lacked clear constitutional power to establish or regulate a higher education institution. The Canberra-based Australian National University, legislated in 1946, is the only university with Commonwealth founding legislation.<sup>230</sup> There was no federal department or minister for education until 1966.<sup>231</sup>

While the states had full responsibility for education in Australia's early decades, after World War Two the Commonwealth slowly increased its policy involvement in higher education.<sup>232</sup> A 1946 amendment to

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230. Other universities are established under state or territory legislation or company law.

231. Previously education was managed by the Department of Prime Minister and Cabinet: Tracey (2001). See Parliamentary Library (2017) for the names of the first education minister and his successors.

232. See Tracey (2001), Forsyth (2014, especially chapter 2) and Department of Prime Minister and Cabinet (2014, chapter 4).

the Australian Constitution authorised the Federal Government to make laws with respect to 'benefits to students'. This remains the only reference in the Australian Constitution to education, albeit an indirect one. The main constitutional vehicle for funding higher education was through conditional grants to the states. This was replaced in 1993 with direct grants to universities.

The Commonwealth's control of money gave it significant power in higher education, but in law it was a limited power. The rules it imposed were conditions of grants, not laws that had to be followed. The public universities could, in theory, have declined a Commonwealth grant and its associated conditions. In practice, universities have generally accepted whatever funding conditions were set. This let the Commonwealth leverage its limited legal position into extensive control.

Commonwealth funding power reached its peak in the decade after 1974. State governments stopped funding teaching and research on a regular basis, and universities were not allowed to charge tuition fees until these were reintroduced from the mid-1980s.<sup>233</sup> Although the governments of this time respected university academic autonomy, the universities had limited non-Commonwealth government income to fund their own priorities (Figure 6.8 on page 59).

Until FEE-HELP began in 2005, most private higher education institutions received no money from the Commonwealth, and so were free of Commonwealth control, beyond general laws applying to all. Private higher education institutions were regulated by state accreditation agencies, although with national coordination of rules from 2000.<sup>234</sup>

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233. The period of free education and its gradual replacement is described in more detail in Norton (2017b).

234. MCEETYA (2000), later replaced by MCEETYA (2007).

High Court decisions have altered the legal basis of higher education policy. In the 2006 *WorkChoices* case the High Court took an expansive view of the Australian Constitution's corporations power. Since higher education is largely delivered by organisations, including universities, that are legally corporations (as opposed to partnerships or state government departments), the Federal Government now uses the corporations power to regulate higher education accreditation and quality control. The Tertiary Education Quality and Standards Agency (TEQSA) replaced the state higher education accreditation bodies in 2012.<sup>235</sup>

TEQSA is a sign of how higher education policy making is changing. Using the corporations power, the Commonwealth can now mandate rather than buy compliance. The funding legislation now imposes civil penalties (fines) on higher education providers breaching government requirements, alongside the older conditions on funding.<sup>236</sup> The corporations power brings all higher education institutions, not just those receiving public funds, under Commonwealth Government control.

While the *WorkChoices* case increased Commonwealth power, other High Court cases have complicated it. In a 2014 case on Commonwealth funding of school chaplains, the High Court took a narrow view of the 'benefits to students' power. The benefit needs to be closely related to being a student, and for specific students.<sup>237</sup> On this reading, the 'benefits to students' power almost certainly could not be used to fund research unless it directly involved students, such as the Research Training Program (Section 6.4.1).

Complicating matters further, direct Commonwealth research funding lacks an explicit constitutional basis. There is some High Court

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235. For more detail on the legal issues see Williams and Pillai (2011).

236. See the provisions introduced by the *Education Legislation Amendment (Provider Integrity and Other Measures) Act 2017*.

237. Chordia et al. (2015).

authority for using an implied 'nationhood' power to support research spending.<sup>238</sup> In 2015, the Government strengthened the legal basis of research block grants and some other university programs. It did this by mentioning in higher education funding legislation a list of potential constitutional foundations.<sup>239</sup> If direct Commonwealth research funding were successfully challenged in the High Court, it could be restored through conditional grants to the states.

The more likely outcome is that the states will continue with their current limited role in higher education policy.<sup>240</sup> They still have university establishment acts on their statute books, and impose various reporting and accountability requirements on universities. They can affect university admissions through their school systems and by their accreditation of teacher education courses (Section 3.1). They must be consulted about some TEQSA-related matters, including new universities in their jurisdictions. They are still expected to fund special projects at universities within their borders. Yet on key higher education policy matters the states have little influence.

As the Commonwealth controls the most important aspects of higher education policy, the relevant departments and agencies matter more than ever to the success of Australian higher education.

## 8.2 Commonwealth departments and agencies

### 8.2.1 The Department of Education and Training

Higher education is primarily the responsibility of the Department of Education and Training. It manages the major teaching and research block grant funding schemes described in Chapter 6 and 7. These

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238. See Twomey (2010) for an analysis and critique.

239. Now section 41–95 of the *Higher Education Support Act 2003*.

240. Charles Darwin University and the University of Canberra have legislation from their respective territories. Although the territories have a lesser constitutional status than the states, the following paragraph also applies to them.



are authorised by the *Higher Education Support Act 2003*. It also has over-arching policy responsibility for tertiary education standards (discussed below). These are authorised by the *Tertiary Education Quality and Standards Agency Act 2011*. Other important pieces of legislation overseen by the Department are the *Education Services for Overseas Students Act 2000* and the *Australian Research Council Act 2001*.

### 8.2.2 Higher Education Standards Panel

Under the TEQSA legislation the higher education minister performs the key policy making function, setting standards applying to higher education providers under the Higher Education Standards Framework. The standards cover higher education provider registration, course accreditation, and qualifications. Higher education providers need to meet the standards to offer courses leading to higher education qualifications.

The education minister appoints a Higher Education Standards Panel to develop and advise on the standards. Before making a standard, the minister consults state education ministers and TEQSA. The current standards took effect in 2017.<sup>241</sup> In practice, the minister uses the Panel to investigate and report on matters broadly related to the standards, such as how admissions requirements are publicised, students not completing their courses, and professional accreditation requirements.

### 8.2.3 Tertiary Education Quality and Standards Agency

TEQSA began operations in early 2012. Its main task is to apply and enforce the TEQSA legislation and the Higher Education Standards Framework. It is also responsible for several regulatory functions under the *Education Services for Overseas Students Act 2000*.

TEQSA registers higher education providers and approves courses offered by non-self-accrediting institutions (Chapter 1). It carries out this task independently of the minister, who can only give TEQSA directions of a general nature (not about a specific provider). These directions can be disallowed by a majority vote of the House of Representatives or the Senate.

The legislation establishing TEQSA sought to minimise the bureaucratic burden it places on higher education providers. TEQSA uses a range of risk indicators to monitor higher education providers, concentrating its attention on the institutions at most risk of not complying with the standards.<sup>242</sup>

### 8.2.4 The research grant agencies

The two main competitive grant research agencies are the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) (Section 6.4.1). They each have their own statutes. They report respectively to the education minister and the health minister.

The ARC and NHMRC work within broad policy frameworks established by the Government, with priorities set by the relevant ministers. Both organisations use systems of peer review to determine which applications are successful. This approach respects the culture of universities (Section 1.3). Each organisation's legislation prevents its minister interfering in favour of a project. The ministers can only approve or not approve the funding recommendations made by the agencies. Approval is usually a formality. Rare rejections of ARC grant recommendations are always controversial.<sup>243</sup>

The media and politicians sometimes question ARC-funded projects with seemingly obscure, trivial or politicised topics. Academics

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241. Department of Education and Training (2015a).

242. TEQSA (2018d).

243. Haigh (2006).



sometimes claim that the peer view process leads to favouritism (to the detriment of the complainant's application). Yet overall the ARC and NHMRC enjoy high esteem. The most widespread criticism is that, given low application success rates (Section 6.4.1), resources are wasted preparing and assessing unsuccessful applications.

### 8.2.5 The Chief Scientist

Australia's Chief Scientist advises the Prime Minister and other ministers on science, technology and innovation. Chief Scientists have called for increased enrolments in science and technology courses and led research policy reviews.

### 8.2.6 Department of Home Affairs

The Department of Home Affairs, which includes the former Department of Immigration, has a major influence on Australian higher education. It controls eligibility for student visas, and the post-study temporary and permanent migration programs that, in part, attract international students to Australia.

Onshore international students need a student visa. Visa applicants must show that they have confirmed enrolment for their course, have health insurance, meet rules on English language ability, and can support themselves financially. The amount of evidence needed depends on the applicant's home country and education provider.<sup>244</sup> The Department tries to exclude applicants with fraudulent documents or claims in their applications, or who might breach visa conditions on attending classes and work hours, or who might overstay their visa.<sup>245</sup>

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244. Department of Home Affairs (2018b). Providers and countries have different risk levels, based on histories of applications with fraudulent information, rates of overstaying in Australia after a student visa expires, and other visa issues: Department of Home Affairs (2018c).

245. Ibid.

International students graduating with a bachelor degree or higher qualification can apply for another visa to remain in Australia and work full-time. They can stay for two to four years depending on their qualification.<sup>246</sup> Former student visa-holders also remain in Australia through a range of other temporary visas.<sup>247</sup> Former students with work rights can apply for an independent skilled migration visa or employer sponsorship to continue their employment in Australia beyond this period.<sup>248</sup>

### 8.2.7 Austrade

The Australian Trade and Investment Commission, known as Austrade, promotes Australian education to international students. It is a statutory agency in the Foreign Affairs and Trade portfolio.

### 8.2.8 Departments of Social Services and Human Services

The Department of Social Services is responsible for student income support policy. Through Centrelink, the Department of Human Services administers payment of student income support, including the Start-up Loan (Section 6.3.4).

## 8.3 Higher education interest groups

### 8.3.1 University interest groups

The oldest university interest group is Universities Australia, formerly known as the Australian Vice-Chancellors' Committee (AVCC). All 37

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246. Department of Home Affairs (2018d).

247. Department of Home Affairs (2018e, p. 69).

248. Examples of sponsored visas are the Employer Nomination Scheme (subclass 186) and the Regional Sponsored Migration Scheme visa (subclass 187). Skilled Independent (subclass 189) or Skilled Nominated (subclass 190) visas are available to some former international students.

public universities, along with Bond University and the University of Notre Dame, are members of Universities Australia.

In the 1990s, the AVCC struggled to represent the diverging interests of its members, especially on research policy and fees for domestic students. Several new university organisations have been formed since 1999 to give voice to the different perspectives within the university sector. These include the Australian Technology Network, which includes all the universities of technology except Swinburne; the Group of Eight, representing the eight most research-intensive universities; Innovative Research Universities, mostly made up of suburban research-intensive universities founded in the 1960s and 1970s; and the Regional Universities Network, which represents six regional universities. About two-thirds of universities are members of one of these groups. Full membership lists of the university interest groups are in Appendix A.

### 8.3.2 Non-university higher education provider interest groups

The largest private higher education interest group is the Australian Council for Private Education and Training (ACPET), which also represents vocational education providers. The smaller Council of Private Higher Education (CoPHE) represents only higher education providers. Both organisations have lobbied for more equal treatment of public and private higher education provision.

### 8.3.3 Staff and student interest groups

The major union representing university staff, the National Tertiary Education Union (NTEU), has more than 27,000 members, although this is less than a quarter of university staff.<sup>249</sup>

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249. NTEU (2017, p. 25). Some non-academic staff are not eligible to join the NTEU. O'Brien (2015) provides a general history of the NTEU.

The National Union of Students (NUS) is a peak body for university student organisations, although a substantial minority of student unions are not currently involved.<sup>250</sup> The Council of Australian Postgraduate Associations (CAPA) is another student peak body, representing most campus-based postgraduate organisations. These student groups are consistent advocates of higher education public funding.

The Council of International Students Australia (CISA) represents international students in Australia, including those enrolled in higher education courses. Unlike other higher education interest groups, it is active on state-level issues including public transport concessions, crime affecting international students, and access to public hospitals.

In 2017, TEQSA established a Student Expert Advisory Group, which includes the NUS, CAPA and CISA, along with other smaller student groups.<sup>251</sup>

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250. NUS does not maintain a public list of its affiliate organisations. This information comes from a spreadsheet of delegates to the 2017 annual conference: @edpity and @Conor\_Day99 (2017). Hastings (2003) provides the early history of NUS.

251. TEQSA (2018e).

## 9 Benefits of higher education for the public and employers

Higher education attainment has increased significantly since the 1980s, due to more students in Australian higher education institutions and migration. Enrolments have increased in areas of skills shortage.

Australia’s research performance is strong. Australian academics are over-represented as authors of the world’s most cited research publications. Australian universities do well in international rankings of research universities.

Although public confidence in Australian universities fell between 2014 and 2016, it remains high compared to many other institutions in Australian society.

### 9.1 Creating a more educated population

As the enrolment figures in Chapter 2 suggest, higher education attainment in Australia has increased over time. In 1982, 645,000 people held a degree; by 2017 that number exceeded 4.8 million.<sup>252</sup> Figure 9.1 shows the share of Australian residents aged 25–34 with a bachelor degree or higher qualification. Over the past 35 years, the share of young adults holding a degree has increased dramatically, especially for women, whose attainment level was less than 10 per cent in the early 1980s but 45 per cent in 2017. Men lag well behind on 34 per cent, although if upper-level vocational qualifications are included attainment levels are more equal, with men at 69 per cent and women at 72 per cent.<sup>253</sup>

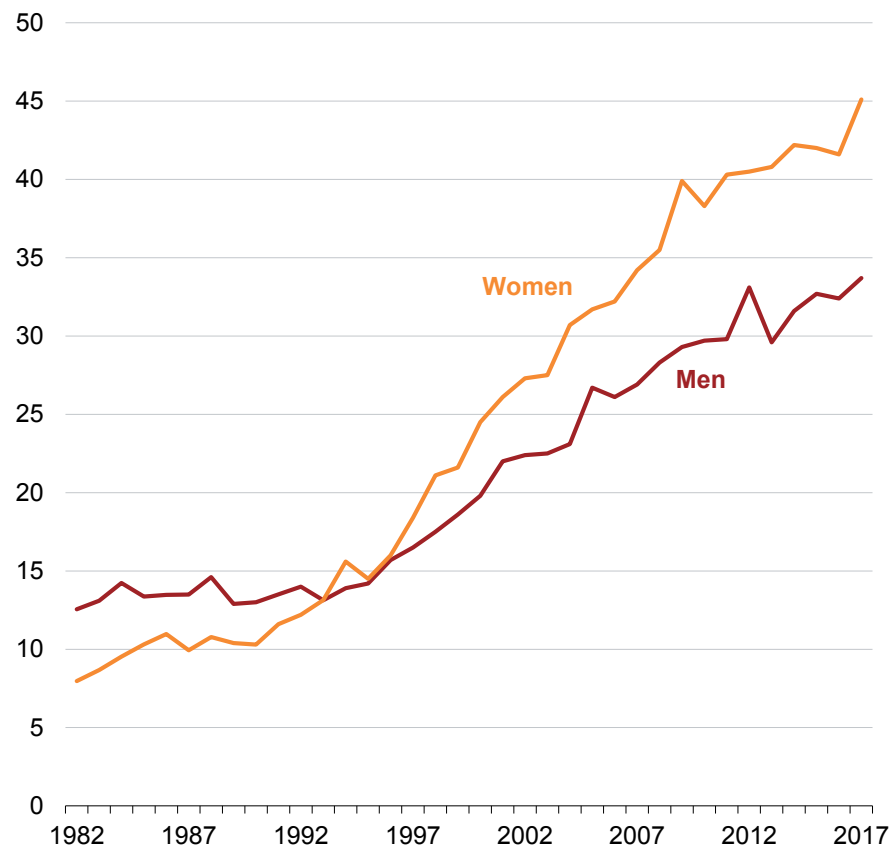
While Australia’s population has become more educated, this is not solely due to its higher education system. Australia’s skilled

252. ABS (2017d).

253. Grattan calculations from ABS (2017e). Including diploma and certificates III and IV for upper-level vocational qualifications.

**Figure 9.1: Higher education attainment rate, men and women aged 25–34, 1982–2017**

Per cent



Notes: Bachelor degree or above. The fluctuations observed in some years are due to problems with the statistical sample.

Source: ABS (2017d).

migration program has also contributed significantly, with 24 per cent of bachelor-degree or higher qualifications completed overseas. The Australian-born population is less educated than migrants, with 38 per cent of women born in Australia aged 25–34, and 25 per cent of men born in Australia aged 25–34, holding a bachelor degree or above in 2017.<sup>254</sup> These attainment rates will increase as students from the 2009 to 2015 enrolment boom reach the 25–34 age range (Section 2.3). This will increase male education levels, but because women remain a substantial majority of university students (Section 2.3.4), the gender gap is unlikely to narrow significantly.

## 9.2 Meeting skills needs

In many occupations, employers require or prefer staff with university qualifications. The latest ABS occupational list has 385 managerial and professional occupations rated as needing a university qualification or equivalent experience.<sup>255</sup> The higher education system and migration are used to supply the labour force with relevant skills.

The main available measure of skills shortages is an employer survey conducted by the Commonwealth employment department. An occupation is classified as in skills shortage if employers cannot fill vacancies, or struggle to fill them, at current pay and condition levels, in reasonably accessible locations. This is not necessarily an absolute skills shortage; appropriately-skilled people may exist but choose other work.

Fifty-one high-skill managerial or professional occupations have had reported skills shortages at some time since 1986. Over the decade to 2017, 13 occupations, mostly in the health professions or linked to the mining industry, had shortages for five years or more. In 2008, a peak of 40 professional or managerial occupations reported shortages.

254. Grattan calculations from *ibid.*

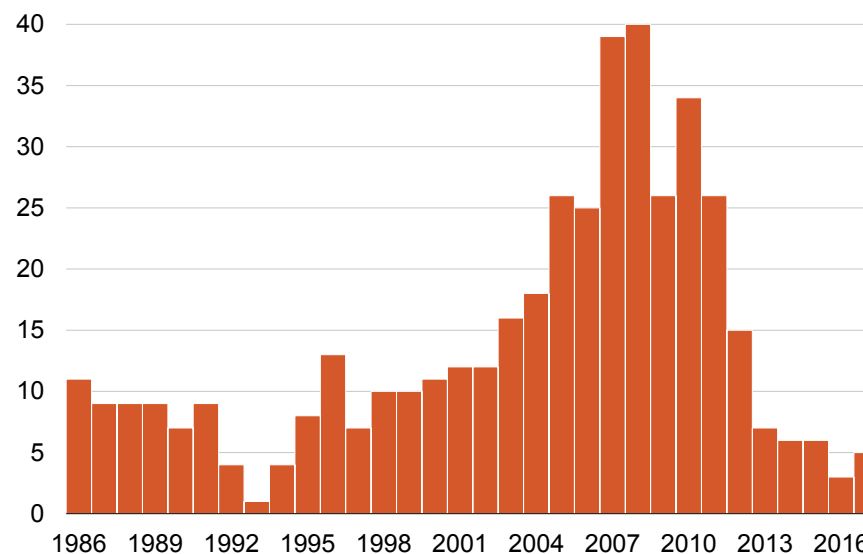
255. ABS (2013). At the six-digit level.

But few do so now: only five occupations had shortages in 2017 (Figure 9.2).<sup>256</sup>

The main skills supply weakness is that health workforce needs have often grown more quickly than the supply of health professionals. But in most professional and managerial occupations, and at most times, graduate labour supply has been sufficient.

Higher education policy does not usually directly target skills needs. Before 2012, new Commonwealth-supported places were sometimes allocated in response to employer complaints about skills shortages.

Figure 9.2: Number of managerial and professional occupations experiencing skills shortages, 1986–2017



Source: Department of Jobs and Small Business (2018).

256. Department of Jobs and Small Business (2018).

But mostly it is up to universities to respond to labour market demand. Under block grant funding, used until 2011 and again from 2018 (Section 7.2), universities lacked a strong incentive to meet demand. With little or no funding for taking additional students, they could meet skills needs only by moving student places from other courses. The demand-driven system of 2012–2017 gave universities more capacity to meet skills needs. Since it was introduced, the largest increase in enrolment share has been in health-related courses (Section 2.3.1). More detailed analysis of specific courses shows that universities responded with increased student places in areas of skills shortage.<sup>257</sup> This may not continue without demand-driven funding.

Although employers sometimes cannot hire all the graduates they need, they are generally satisfied with those they do appoint. In a survey of the direct supervisors of graduates, 84 per cent were satisfied overall.<sup>258</sup>

### 9.3 Research performance

As Section 5.3 shows, the quantity of research outputs, especially publications, from Australian universities has increased over time. A measure of research productivity is the average number of annual academic publications per academic. This more than doubled to 1.5 a year between 1997 and 2014, although growth is less rapid if the increasing numbers of research-only staff are considered.<sup>259</sup>

257. Kemp and Norton (2014, chapter 3); and Norton (2017c).

258. Social Research Centre/Department of Education and Training (2017, p. ii).

259. This finding uses a different publications count to that reported in Section 5.3. The productivity analysis includes a weighted count of books, book chapters, journal articles and conference proceedings. In the case of multiple authors, research outputs are apportioned between them (so the work of foreign authors would not be counted, and there is no double counting of multi-author articles). 'Academic staff' is all academics with a teaching-and-research or research-only appointment: calculated from Department of Education and Training (2015e) and Department of Education and Training (2015c). Assuming

Publication numbers do not measure research quality or significance, but the best Australian research publications are well regarded internationally. Australian academics are over-represented as authors of the top 1 per cent of academic publications, as measured by how often these publications are cited by other academics. In 2016, 7 per cent of these most-cited publications had an Australian author, up from 3 per cent in 2000.<sup>260</sup>

In recent years, international university rankings have attracted attention. One, the Shanghai Jiao Tong Academic Ranking of World Universities, focuses exclusively on research performance. Indicators include papers published in high-prestige journals, numbers of high-citation researchers, and winners of Nobel Prizes and Fields Medals (a prestigious mathematics award). The most recent ranks for Australian universities are in Table 9.1 on the next page. Six are in the top 100 universities in the world, up from two in the first year of the Shanghai Jiao Tong ranking, 2003. Twenty-three Australian universities are in the top 500 universities in the Shanghai Jiao Tong ranking.

More detailed analysis of research performance by university and discipline is available from the Excellence in Research for Australia (ERA) report from the Australian Research Council. The 2018 ERA is underway, but the results had not been released as of August 2018. Quality indicators include citations, peer review (other academics assessing the quality of work) and the level of grant income. ERA also looks at indicators of research volume and activity, of research application (such as patents), and of recognition (for example, a fellowship in a learned academy or editing a prestigious journal).<sup>261</sup>

that teaching-and-research staff spend 40 per cent of their time on research, and that research staff spend all their time on research, research output per full-time-equivalent staff member increased from 1.3 to 2.5 publications a year.

260. Department of Industry, Innovation and Science (2017b).

261. For some of the background to ERA and rankings, see Coaldrake and Stedman (2016, chapter 6).

In the ERA assessment, fields of research in each university that met a minimum threshold of outputs are rated from one to five. Ratings one and two indicate that research performance in that field is 'below world standard'. Rating three indicates average performance at world standard. Rating four is above world standard, and rating five is well above world standard. Table 9.2 shows the results. On this measure, most research-active disciplines in Australian universities are of at least world standard. The proportion of research disciplines rated as below world standard dropped from 22 per cent in the 2012 ERA to 11 per cent in the 2015 ERA. The results suggest that Australian universities find ways to minimise the number of below-world-standard areas.<sup>262</sup>

ERA can also be used to identify disciplinary areas of national strength and weakness. Reflecting the large investment in health research (Section 5.2), more than half of medical and health science disciplines

**Table 9.1: Top eight Australian universities, Shanghai Jiao Tong university rankings, 2018**

University	Ranking
University of Melbourne	38
University of Queensland	55
University of Sydney	68
Australian National University	69
Monash University	91
University of Western Australia	93
University of Adelaide	101–150
University of New South Wales	101–150

*Notes: A further fifteen Australian universities are without specific rank in the 151–200, 201–300, 301–400, and 401–500 ranges.*

*Source: ARWU (2018).*

262. See Henman (2015) for a discussion on universities 'gaming' ERA. The ARC states that this is not a large problem: ARC (2015b).

**Table 9.2: Excellence in Research for Australia, 2015**

Rating	Units of evaluation	Percentage
1 or 2 (low)	198	11%
3	470	26%
4	544	31%
5 (high)	563	32%
Total	1,775	100%

*Source: ARC (2015a).*

were rated as well above world standard. Nearly half of the smaller earth sciences field were also well above world standard. In education and in commerce, more than a third of research disciplines were rated as below world standard.

#### 9.4 Research impact

Policy makers have long believed that while Australian university research does reasonably well on quality measures, its social and economic impact should increase.<sup>263</sup> This belief is a major reason why university research activity is now much more likely to be 'applied' – aimed at specific objectives – than it was 25 years ago (Section 5.2). It is why universities work with external organisations much more than before. Between 2000 and 2017, Australian private sector research funding increased by 90 per cent, to \$730.4 million.<sup>264</sup> It is why in the 2018 ERA the ARC will also evaluate the engagement of university researchers with the community and its broader impact.<sup>265</sup>

263. Department of Education/Department of Industry (2014); Larkins (2011, chapter 7); and Dawkins (1987, p. 65).

264. Department of Education and Training (2017m). HERDC Category 3 – domestic. In \$2018.

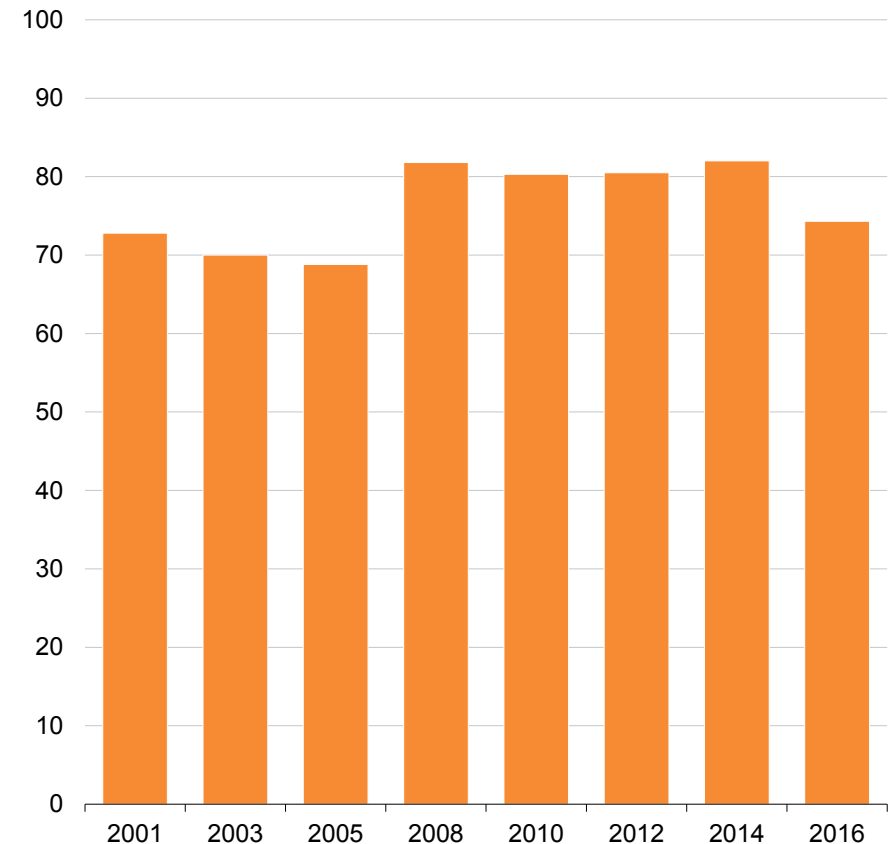
265. ARC (2017b).

One measure of impact is businesses using universities as sources of innovation. An ABS business survey found that 7,600 businesses sourced ideas or information for innovation from a university in 2016–17, although this was fewer than in recent years. Health-related businesses were the most likely to source ideas from universities, reflecting the strong emphasis on medical research in Australian universities (Section 5.2). A much larger number of business – 78,000 – sourced innovation ideas from ‘websites, journals, research papers or publications’.<sup>266</sup> Once published or publicly released, research can have impact without any direct connection between its users and universities.

### 9.5 Public perceptions

Various social surveys have asked Australians about their confidence in social institutions, including universities. Universities enjoy high levels of public confidence. In 2016, 74 per cent of respondents who expressed a view said that they had either a ‘great deal’ of confidence in universities (12 per cent), or ‘quite of lot of confidence’ (62 per cent) (Figure 9.3). That is the lowest figure since 2005, but universities rated third highest of the 14 institutions included in the 2016 survey.

**Figure 9.3: Public confidence in universities, 2001–2016**  
Per cent of people with a ‘great deal’ or ‘quite a lot’ of confidence



*Note: Percentages are of poll respondents who offered a view, omitting those who did not answer the question or gave a ‘don’t know’ response.*

*Sources: Bean et al. (2003), Gibson et al. (2004), Wilson et al. (2006), McAllister (2008), McAllister et al. (2011), McAllister and Pietsch (2012), McAllister (2016) and Cameron and McAllister (2018).*

266. ABS (2018e) and predecessor publications.



## 10 Employment and earnings benefits of higher education for graduates

Each edition of *Mapping Australian higher education* examines one topic in greater depth. In 2018, this topic is graduate employment and earnings. The key findings are presented below, and subsequently explored in more detail.

### Young graduates get less financial benefit from their degree than in the past

Bachelor-degree holders still enjoy a significant income premium over Year 12 holders, but it is less than it was. Early-career male graduates earned less income in 2016 than 2006. While early-career female graduates earned more over the decade, earnings growth was greater for females with only Year 12. The growth was driven by women with children. Male and female graduates without children became more likely to work part-time and work in jobs that only require a Year 12 education.

Evidence from previous economic downturns suggests the Global Financial Crisis and the end of the mining boom will have a long-lasting impact on the earnings prospects of early-career graduates.

### Young education, nursing and medical graduates are doing better than in the past, but young science and commerce graduates are doing worse

Earnings grew over the decade for early-career education, nursing and medicine graduates, but fell for early-career science and commerce graduates. Commerce enrolments reflect these deteriorating outcomes, but science enrolments do not.

### The worst has passed

Employment trends among recent graduates suggest that outcomes will get better. New graduates are still less likely to get a full-time job than a decade ago, but their prospects are improving (Section 10.1). Their salaries grew between 2016 and 2017.<sup>267</sup> The number of professional jobs held by young people has increased in recent years.<sup>268</sup> Experts believe that economy-wide wage growth has reached its lowest point.<sup>269</sup> Domestic demand for bachelor degrees has been stable since 2015, so the annual number of course completions will soon plateau.

### Policies to support working mothers are succeeding

Paid maternity leave has become more widely available, from both employers and the government. So when women have children they are increasingly choosing to take maternity leave instead of quitting the workforce. As mothers who take maternity leave are more likely to return to work, female workforce participation has increased. The increased child care subsidy in 2008 also encouraged more women to work, and more did so full-time.<sup>270</sup>

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267. Department of Education and Training (2018c, p. 38).

268. ABS (2018f).

269. Debelle (2018, p. 7).

270. The increased in participation has not come at the cost of mothers' time with their newborns. The proportion of mothers spending at least four months with their newborns increased from 65 per cent to 74 per cent between 2011 and 2017, ABS (various years[a]). Childcare subsidies typically have a greater impact on workforce participation per dollar spent than maternity leave subsidies, Daley et al. (2012, p. 43).

The new Child Care Subsidy introduced in mid-2018 is making childcare more affordable for women returning to work, so more are expected to work full-time.<sup>271</sup>

### The gender earnings gap is narrowing

Women in 2006 were expected to earn about 30 per cent less than men over their careers. But as more women spend more time at work, the lifetime earnings gap is narrowing. By 2016, the gap had reduced to 27 per cent. This is the equivalent of more than one year of work for women.<sup>272</sup>

It is a virtuous cycle. As women spend more time in the workforce, they gain more experience and earn higher pay, which further encourages them to work.

Progress is slow, but as successive cohorts of young graduates have careers that are less disrupted by motherhood, the gender earnings gap will continue to decline.

## 10.1 Employment outcomes of recent graduates

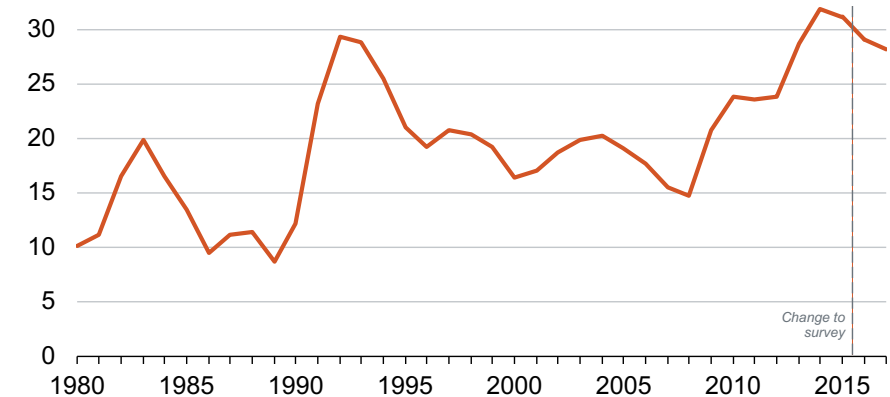
Future employment is not the only benefit of going to university, but most students cite it as their main reason. However, changes in higher education policy and the Australian economy have made graduate employment outcomes less certain.

In higher education, the easing of funding caps led to surging student enrolments between 2009 and 2015 (Section 2.3). This, combined

with a migration program skewed towards skills, means the Australian population is much more educated than it was even a decade ago (Section 9.1 on page 71). Many more people are chasing the jobs that graduates aspire to hold.

The number of professional jobs has not grown as fast as the number of graduates. Since 2008, the number of new professional jobs created each year has twice dropped significantly: in 2009 after the beginning of the global financial crisis (GFC) and then, more severely, in 2013 after the end of mining boom.<sup>273</sup>

**Figure 10.1: Under- and unemployment for recent graduates, 1980–2017**  
Per cent of bachelor-degree graduates available for full-time employment but yet to find it, four months from graduation



Notes: Chart shows the proportion of bachelor-degree graduates available for full-time work who are still seeking it approximately four months after graduation. They are not necessarily unemployed, because they may have part-time or casual employment. For discussions of survey differences, see Footnote 274 on the next page.

Sources: GCA (2016) and Department of Education and Training (2018c).

273. ABS (2018f). In addition to these cyclical dips in professional employment growth, some labour market analysts believe that new technologies are automating work previously carried out by skilled professionals. However, there is no evidence that automation is accelerating in Australia: Borland and Coelli (2017).

271. Most families are better off under the new Child Care Subsidy scheme, Department of Education and Training (2016, pp. 24–29) and Phillips (2016, p. 6). The Productivity Commission and PwC independently modelled a similar package of reforms as the Child Care Subsidy reform and found that it would increase full-time workforce participation: Productivity Commission (2015, p. 670) and PwC (2016, p. ii).

272. Based on average weekly total earnings for women in May 2016, ABS (2017f).

These higher education and employment changes have affected new graduates. The rate of unemployment or under-employment four months after graduation grew from 15 per cent before the GFC in early 2008 to its highest-recorded level of 32 per cent in 2014 (Figure 10.1). Employment rates are now recovering, although they remain low by historical standards.<sup>274</sup> In early 2017, 28 per cent of recent graduates who were looking for full-time employment were yet to find it. Former international students are less likely to be working full-time than domestic graduates.<sup>275</sup>

Employment outcomes vary by field of education. Graduates from health-related courses are doing best. Science and creative arts graduates are doing badly; more than 40 per cent were still looking for work in early 2017.<sup>276</sup> The 2016 edition of *Mapping Australian higher education* examined the poor employment outcomes of science graduates and evidence from the next section supports the pessimistic conclusions of two years ago.<sup>277</sup>

As time passes after graduation, employment levels rise. Three years after finishing their course, 11 per cent of bachelor-degree graduates who want full-time employment do not have it (Figure 10.2). This is worse than the three-year outcomes for pre-2009 graduates. But very poor short-term results in 2013 and 2014 are only moderately translating into longer-term difficulties in finding full-time work (although some graduates may have given up looking for a full-time job).<sup>278</sup>

274. The 2015 to 2016 improvement should be interpreted with caution because of changes to the survey which are likely to have reduced the proportion of graduates that are under- and unemployed by about 2 percentage points, Department of Education and Training (2017n, appendix 1-3).

275. Karmel et al. (2017).

276. Department of Education and Training (2018c, p. 4).

277. Norton and Cakitaki (2016, pp. 84–91).

278. Wilkins (2018) found that about 20 per cent of people who were underemployed for three consecutive years exit the labour force. The study included graduates and non-graduates.

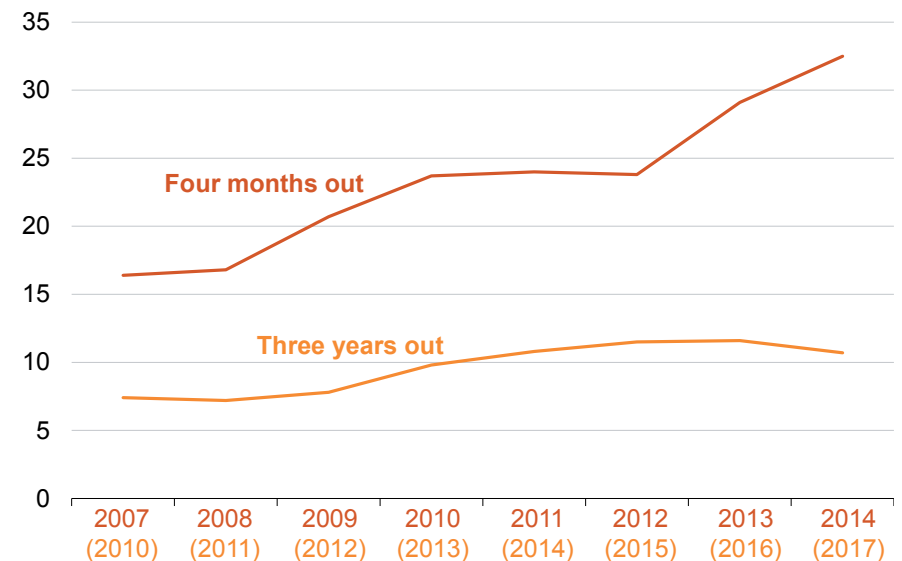
Unsurprisingly, these slow career starts are affecting earnings, with recent graduates earning less than earlier graduates at the same point in their careers.<sup>279</sup>

## 10.2 Graduate career outcomes between 2006 and 2016

While employment outcomes soon after graduation are important, so too is the rest of a student’s career. This section uses Census data to look at how bachelor-degree graduate career and career-stage incomes have changed between 2006 and 2016. It then examines

**Figure 10.2: Under- and unemployment for graduates three years after graduation, 2010–2017**

Per cent of bachelor-degree graduates available for full-time employment, but yet to find it



Source: Department of Education and Training (2018i).

279. Wilkins (2017, p. 59).

outcomes for graduates compared to people who finished their education at Year 12. Box 1 on the next page explains how we estimate career earnings.

### 10.2.1 Graduate earnings from 2006 to 2016

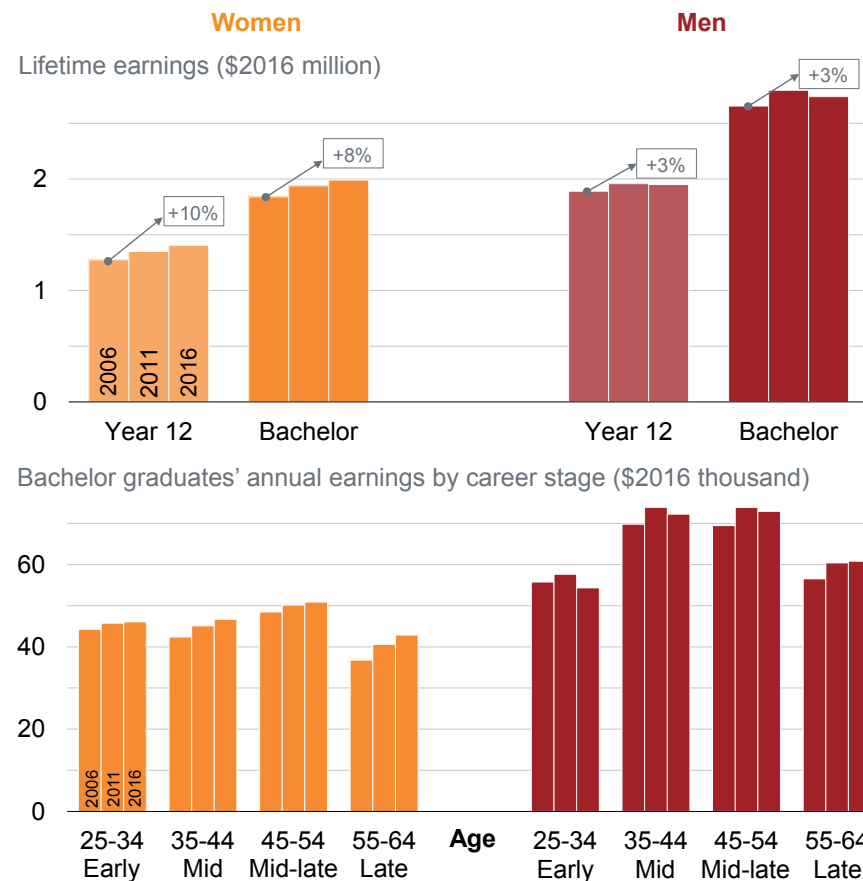
Predicting future incomes necessarily requires assumptions; we initially assume that recent graduates will earn as much at each stage of their career as earlier graduates. Under this assumption, the 2016 Census suggests that both female and male graduates would earn more than graduates from 10 years before.

The 2016 median female graduate would earn nearly \$2 million over her career, as Figure 10.3 shows in the top panel. That is 8 per cent more in lifetime earnings in real terms than the median-income female graduate in 2006. The median-income male graduate in 2016 would earn \$2.7 million over his career, 3 per cent more in real terms than in 2006.

The 2016 Census results are, however, complicated by outcomes that vary by career stage. Median earnings for early-career male graduates (those aged 25 to 34) grew during the first half of the decade, but fell significantly during the second half, leaving them with a net earnings reduction of nearly 3 per cent in real terms since 2006 (Figure 10.3). The income of mid-career male graduates (aged 35 to 54) also fell in the second half of the decade. Late-career male graduates (aged 55 to 64) did better; their income grew 8 per cent over the decade.

Female graduates across all age groups earned more in 2016 than 2006, but older women generally experienced stronger earnings growth than younger women. The bottom panel of Figure 10.3 shows the median late-career female graduate (aged 55 to 64) earned 17 per cent more in real terms in 2016 than her counterparts in 2006, while early-career female graduates (aged 25 to 34) earned just 4 per cent more.

Figure 10.3: Expected earnings for graduates and school leavers



Notes: Median income indexed to 2016 dollars using CPI. Income is net of income tax, Medicare levy and HELP debt repayments based on the 2016 settings. Australian citizens only. See Weidmann and Norton (2012).

Sources: ABS (2009), ABS (2012), ABS (2017a) and ABS (2017c).

### Box 1: Career earnings calculation

This report uses income data from the 2006, 2011 and 2016 Censuses to estimate career earnings for Australian graduates with a bachelor degree as their highest qualification, and for people with Year 12 as their highest qualification, in and outside the workforce.<sup>a</sup>

Census employment and earnings questions ask about the last week or year. We use this snapshot-in-time data to estimate earnings for an age cohort. For example, we use the incomes of graduates across all ages in 2016 to estimate earnings for the 2016 graduates over their career. This assumes that graduates aged 25 in 2016 will at age 30 in 2021 earn the same amount as graduates aged 30 in 2016 (indexed for inflation).

We categorise bachelor degree graduates and school leavers by age and income percentile. For example, a graduate with earnings at the 30<sup>th</sup> percentile earns more than about 30 per cent of graduates and less than about 70 per cent. Most of the analysis is based on the median-income graduate, someone at the 50<sup>th</sup> percentile.

We assume graduates remain on the same income percentile throughout their career. Year-to-year relative income is often more volatile,

especially when graduates move in and out of the labour force or between full- and part-time employment. Our assumption smooths out these individual differences to a greater extent than is likely in real life.

The analysis includes bachelor degree graduates who are studying but excludes people with postgraduate qualifications.<sup>b</sup>

Earnings are presented as net earnings, deducting the cost of taxation, textbooks and student contributions borrowed and repaid through the Higher Education Loan Program. We have assumed 2016 costs, tax rates and HELP repayment settings for all Census years. Future changes in tax rates would alter the net earnings estimates.

Lifetime earnings are the sum of annual income of graduates aged between 18 and 65. Average annual income of each career stage is the sum of annual median earnings of the corresponding 10 years divided by 10.

This analysis updates the analysis from a 2012 Grattan Institute report, *Graduate Winners*. The technical paper attached to that report outlines our methodology.<sup>c</sup>

- a. School leavers who were studying after finishing school were excluded, removing school leavers who were studying for a bachelor degree because they are not representative of people with Year 12 as their highest education level.
- b. For graduates in their late 20s, rates of further study grew slightly from 2006 to 2016 (from 14 per cent to 15 per cent). The change varies by disciplines. The proportion studying was constant among graduates in their early 30s over the decade: ABS (2009), ABS (2012) and ABS (2017a). Graduates who are studying generally but temporarily earn less than other graduates.
- c. Norton (2012); and Weidmann and Norton (2012).

Unfortunately, the weak results for younger cohorts, showing in both the graduate outcome statistics (Section 10.1) and the Census, suggest that lifetime earnings estimates from the Census model may overstate actual future incomes.

Many early-career graduates entered the job market during the GFC, when it was difficult to find full-time work. This affected young people more than older people. The effects are likely to be long-lasting.<sup>280</sup> With fewer years in steady full-time employment than earlier graduate cohorts, recent early-career graduates have accumulated less experience and received less employer training, reducing their skills development.<sup>281</sup> The graduates who were employed experienced low wage growth.

Finding a job was also harder because there are more graduates than in the past. The Commonwealth eased caps on funding for bachelor-degree places, which led to more course completions from 2011, directly affecting the younger graduates in the 25–34 year old cohort in 2016.<sup>282</sup> Skilled migration also had a significant effect: a quarter of early-career bachelor-degree holders aged 25–34 years in 2016 had completed their qualification overseas, increasing competition for jobs with domestic graduates.<sup>283</sup>

280. I. Watson (2018) found that young workers who entered the labour market in Australia after the GFC had worse long-term employment prospects than those who entered prior. Kahn (2010) found a similar effect for US graduates entering the labour market in weak economic conditions. Oreopoulos and Petronijevic (2013) found that entering the labour market during a downturn can reduce earnings for up to 10 years after graduation. See Dhillon and Cassidy (2018) on how young people are affected during a downturn.

281. Hourly pay rates for graduates increase with experience: Wilkins (2018, p. 50).

282. Department of Education and Training (2018a).

283. ABS (2016).

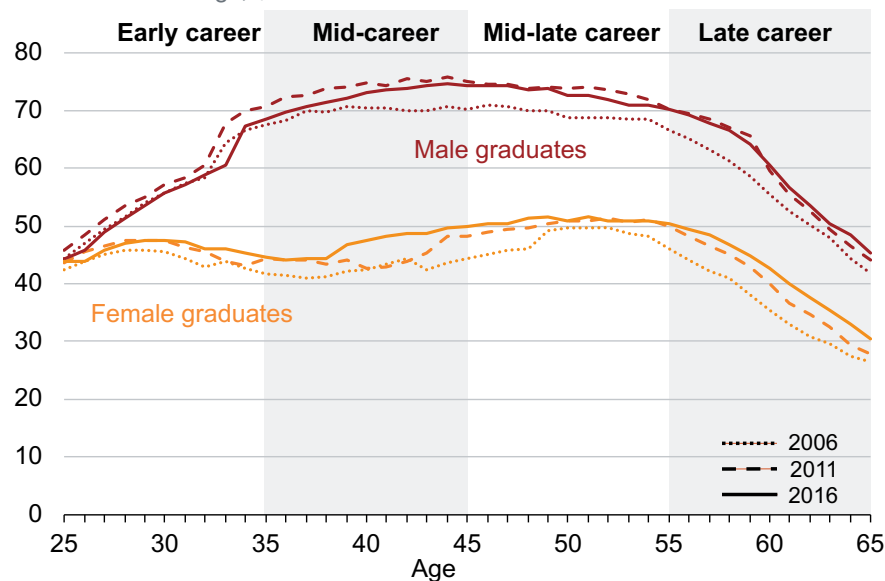
### 10.2.2 The gender gap

Over the decade to 2016, women generally did better than men in the bachelor-degree graduate labour market. This reduced the gender earnings gap – but it remains large. Female graduates of 2006 were expected to earn 30 per cent less over their career than male graduates. In 2016, the expected gap fell to 27 per cent, with the median female bachelor-degree graduate estimated to earn \$750,000 less than the median male bachelor-degree graduate over their career.

The career earnings gap is a result of women having interrupted careers and lower average hourly rates of pay than men. As Figure 10.4

**Figure 10.4: Annual earnings after tax of median-income graduates between 2006 and 2016**

Net annual earnings, \$2016 thousand



Notes: See Figure 10.3.

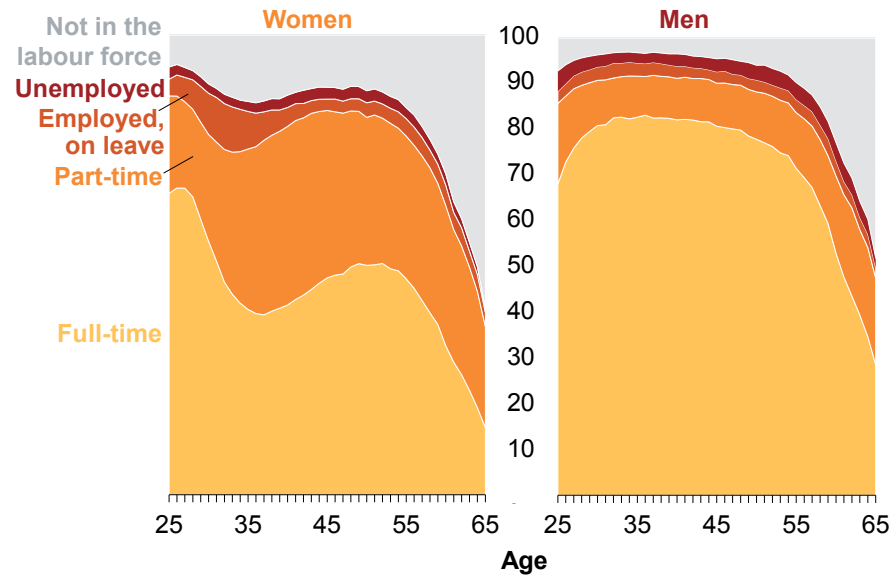
Sources: See Figure 10.3.

shows, the earnings gap is largest during mid-career (aged 35 to 44), when gender differences in full-time work rates are at their peak. During mid-career, about 80 per cent of male graduates but only about 40 per cent of female graduates work full-time, as Figure 10.5 shows. Male graduates spend most of their career in full-time work. Many female graduates spend most of their career out of full-time work, either working part-time or not employed.

Despite the remaining gender gap, the earnings improvement for female graduates is significant. The following sections discuss the un-

**Figure 10.5: Labour force participation of male and female graduates in 2016**

Per cent of bachelor-degree graduates by labour force participation



Notes: See Figure 10.3.  
Sources: See Figure 10.3.

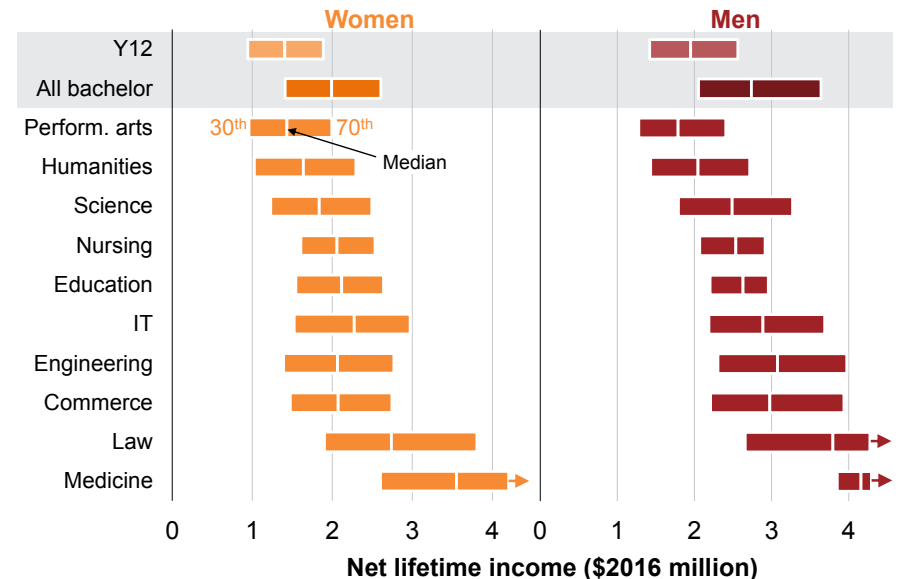
derlying factors driving stronger earnings growth for female graduates than male graduates.

**The influence of course**

Previous research has found that which course a student takes influences their subsequent income.<sup>284</sup> Figure 10.6 shows that this remains true in the 2016 Census. For both genders, median-income humanities and performing arts graduates still earn the least, while law and medicine graduates still earn the most. Engineering and

**Figure 10.6: The range of expected lifetime earnings of graduates by discipline in 2016**

Earnings at the 30<sup>th</sup>, 50<sup>th</sup> (median), and 70<sup>th</sup> percentile



Notes: See Figure 10.7. See Appendix C for how fields of education are classified.  
Sources: Figure 10.7.

284. Norton (2012).



commerce degrees can lead to very high lifetime income, as seen at the 70<sup>th</sup> percentile, although less so for women. Nursing and education graduates generally do not earn very high incomes.

For the male median-income graduate, earnings didn't rise much over the decade except for education, law, nursing and medicine (Figure 10.7 on the following page). But only 20 per cent of men with a bachelor degree have qualifications in these fields.

For the female median-income graduate, expected lifetime earnings grew in more disciplines, but by the most in education, nursing, engineering and medicine. Nearly 50 per cent of women with a bachelor degree have qualifications in these fields.

For early-career graduates (aged 25 to 34), medicine, nursing and education are the only disciplines in which earnings grew between 2006 and 2016 for both men and women (Figure 10.8 on the next page). Earnings for female early-career graduates grew in more disciplines than for men, but by the most – about 10 per cent – in nursing and education. The net earnings of early-career science and commerce graduates fell 5 per cent for men and 1 to 2 per cent for women. For science, more graduates doing further study partly explains this poor result.

Some disciplines did better than others over the decade because of rates of full-time work. The proportion of early-career graduates in full-time work grew for education and medicine, and more so for women than men, but fell for graduates in other disciplines, as Figure 10.9 shows. The proportion of early-career nursing graduates in full-time work fell over the decade, although the underlying drop in average hours worked was small. Strong wage growth in health partly offset the financial effects of fewer hours at work.<sup>285</sup>

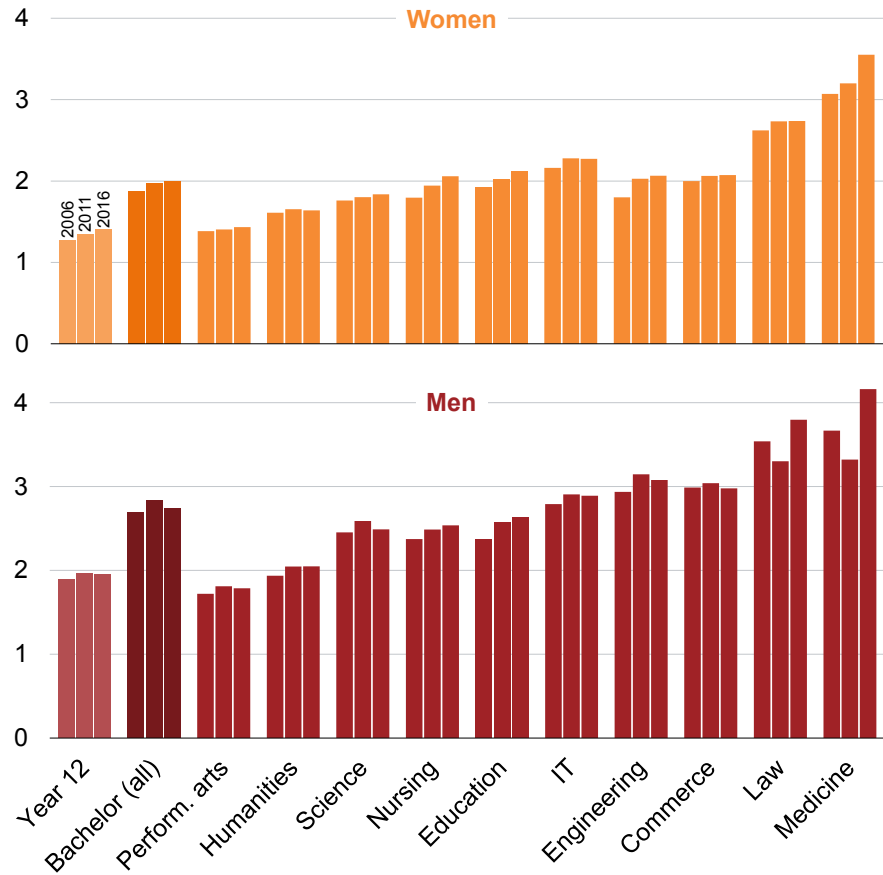
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285. Between 2011 and 2016, wages growth in health care and social assistance was about 4.3 per cent a year. Growth in professional, scientific and technical services was 3.7 per cent: ABS (2017g).

Education and nursing qualifications led to good-quality jobs, with a high proportion of graduates in professional and managerial employment over the decade, as Figure 10.10 shows. But job quality deteriorated for graduates in most other disciplines. Male graduates in commerce and science fared poorly, with the proportion in professional and managerial jobs falling by about 10 percentage points for men. In science, about 60 per cent of employed graduates had a professional or managerial job in 2016.

**Figure 10.7: Net expected lifetime income of the median-income graduate**

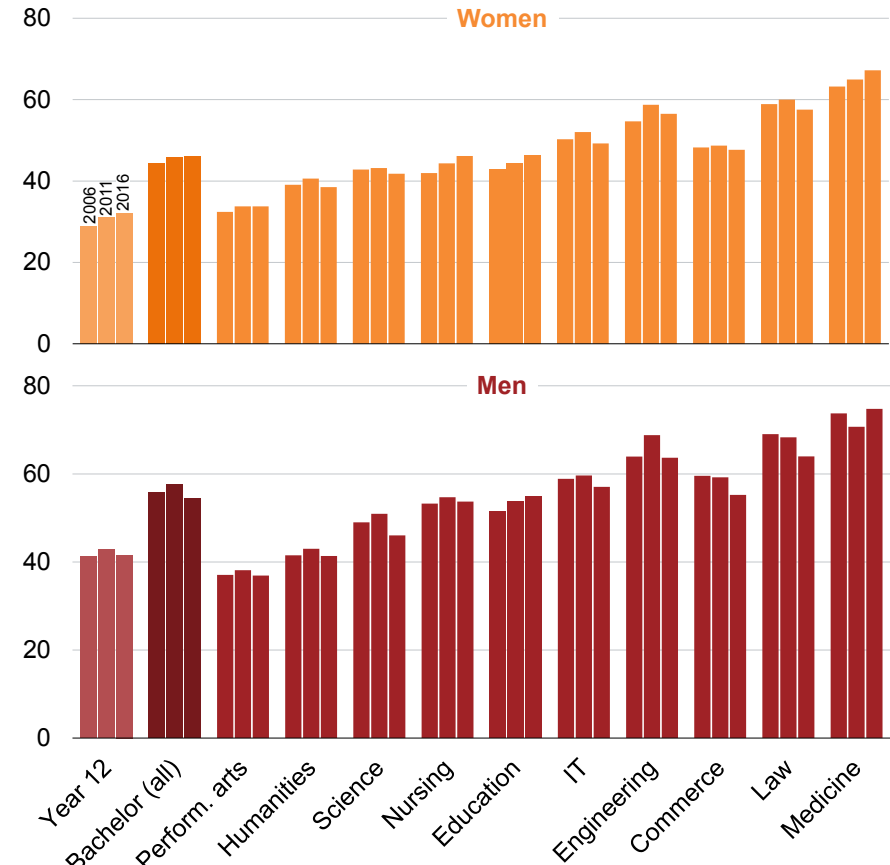
Lifetime income after tax, \$2016 million



Notes: The lower earnings in law and medicine for men in 2011 compared to 2016 should be interpreted with caution. When graduates' earnings are in the top income bracket recorded in the census, our analysis assumes that they earn at the bottom of the bracket range. Since the top income range did not change between 2006 and 2011, neither did the apparent earnings of graduates in this bracket. But because of inflation adjustment, the bottom of the top bracket range is lower in 2011 than 2006 in real terms. Since most male graduates in law and medical earn above the bottom of the top income bracket, especially during their peak earning years, the data issue is more likely to affect these disciplines. See also Figure 10.3. Sources: See Figure 10.3.

**Figure 10.8: Net expected income of the median-income early-career graduate**

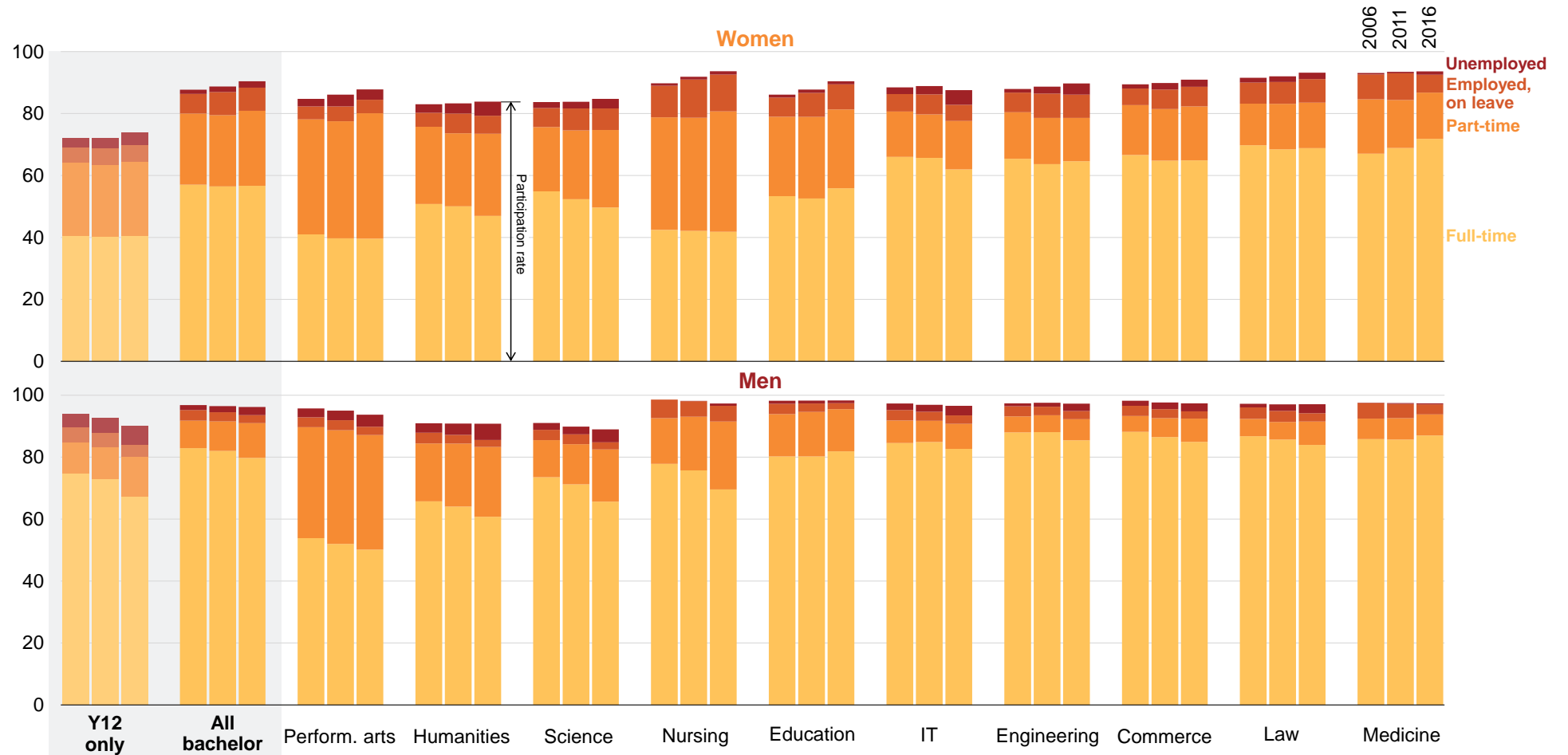
Average annual income after tax 25 to 34-year-olds, \$2016 thousand



Notes: See Figure 10.7.

Sources: See Figure 10.3.

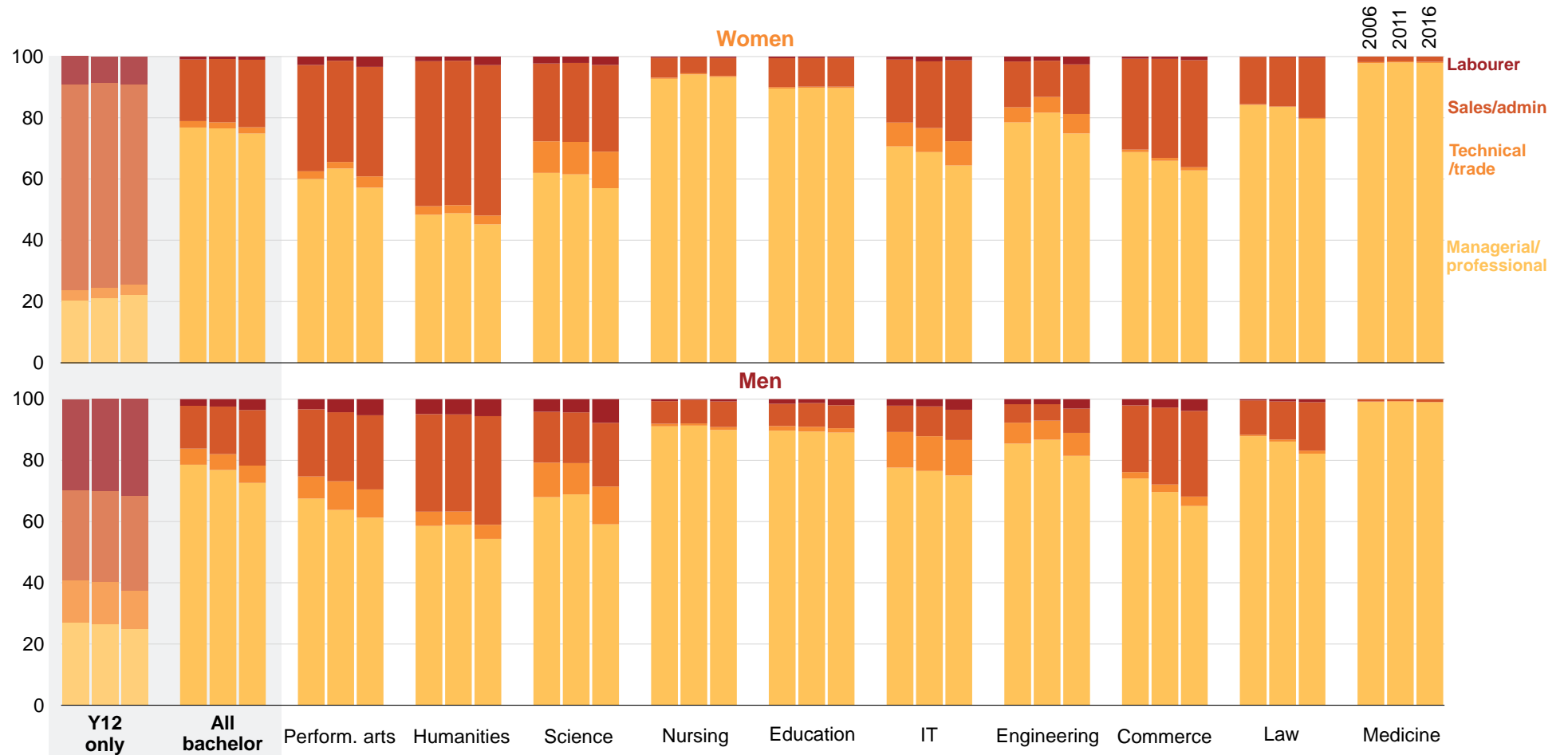
**Figure 10.9: Labour force participation for early-career graduates by discipline and school leavers between 2006 and 2016**  
 Per cent of school leavers or graduates aged 25 to 34



Notes: Because the number of people at different ages varies substantially especially across disciplines, workforce participation is calculated for each age and the average participation across the ages of 25 and 34 is shown. See also Figure 10.3.

Sources: See Figure 10.3.

**Figure 10.10: Occupational share of early-career graduates by discipline and school leavers between 2006 and 2016**  
 Per cent of working school leavers or graduates aged 25 to 34



Notes: Because the number of people at different ages varies substantially especially across disciplines, the occupational share is calculated by age and the average participation across the ages of 25 and 34 is shown. See also Figure 10.3.

Sources: See Figure 10.3.

### Early and mid-career women with children have higher rates of workforce participation

Increased workforce participation is a driving force behind women’s earnings growth. Early and mid-career women increased their labour force participation over the decade but men did not, as Figure 10.11 shows.

As Figure 10.12 on the following page shows, women with children drove this increase, with workforce participation up by nearly 10 percentage points among early-career graduates, and 5 percentage points among mid-career graduates. The workforce participation rate of early and mid-career female graduates without children was stable over the decade.

Between 2006 and 2011, the proportion of early-career female graduates employed but on leave increased.<sup>286</sup> The most likely reason is that fewer pregnant women exited the workforce, and more stayed employed and went on maternity leave.<sup>287</sup>

Women are more likely to stay in the workforce because paid maternity leave has become increasingly accessible, especially for women in better-paid jobs.<sup>288</sup> By 2011, more than 70 per cent of women who

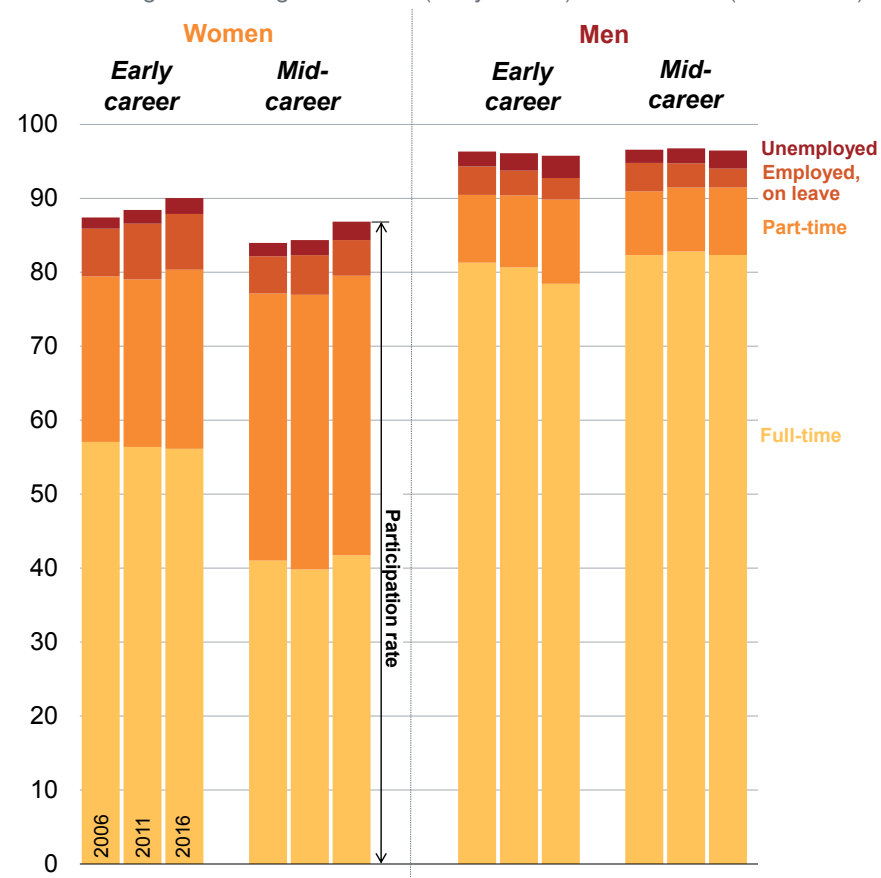
286. The category ‘employed, away’ includes people with zero hours and people who did not state their hours. According to the ABS, these include people who were on paid leave (including maternity leave), on holidays, on strike, or temporarily stood down.

287. Although the Census does not provide data on why someone is employed but on leave, about 73 per cent of early career female graduates who were away from work have children: ABS (2017a). The Pregnancy and Employment Transitions survey suggests that the proportion of pregnant women who did not permanently leave their job prior to giving birth increased from 55 per cent to 75 per cent between 2005 and 2017: ABS (various years[a]).

288. Between 2002 and 2009, the proportion of employees who were entitled to parental leave rose from 25 per cent to 40 per cent. Entitlement by income was not collected before 2009: ABS (various years[b]).

**Figure 10.11: Workforce participation of early and mid-career graduates, men and women**

Per cent of graduates aged 25 to 34 (early career) and 35 to 44 (mid-career)

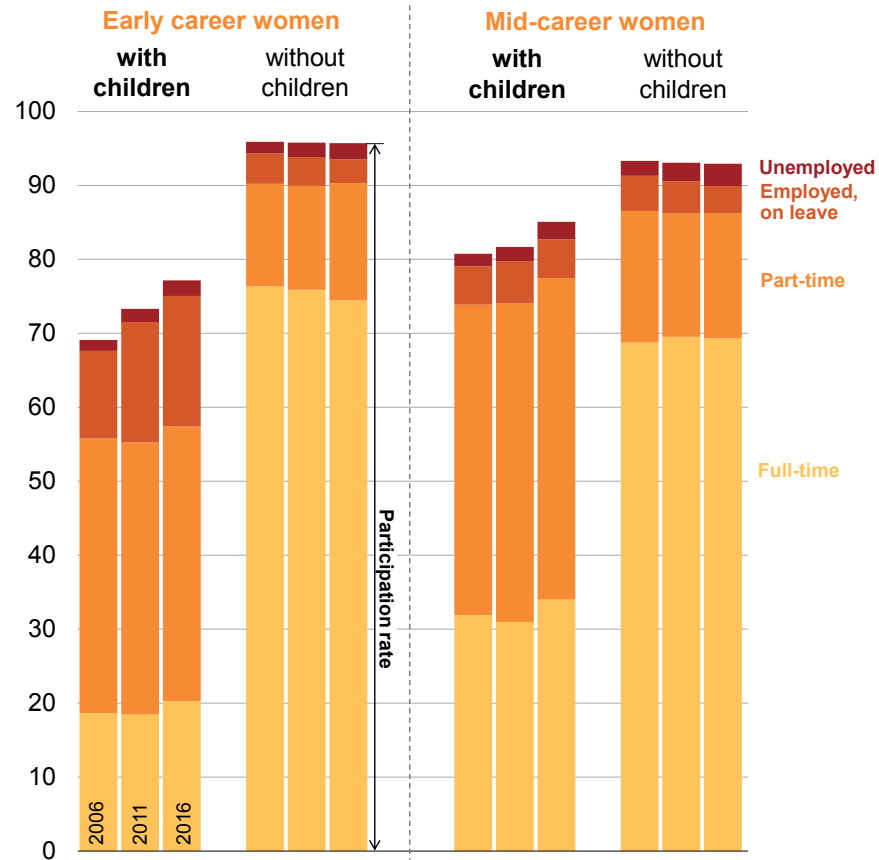


Notes: See Figure 10.9.

Sources: See Figure 10.3.

**Figure 10.12: Workforce participation of early and mid-career graduates, women with and without children**

Per cent of graduates aged 25 to 34 (early career) and 35 to 44 (mid-career)

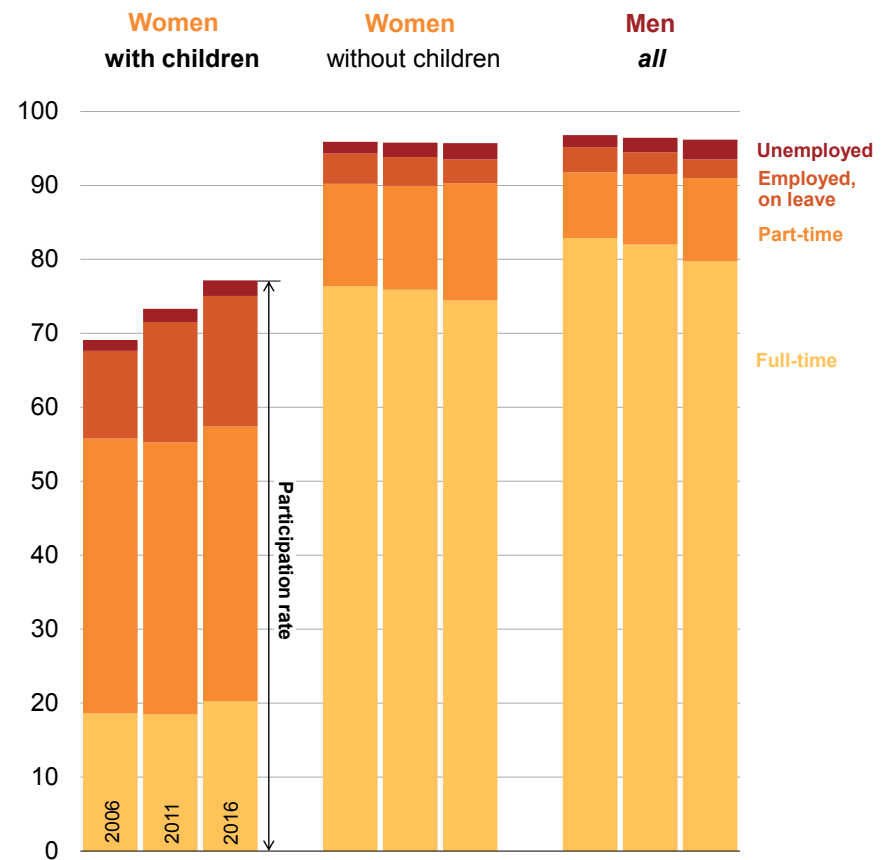


Notes: Children include those who may not be living with the graduate. See also Figure 10.9.

Sources: See Figure 10.3.

**Figure 10.13: Workforce participation of early-career graduates, men and women with and without children**

Per cent of graduates aged 25 to 34



Notes: See Figure 10.12.

Sources: See Figure 10.3.

earned more than \$52,000 a year had access to paid maternity leave from their employer. Since 2011, women have also had access to the Australian Government's Paid Parental Leave Scheme, which provides up to 18 weeks of pay at the minimum wage.<sup>289</sup>

From 2011 to 2016, the workforce participation of early-career female graduates with children continued to increase (Figure 10.13). Some of the improvement came from a continued rise in maternity leave, and some came from higher rates of full-time work, partly because of the rise in maternity leave between 2006 and 2011. Early-career mothers who take maternity leave are nearly twice as likely to work full-time five years later, and nearly 30 per cent more likely to work part-time five years later, than mothers who leave the workforce entirely.<sup>290</sup>

Improved child care policies have also supported mothers returning to work. In 2008, the government lifted child care subsidies to working parents from 30 per cent to 50 per cent of costs, as well as increasing the maximum amount they can claim. As a result, more children are in formal care and their mothers are working more hours.<sup>291</sup>

Unlike early-career female graduates with children, early-career female graduates *without* children became slightly less likely to work full-time and more likely to work part-time. Their workforce participation is similar to early-career male graduates, as Figure 10.13 shows. The

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289. For primary carers who earn less than \$150,000, Department of Human Services (2018b). Department of Social Services (2014, p. 11).

290. Their full-time workforce participation grew over the decade in all disciplines except humanities.

291. The share of children younger than 11 attending formal child care increased from less than 15 per cent to about 20 per cent, ABS (2017h). Using Australian data, Gong and Breunig (2015, p. 23) found that increasing child care subsidies induces mothers to work more hours. Based on international evidence, the IMF concluded that if the price of child care is reduced by 50 per cent, the labour supply of young mothers will rise between 6.5 per cent to 10 per cent, Elborgh-Woytek et al. (2013, p. 14). The OECD also found a similar result, Thévenon (2013).

growth in part-time work is consistent with business behaviour during a downturn. Instead of laying workers off, many businesses cut the hours worked, affecting people of all ages but especially younger people.<sup>292</sup> Graduates from all disciplines except education and medicine had lower rates of full-time work over the decade.

As well as finding less full-time work, both male graduates and female graduates without children became less likely to work in a professional or managerial job, and more likely to work in a sales, administrative or personal services job. Again, science and commerce graduates did badly on this measure.

### More late-career women work

The final cause of the stronger earnings growth for women is late-career workforce participation. Seventy per cent of late-career female graduates (aged 55 to 64) were in the workforce in 2016, up from 63 per cent in 2006. As Figure 10.14 on the next page shows, most of the increase occurred during the first half of the decade. Some of these women went into part-time work, but more went into full-time work.<sup>293</sup> Late-career male graduates also increased their participation, but not by as much as women.

An increased pension age contributed to workforce participation growth. It gradually grew from 60 to 65 years for women born between 1935 and 1947, affecting most late-career women in 2006 and many of the remainder in 2011. Reaching the eligibility age for superannuation or the pension is the number one reason for retiring.<sup>294</sup> The pension age for men and women is being progressively increased to 67 years.<sup>295</sup>

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292. Bishop et al. (2016); and ABS (2018f).

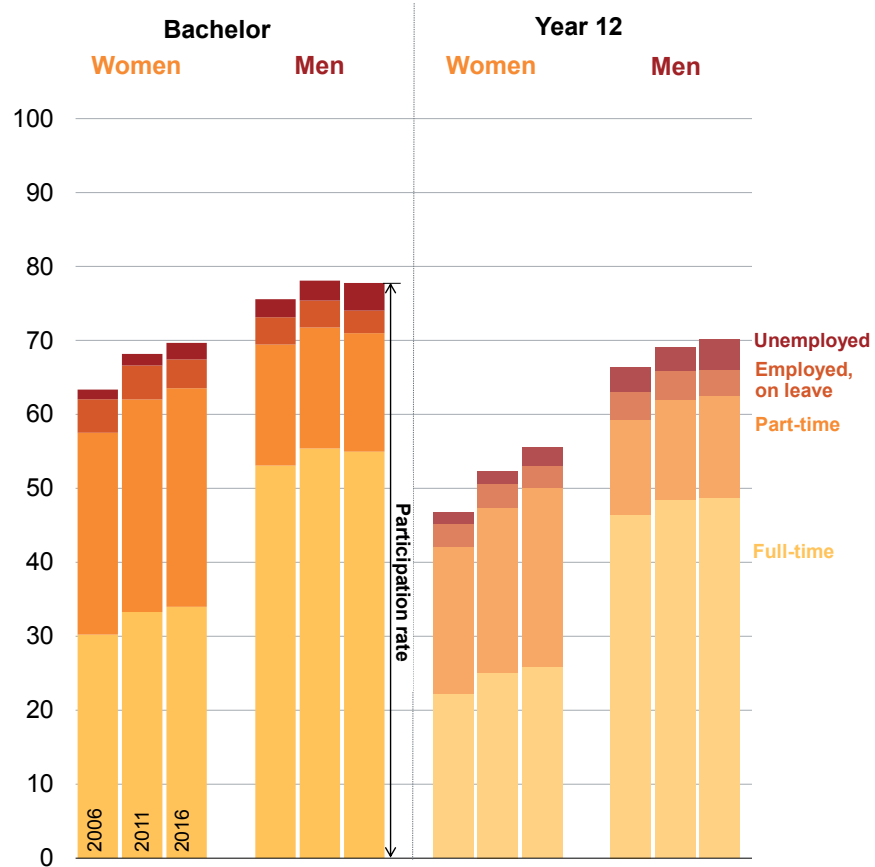
293. The participation increase was stronger for diploma holders and school leavers.

294. ABS (2017i, table 5.1).

295. For people who were born from 1952 to 1957, their pension age will increase from 65 to 67, Department of Social Services (2016).

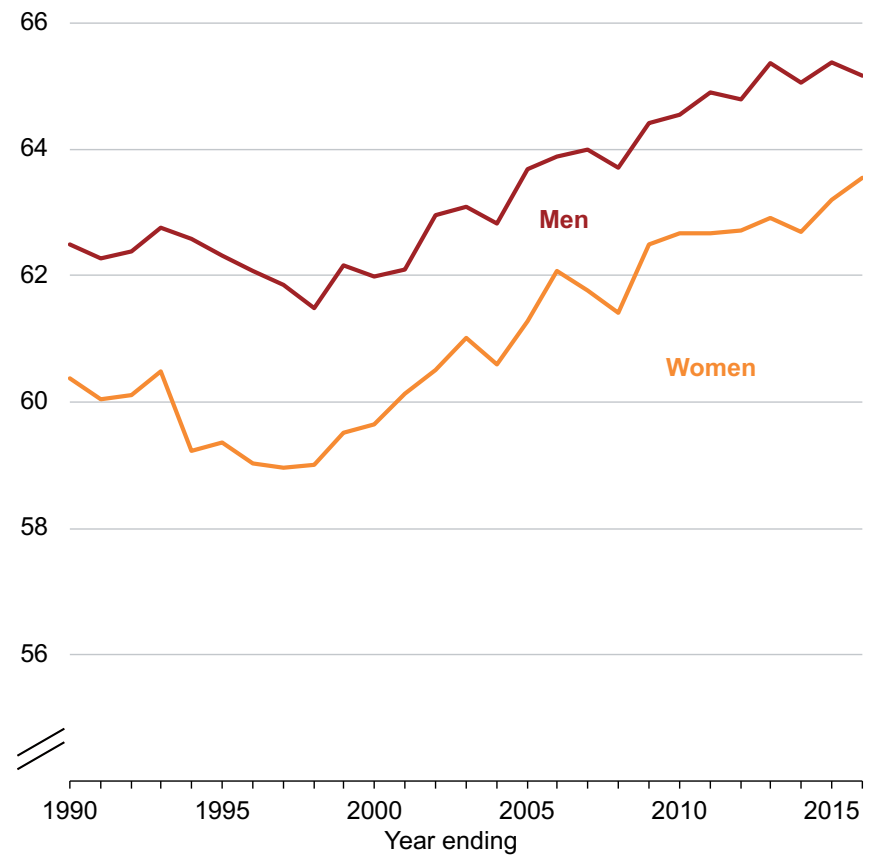


**Figure 10.14: Workforce participation of late-career graduates**  
Per cent of graduates aged 55 to 64



Notes: See Figure 10.9.  
Sources: See Figure 10.3.

**Figure 10.15: Retirement age by gender in Australia**  
Average effective retirement age (3-year moving average)



Source: OECD (2016).

The GFC and its impact on retirement savings may also have affected retirement decisions. Half of Australian superannuation funds are in shares, so how the stock market performs affects how much money many Australians have at retirement.<sup>296</sup> While the Australian economy fared much better than most through the 2008 downturn, our stock market suffered its sharpest fall on record.<sup>297</sup> This may have contributed to late-career men also delaying retirement.

Irrespective of the pension age change and economic conditions, Australians are living longer and staying at work until they are older. The shift began around 2000 and is a long-lasting trend, as Figure 10.15 on the preceding page shows. Recent and future graduates are therefore likely to spend more years in the workforce than earlier cohorts, pushing up lifetime earnings.

### 10.2.3 Graduate premiums

Most people with university degrees would have worked and earned an income whether they went to university or not. The difference between what they could have earned anyway and their income as a graduate is sometimes known as the ‘graduate premium’ (see Box 2).<sup>298</sup>

Graduate premiums do not necessarily change in the same direction or on the same scale as graduate earnings. Graduate premiums would fall despite growing graduate earnings if the income of people with only Year 12 education increased by a larger amount.

The graduate premium in Australia remains large. The median female graduate in 2016 is expected to earn nearly \$600,000 more over her

#### Box 2: The graduate premium and ability

Graduate premiums in this section are calculated against a counterfactual person of the same gender completing Year 12 but not continuing with further education. The same Year 12 counterfactual is used irrespective of the discipline studied. For example, the premium for nursing graduates is the difference between the median net earnings of nursing graduates and school leavers. However, this may not be the relevant comparison point for someone considering going to university. The relevant counterfactual may be vocational education.

Even without going to university, people with the academic ability to be admitted would probably earn more than otherwise similar people. Graduate premiums analyses sometimes adjust for this ‘ability bias’ by discounting the premium. But choosing an ability discount is hard. Students with a wide range of abilities attend university. The effect of prior ability is also likely to differ between disciplines. This section does not discount for ability, but readers can reduce the graduate premium according to their own judgment of ability bias in the results.<sup>a</sup>

a. The effect of ability bias is explored in Weidmann and Norton (2012).

296. Half in Australia and half in international markets, The Association of Superannuation Funds of Australia (2018).

297. Debelle (2009); and RBA (2018, p. 23).

298. Many previous studies have found a sizable graduate premium: Norton (2012), Wei (2010), Borland et al. (2000), Daly et al. (2012) and Sinning (2014).

career than the median female school leaver, as Figure 10.16 shows. The premium is higher for men, at nearly \$800,000. The \$200,000 gap between male and female graduate premiums is much smaller than the gender earnings gap (\$750,000 from Section 10.2.2). This is because women with only Year 12 education have much worse financial outcomes than men (Figure 10.3).

While most graduates gain a premium from attending university, some do not. In 2016, more than 40 per cent of humanities graduates are expected to earn no premium, or even earn less than the median school leaver. Among law graduates, the figure is 20 per cent. For graduates in most other disciplines, the chance of earning less than the median person with a Year 12 education is below 30 per cent.

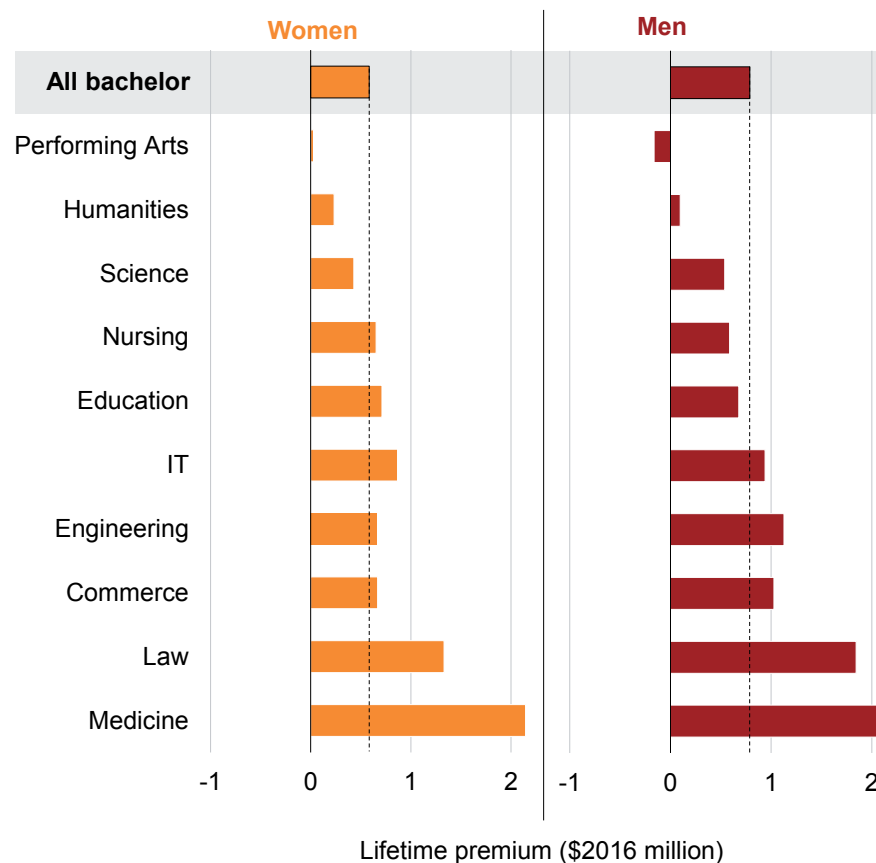
Graduate premiums vary across disciplines. Median-income medical and law graduates can expect the biggest premium, while median-income humanities and performing arts graduates can expect the smallest, if they get one at all.

Over the decade from 2006 to 2016, the premium for median-income graduates increased by about 4 per cent for women and 3 per cent for men in real terms.<sup>299</sup> But this finding needs the same caveat as career earnings (see beginning of Section 10.2.1), because results vary depending on career stage.

Only older graduates received a higher premium. Late-career women received the largest increase at 16 per cent, because of increased full-time work rates, especially in professional and managerial jobs (Figure 10.14). Late-career men also received an increase, although not by as much as for older women.

299. Although the lifetime earnings growth rate between 2006 and 2016 was slightly greater among female school leavers than female graduates, the amount of earnings increase was larger among female graduates than school leavers, resulting in an increase in earnings premium for female graduates.

**Figure 10.16: Expected lifetime graduate premium, 2016**  
Net lifetime earnings of the median graduate over the median school leaver



Notes: Ages 18–65. See Figure 10.3.

Sources: See Figure 10.3.

Premiums fell over the decade for early-career graduates, as Figure 10.17 shows. An increasing proportion of early-career graduates are taking jobs that require only a Year 12 education, such as sales and service positions. This narrows the income gap between them and the people who finished their education at Year 12, reducing the lifetime earnings advantage of holding a bachelor degree.

Although earnings premiums for early-career graduates are lower than a decade ago, a university degree still provides good insurance against not having a job (Table 10.1). People with diploma and certificate III/IV qualifications also have higher rates of employment than people who have only completed Year 12.

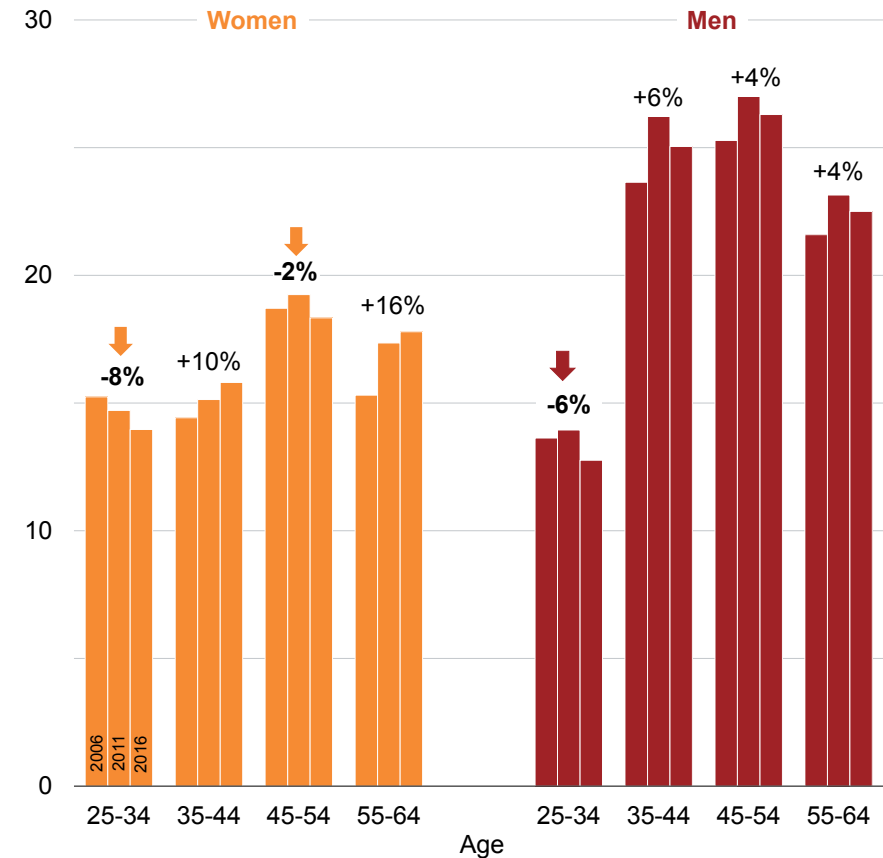
**Table 10.1: Non-employment levels by qualification, age 25–64, 2017**

	Graduate	Diploma	Cert III/IV	Year 12
Unemployment rate	2.5%	4.0%	3.8%	4.4%
Not in labour force	10.5%	14.3%	14.8%	21.7%

Source: ABS (2017e).

**Figure 10.17: Graduate earnings premium by career stage between 2006 and 2016**

Average annual income premium (after tax) of the median graduate compared to the median school leaver, \$2016 thousand



Notes: See Figure 10.3.

Sources: See Figure 10.3.

## Appendix A: Higher education providers offering HELP loans

**Table A.1: Universities offering HELP loans**

<b>Group of Eight</b>	<b>Regional Universities Network</b>	<b>Other universities</b>
Australian National University <sup>^</sup>	Central Queensland University*	Australian Catholic University*
Monash University <sup>^</sup>	Southern Cross University*	Charles Sturt University*
The University of Adelaide <sup>^</sup>	Federation University Australia*	Bond University
The University of New South Wales <sup>^</sup>	The University of New England <sup>^</sup>	Deakin University <sup>^</sup>
The University of Melbourne <sup>^</sup>	University of Southern Queensland*	Edith Cowan University*
The University of Sydney <sup>^</sup>	University of the Sunshine Coast	Macquarie University <sup>^</sup>
The University of Queensland <sup>^</sup>		Swinburne University of Technology*
The University of Western Australia	<b>Innovative Research Universities</b>	The University of Newcastle <sup>^</sup>
	Charles Darwin University*	Torrens University Australia
<b>Australian Technology Network of Universities</b>	Flinders University <sup>^</sup>	University of Canberra*
Curtin University of Technology	Griffith University <sup>^</sup>	University of Notre Dame, Australia
Queensland University of Technology*	James Cook University <sup>^</sup>	University of Tasmania <sup>^</sup>
RMIT University*	La Trobe University <sup>^</sup>	University of Wollongong
University of South Australia*	Murdoch University	Victoria University*
University of Technology Sydney*	Western Sydney University*	
<b>Specialist university</b>	<b>Overseas university</b>	
University of Divinity	Carnegie Mellon University	

Notes: Trading names used. \* Established or given university status as a result of the John Dawkins education reforms. <sup>^</sup> Existing university amalgamated with other providers during the John Dawkins education reforms. University name changes: Charles Darwin University was the Northern Territory University until 2004. Federation University Australia was the University of Ballarat until 2014. Western Sydney University was the University of Western Sydney until 2016. The University of the Sunshine Coast was established in 1998.

Source: TEQSA (2018c).

**Table A.2: NUHEPs offering HELP loans**

Academy of Information Technology	Engineering Institute of Technology	Nan Tien Institute
Academy of Music and Performing Arts	Excelsia College <sup>°</sup>	National Art School
Adelaide Central School of Art	Eynesbury Education Group	National Institute of Dramatic Art <sup>°</sup>
Adelaide College of Divinity	Gestalt Therapy Brisbane	North Metropolitan TAFE
Alphacrucis College <sup>°</sup>	Griffith College	Paramount College of Natural Health
Australasian College of Health and Wellness	Group Colleges Australia	Perth Bible College
Australian College of Applied Psychology <sup>°</sup>	Health Education and Training Institute	Photography Studies College
Australian College of Nursing	Holmes Institute	Raffles College of Design and Commerce
Australian College of Physical Education	Holmesglen Institute	Russo Business School
Australian College of Theology <sup>°</sup>	IKON Institute of Australia	S P Jain School of Global Management
Australian Film, Television and Radio School <sup>°</sup>	International College of Hotel Management	SAE Institute
Australian Guild of Music Education	International College of Management	South Australian Institute of Business and Technology
Australian Institute of Business	ISN Psychology	South Metropolitan TAFE
Australian Institute of Management	Jazz Music Institute	Stott's Colleges
Australian Institute of Music	JMC Academy	Study Group Australia
Australian Institute of Professional Counsellors	John Paul II Institute for Marriage and Family	Sydney College of Divinity <sup>°</sup>
Avondale College of Higher Education <sup>°</sup>	Kaplan Business School	Sydney Institute of Business and Technology
Batchelor Institute of Indigenous Tertiary Education <sup>°</sup>	Kaplan Higher Education	Sydney Institute of Traditional Chinese Medicine
BBI The Australian Institute of Theological Education	Kent Institute	Tabor Adelaide
Box Hill Institute	King's Own Institute	Tabor College NSW
Cairnmillar Institute	La Trobe College	TAFE NSW Higher Education
Campion College Australia	LCI Melbourne	TAFE Queensland
Canberra Institute of Technology	Le Cordon Bleu Australia	TAFE South Australia
Chisholm Institute	Leo Cussen Centre for Law	Think Education
Christian Heritage College	Macleay College	Top Education Institute <sup>°</sup>
Collarts	Marcus Oldham College	Turning Point Alcohol and Drug Centre
College of Law <sup>°</sup>	Melbourne Institute of Technology	UOW College Australia
Curtin College	Melbourne Polytechnic	UTS Insearch
Deakin College	MIECAT	Victorian Institute of Technology
Eastern College Australia	Monash College	Wentworth Institute
Edith Cowan College	Moore College <sup>°</sup>	Whitehouse Institute of Design
Endeavour College of Natural Health	Morling College	William Angliss Institute

Notes: Trading names used. <sup>°</sup> Self-accrediting providers.

Source: TEQSA (2018c).

## Appendix B: Higher education providers not offering HELP loans

**Table B.1: NUHEPs not offering HELP loans**

Academies Australasia Polytechnic	Governance Institute of Australia	Mayfield Education
ACER Professional Learning	Higher Education Leadership Institute	Montessori World Educational Institute
Asia Pacific International College	Institute for Emotionally Focused Therapy	National Institute of Organisation Dynamics Australia
Australasian College of Dermatologists	Institute of Chartered Accountants in Australia	Newcastle International College
Australian Institute of Higher Education	Institute of Health	Oxford Institute of Higher Education
Australian Institute of Police Management	Institute of Internal Auditors	Polytechnic Institute
Bureau of Meteorology Training Centre	Institute of International Studies	Sheridan College
Cambridge International College	International Institute of Business and Technology	Southern Cross Education Institute
Centre for Pavement Engineering Education	Kollel Beth HaTalmud Yehuda Fishman Institute	Tax Institute
Crown Institute of Higher Education	Leaders Institute	Western Sydney University International College
Elite Education Institute		

*Note: Trading names used.*

*Source: TEQSA (2018c).*



## Appendix C: Fields of Education

<b>Agriculture</b>	Agriculture is a 4-digit field, and is a subset of the 2-digit field 'Agriculture, Environmental and Related Studies'. Agriculture includes 'Agricultural Science', 'Animal Husbandry', 'Wool Science' and 'Agriculture, n.e.c.'.
<b>Architecture</b>	Architecture is a 6-digit field, and is a subset of the 2-digit field 'Architecture and Building'.
<b>Commerce</b>	Commerce is the 2-digit field 'Management and Commerce'. It includes 'Accounting', 'Business and Management', 'Sales and Marketing', 'Tourism', 'Office Studies', 'Banking Finance and Related Fields', and 'Other Management and Commerce'.
<b>Education</b>	Education is a 2-digit field. It includes 'Teacher Education' Curriculum and Education Studies' and 'Other Education'.
<b>Engineering</b>	Engineering is a 2-digit field. It includes, 'Manufacturing', 'Process and Resources', 'Automotive', 'Mechanical and Industrial', 'Civil', 'Geomatic', 'Electrical and Electronic', 'Aerospace', 'Maritime', and 'Other Engineering and Related Technologies'.
<b>Humanities</b>	'Humanities' is a category defined in this paper. It is a subset of the 2-digit field 'Society and Culture'. It includes 'Political Science and Policy Studies', 'Studies in Human Society', 'Language and Literature', 'Philosophy and Religious Studies'.
<b>Information technology</b>	Information Technology is a 2-digit field. It includes 'Computer Science', 'Information Systems' and 'Other Information Technology'.
<b>Law</b>	Law is a 4-digit field, and is a subset of the 2-digit field 'Society and Culture'. Law includes 'Business and Commercial Law', 'Constitutional Law', 'Criminal Law', 'Family Law', 'International Law', 'Taxation Law', 'Legal Practice' and 'Law, n.e.c.'.
<b>Mathematics</b>	Mathematics is the 4-digit field 'Mathematical Sciences', and is a subset of the 2-digit field 'Natural and Physical Sciences'. Mathematical Sciences includes 'Mathematics', 'Statistics' and 'Mathematical Sciences n.e.c.'.
<b>Medicine</b>	Medicine is the 4-digit field 'Medical Studies', and is a subset of the 2-digit field Health. Medical Studies includes 'General Medicine', 'Surgery', 'Psychiatry', 'Obstetrics and Gynaecology', 'Paediatrics', 'Anaesthesiology', 'Pathology', 'Radiology', 'Internal Medicine', 'General Practice', 'Medical Studies n.e.c.'.
<b>Nursing</b>	Nursing is a 4-digit field, and is a subset of the 2-digit field 'Health'. Nursing includes, 'General Nursing', 'Midwifery', 'Mental Health Nursing', 'Community Nursing', 'Critical Care Nursing', 'Aged Care Nursing', 'Palliative Care Nursing', 'Mothercraft Nursing and Family and Child Health Nursing', 'Nursing, n.e.c.'.
<b>Other health</b>	Other health is a subset of the two-digit field 'Health'. It contains all fields not otherwise contained in 'Medicine', 'Dentistry' and 'Nursing'. Other health includes 'Pharmacy', 'Optical Science', 'Veterinary Studies', 'Public Health', 'Radiography', 'Rehabilitation Therapies', 'Complementary Therapies', 'Other health'.
<b>Performing arts</b>	Performing arts is a 4-digit field, and is a subset of the 2-digit field 'Creative Arts'. Performing Arts includes 'Music', 'Drama and Theatre Studies', 'Dance' and 'Performing Arts n.e.c.'.
<b>Sciences (excl. maths)</b>	'Sciences (excl. maths) is a category defined in this paper. It is the 2-digit field 'Natural and Physical Sciences' with the 4-digit field 'Mathematical Sciences' removed'. The category includes 'Natural and Physical Science n.f.d.', 'Physics and Astronomy', 'Chemical Sciences', 'Earth Sciences', 'Biological Sciences' and 'Other Natural and Physical Sciences'.
<b>Society and culture</b>	'Society and culture' is a 2-digit field and the superset of 'Humanities' and 'Law', defined above. It includes 'Political Science and Policy Studies', 'Studies in Human Society', 'Human Welfare Studies and Services', 'Behavioural Science', 'Law', 'Justice and Law Enforcement', 'Librarianship, Information Management and Curatorial Studies', 'Language and Literature', 'Philosophy and Religious Studies', 'Economics and Econometrics', 'Sport and Recreation' and 'Other Society and Culture'.

Source: Australian Standard Classification of Education, ABS (2001).

## Appendix D: Glossary

ABS	Australian Bureau of Statistics	CGS	Commonwealth Grant Scheme
ACER	Australian Council for Educational Research	Commonwealth contribution	The Federal Government's tuition subsidy
ACPET	Australian Council for Private Education and Training	COPHE	Council of Private Higher Education
Applied research	Research undertaken primarily to acquire new knowledge with a specific application in view.	Coursework	Courses that do not have a major research component
AQF	Australian Qualifications Framework	CPI	Consumer Price Index
ANZSCO	Australian and New Zealand Standard Classification of Occupations	Doubtful debt	HELP debt not expected to be repaid
ARC	Australian Research Council	EFTSL	Equivalent full-time student load
ARWU	Academic Ranking of World Universities	ERA	Excellence in Research for Australia
ASCED	Australian Standard Classification of Education	Experimental development research	Research using existing knowledge gained from research or practical experience, which is directed to producing new materials, products, devices, policies, behaviours or outlooks.
ATAR	Australian Tertiary Admission Rank	FEE-HELP	HELP for full-fee students
ATN	Australian Technology Network	FTE	Full-time equivalent
ATO	Australian Taxation Office	Funding cluster	A group of disciplines with the same Commonwealth contribution
Attrition	A student leaving without completing a course. Usually in reference to a commencing student not returning the following year.	GCA	Graduate Careers Australia
Census date	The date when domestic students become liable for student contributions or fees	Graduate premium	Extra income of a graduate over another educational level, usually Year 12

Group of Eight	Coalition of Australia's 'sandstone' universities	RUN	Regional Universities Network
HECS	Higher Education Contribution Scheme	SA-HELP	HELP for the student amenities fee
HECS-HELP	HELP for Commonwealth-supported students	SES	Socio-economic status
HELP	Higher Education Loan Program	Strategic basic research	Research in specified areas in the expectation of practical discoveries
HEP	Higher Education Provider	Student contribution	The amount paid by a student in a Commonwealth-supported place
HERDC	Higher Education Research Data Collection	TAFE	Technical and further education
HILDA	Household, Income and Labour Dynamics in Australia Survey	TEQSA	Tertiary Education Quality and Standards Agency
IRU	Innovative Research Universities		
IT	Information technology		
Load	Subjects taken, expressed in full-time student units.		
NHMRC	National Health and Medical Research Council		
NUHEP	Non-university higher education provider		
OS-HELP	HELP to finance overseas study		
OUA	Open Universities Australia		
Pathway college	Institution specialising in diploma level courses aimed at facilitating entry to university courses		
Place	A student place is equivalent to the study load of a full-time student		
Pure basic research	Research to acquire new knowledge without looking for long term benefits other than advancing knowledge.		

## Bibliography

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