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Mapping Australian higher education

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Andrew Norton



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Overview

For people new to higher education and higher education policy, the field can seem bewildering. Basic facts are surprisingly difficult to find and interpret. Funding entitlements reflect the sector's history more than consistent policy principles. Free markets exist alongside tight government regulation.

Mapping Australian higher education puts in one place key facts and their context.

Australia has 39 full universities, and over 130 other higher education providers. Their revenues exceed \$24 billion per year, almost 2 per cent of Australia's GDP. For such a large sector of the Australian economy, it does not always attract the policy focus and public interest that might be expected.

Student numbers, both domestic and international, have more than doubled over the last 20 years. Higher proportions are international, studying off-campus, and female, now 58 per cent of the cohort. Yet enrolments shares between broad fields of study are often surprisingly stable.

Despite the rise in student numbers, the proportion of graduates getting high-skills jobs is down only slightly over time. Male graduates earn 50 per cent more over their careers than men who finished school at Year 12, after taking out the costs of education and tax. Female graduates have a 60 per cent net earnings premium. The rate of return on higher education investment increased between 2006 and 2011.

Higher education generally meets labour market demands, although shortages of health and engineering professionals have persisted over the last decade.

Higher education research is growing rapidly. Increasing numbers of research-only staff helped university research publications more than double in a decade. Australia now has ways of measuring research quality, but policymakers are still working on measuring the social and economic impact of university research.

Australia does not have a crisis in higher education. However, some policy concerns are evident.

Student satisfaction with teaching is improving, but engagement between academics and students remains below levels achieved in other countries. This may result in Australian students learning less than students elsewhere.

The relationship between teaching and research in universities is under strain. A decreasing proportion of academics with on-going positions teach and research, with universities relying heavily on casual staff for teaching.

Per student public funding of higher education is stable, but growth in student numbers is pushing up the costs to government, which exceeded \$12 billion in 2011-12. Student debt not expected to be repaid has increased significantly, and now stands at \$6.2 billion.

Grattan Institute higher education reports will continue to examine these policy issues, with the goal of providing practical solutions.

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Introduction

Over the last 40 years, higher education has moved from the periphery to the centre of Australian life. As recently as the mid-1970s, only three out of every hundred working-age Australians had a higher education qualification. By 2012, the proportion had increased to 25 per cent. If current policies are successful, by 2025 40 per cent of young Australian adults will hold a bachelor degree or above.

Many people study out of interest. But the main factor in this shift towards greater degree attainment – and the main reason governments give for their involvement in higher education policy – is a structural change to the labour market. More jobs require, or are more easily carried out, with the knowledge and skills higher education courses set out to teach. These professional and managerial occupations are now a third of all employment.

The ‘knowledge economy’ makes higher education vital to Australia’s prosperity. Yet higher education only receives occasional public attention. Every move up or down of the economy is widely reported, but how many people know how well Australia’s universities are doing? Newspapers routinely cover debates about school curriculum, teaching methods, and the differences between public and private institutions. The same issues are relevant to higher education, but receive a fraction of the media coverage.

The main reasons for higher education’s relative neglect lie deep in Australian political culture and electoral politics. However, the difficulty in finding higher education information or clearly identifying the issues does not help. The first edition of this report

aimed to be an accessible, one-stop source of information to help the public understand higher education trends, policy and performance. This second edition updates and revises the first.

2012 was a year of policy change. A new regulator, the Tertiary Education Quality and Standards Agency (TEQSA), took over registration of higher education providers and accreditation of courses. TEQSA enforces Australia’s strict rules on use of the title ‘university’. A new for-profit university, Torrens University Australia, has a few years to meet those standards.

2012 was also the first year of a new ‘demand-driven’ funding system for undergraduate places in public universities. Most previous restrictions on student places by university and discipline were lifted. Public universities are free to offer as many – or as few – places in each course as they choose. So far, the system seems to be working. More applicants are offered places in their preferred field of education. Both student demand and the supply of undergraduate places are responding to skills shortages in the economy. These shortages are mainly for graduates of health or engineering courses.

For universities, increased numbers of domestic students financed by the demand-driven system off-set a decline in international student enrolments. In 2011, the number of international students declined for the first time since the full-fee market was opened 25 years previously. Overall, more than 1.2 million people are enrolled in Australian higher education institutions.

Not everyone thinks that we should have more students. There are worries that standards will be lowered to accommodate academically weaker students. Australia does not have any direct measures of academic standards or whether marking is softer now than in the past. Declining pass rates, however, suggest that universities are willing to fail under-performing students.

Despite large increases in the numbers of Australian residents with university qualifications, the proportion of graduates obtaining managerial or professional jobs is similar over time. However, comparison of the 2006 and 2011 censuses shows that young graduates are finding it a little more difficult to get jobs matching their skills. These work transition problems are not showing in graduate income, with rates of return on higher education investment increasing between 2006 and 2011.

On the available student survey data, the learning environment in Australia's universities is probably better than it was 15 years ago. There is a long term trend towards greater student satisfaction with teaching. However, student engagement surveys show that Australian higher education staff and students remain substantially less engaged with each other than are their American counterparts.

The big international higher education story for 2012 was the rise of 'massive open online courses' (MOOCs). A MOOC is a free subject offered online, typically with video lectures and automated or fellow-student assessment. Australian universities are scrambling to get involved. But nobody has yet found a way to finance MOOCs over the long term.

Higher education is a big business, with 2011 revenues in Australia of at least \$24.5 billion. It is also a major expense for

government, with the major tuition, research and student income support programs costing about \$12.4 billion in 2011-12.

The demand-driven funding system is pushing up costs for government. The main tuition subsidy program cost \$5.5 billion in 2011-12, with this amount expected to grow by another \$1.5 billion by 2015-16. Other government programs also expand as enrolments increase, including Youth Allowance and the income-contingent loan scheme HELP, which began as HECS.

Students and former students have accumulated HELP debts of \$26.3 billion, up nearly \$10 billion in real terms since 2007. We estimate that the net interest bill on the HELP debt is nearly \$600 million a year. HELP debt not expected to be repaid is also increasing, reaching \$6.2 billion in 2012.

Australian universities spent \$7.4 billion on research in 2010, with a strong emphasis on science and health-related research. In a research evaluation exercise, more than 40 per cent of Australian university research was rated as above 'world standard'. However, standards are uneven. In some fields of research, more than half of Australia's universities were rated as below world standard.

Universities are moving to concentrate on their research strengths. The proportion of research rated below world standard has decreased since the last ratings two years ago. But legal requirements and union agreements prevent universities from abandoning research in areas where they are teaching.

The teaching-research relationship is problematic in other ways. Research funding does not follow student numbers, so universities cannot sustain a workforce employed to both teach

and research. The consequence is a large workforce of casual or temporary teaching-only academics. The university staff union has historically opposed permanent teaching-only academic jobs, but universities and unions are starting to agree on them to reduce the casual workforce.

Australia's higher education system is not in crisis. Most people seek higher education qualifications for work reasons, and most graduates continue to get good, well-paid jobs. While student engagement could be better, student satisfaction is trending in the right direction. Australian universities are not ranked in the top 50 in the world for research, but they have been improving their standing over time. The Australian public has a high level of confidence in universities. The challenge is to continue to improve while containing costs to both taxpayers and students.

In this report, chapter 1 explains how higher education is defined in Australia, the different types of higher education providers, 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.

Chapter 3 looks at researchers in Australian universities, what subjects they research, and how much they publish.

Chapter 4 provides information on how higher education is funded, including overall levels of funding, the income-contingent HELP student loan scheme and the organisation of research funding.

Chapter 5 outlines how per student funding levels are determined,

and how student places are distributed between higher education providers.

Chapter 6 describes the expanding scope of the Commonwealth Government in higher education, the key government departments and the higher education interest groups.

Chapter 7 covers academic standards, student engagement and satisfaction, and graduate employment and earnings.

Chapter 8 examines shortages of graduates, the quality of university research, the broader public benefits of higher education, and public satisfaction with Australian universities.

In this edition, the follow sections are entirely new, or have content that is significantly changed from the 2012 edition:

Section 1.4 on the non-academic workforce.

Sections 5.2 and 8.1, which offer a preliminary assessment of how the demand-driven undergraduate funding system is going.

Section 6.3 on higher education interest groups.

Section 7.3.1 on graduate employment.

Section 7.3.2 on graduate income.

Section 8.3 on the additional tax paid by graduates and other public benefits.

1. Higher education providers in Australia

The question ‘what is higher education?’ is surprisingly complex. In this opening chapter, we explore the issue by examining the activities of universities, non-university higher education providers and other entities in the higher education industry.

1.1 What is higher education?

For many people, ‘higher education’ and ‘universities’ are synonyms. But universities are a particular kind of institution that delivers higher education. While universities educate most higher education students, they are a minority of higher education providers in Australia – 44 of the 173 operating in late 2012. This includes 39 full universities and 5 higher education providers with university in their title.¹ The other providers are a range of colleges, institutes, and schools that are authorised to offer higher education qualifications.

Before being authorised to offer higher education qualifications, higher education institutions must meet a range of criteria. They 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, which in Australia must comply with the Australian Qualifications Framework (AQF).² As of early 2012, these

requirements are enforced by a national regulator, the Tertiary Education Quality and Standards Agency (TEQSA – discussed in more detail in section 6.2.3).

The power to issue particular 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 the higher education sector, as well as within. 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.

Qualifications are differentiated according to the knowledge and skills required for their successful completion. Table 1 shows the AQF qualifications, ranked from 1 to 10. Generally certificates I to IV (levels 1 to 4) are classified as vocational, while associate degrees through doctoral degrees (levels 6 to 10) are classified as higher education. Level 5 diplomas and advanced diplomas can be vocational or higher education, though in practice most are taught in the vocational education sector.

¹ This includes Torrens University Australia, which will commence courses in 2014; two ‘overseas universities’ Carnegie Mellon University and University College London; MCD University of Divinity and Heriot-Watt University. Unless otherwise stated, analysis in this report covers only the 39 full universities.

² DIISRTE (2012f)

Table 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; Vocational Graduate Certificate; Graduate Diploma; Vocational Graduate Diploma
9	Masters Degree
10	Doctoral Degree

Source: AQF (2013)

Key differences between the qualifications include the level of theoretical knowledge required, and the student's capacity to analyse information, make independent judgments and devise solutions to problems. Certificate I or 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.

As 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 who had completed qualifications in the past year about their main reason for undertaking learning, three-quarters of those completing higher education qualifications gave a job-related reason. For people completing certificate III and IV qualifications, 85 per cent gave a job-related reason.³

The practical and policy trend is towards greater blurring of vocational and higher education. The public-sector vocational education providers, the TAFEs, are adding degrees to their course programs; ten had done so by late 2012. Especially in Victoria, a number of universities are 'dual sector', with substantial TAFE operations. Other universities offer a smaller range of vocational education courses. In the private sector, many institutions offer both higher education and vocational education

³ ABS (2010), table 5

courses. All up, around 89 institutions offer both higher and vocational education courses.⁴ Many education providers sit on the line between vocational and higher education. The AQF encourages 'pathways' between the qualifications, including full credit towards bachelor degrees for time spent acquiring diplomas, advanced diplomas, and associate degrees. Reflecting these convergences, while 'higher' education and 'vocational' education are still widely used, the term 'tertiary education' covering them both is making a comeback. The naming of TEQSA – the Tertiary Education Quality and Standards Agency – is a sign that vocational and higher education are moving closer together.

1.2 Non-university higher education providers

Public awareness of non-university higher education providers (NUHEPs) is low, but they are a significant part of Australian higher education. In late 2012, 129 NUHEPs were registered with TEQSA (they are listed in Appendix A and Appendix B). Some are public institutions: for example, the Australian Film, Television and Radio School, the Australian Defence College, and the various TAFEs now offering degrees. Some are hard to classify on a public-private spectrum, as they are for-profit colleges owned by public universities. But most (116) are clearly in the private sector. A 1999 survey identified 83 private NUHEPs, indicating growth of 40 per cent to 2012.⁵

⁴ Wheelahan, *et al.* (2012). Due to different classification methods and different count dates, our total differs slightly from Wheelahan's total.

⁵ Watson (2000)

We cannot say for sure how many students are taught in NUHEPs. NUHEPs do not need to publicly report enrolment data unless they receive Commonwealth funds, whether grants or student loans, so we have no information from many of them. Where public universities outsource teaching (section 1.5) the students are counted in the university rather than the teaching institution. However, combining publicly-reported numbers with material provided directly by a NUHEP, these providers enrolled the equivalent of at least 47,500 full-time students in 2011. That is 5.4 per cent of the total number of reported higher education students in that year (section 2.1 for more detail on enrolments).⁶ It is a big increase on the slightly less than 15,000 equivalent full-time students in 1999.

One reason for growth is that higher education can be profitable. At least two Australian stock market listed companies, Navitas Limited and SEEK Limited, are in the higher education business. According to its 2011-12 annual report, Navitas had higher education revenues of \$367 million, with profits of \$105 million (from operations in six countries, including Australia).⁷ SEEK does not distinguish between different types of education in its public reporting, but its 2011-12 annual report recorded education division revenues of \$236 million and profits of \$33 million.⁸ Another major non-university higher education provider in Australia, Kaplan, is listed on the New York Stock Exchange through its parent Washington Post Company.

⁶ Many small NUHEPs and at least one large NUHEP, the Kaplan group, are not included in this number. Kaplan has 59,000 students in Australia, but we do not know how many of them are higher education students.

⁷ Navitas (2012), p 28

⁸ SEEK (2012), p 8. All profit figures before interest, taxation, depreciation and amortisation (EBITDA).

The non-university higher education sector is quite diverse, so most generalisations have exceptions. However, NUHEPs are specialised compared to universities (discussed in section 1.3). For most, teaching is their only major education function. Staff and facilities are often used for revenue-generating teaching for longer periods of the year than universities. Students can also finish their courses more quickly, studying for three trimesters a year rather than the two semesters offered by most universities.

Within their teaching function, NUHEPs often specialise in particular course levels. Very few offer the full range of AQF qualifications through to PhD. Institutions known as '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 particular university, and the diploma curriculum will match that taught in the target university first year. For example, students who successfully complete a Diploma of Commerce at the Melbourne Institute of Business and Technology can enter the second year of a Deakin University Bachelor of Commerce. By contrast, the College of Law offers entirely postgraduate courses as it prepares law graduates for practice or gives lawyers additional specialist skills.

The NUHEPs also tend to be specialised in what they teach. Many include a specific field of study, industry or occupation in their title, for example: Chifley Business School, Chartered Secretaries Australia, International College of Hotel Management, and the Southern School of Natural Therapies. Subject specialisation can build brand reputations in particular niche areas.

An analysis of course offerings shows that business-related courses are most common in the non-university higher education sector, including some delivered by professional associations such as the Institute of Chartered Accountants. There are also a significant number (22) 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. Seventeen providers have a health subject in their titles.

In most cases, accreditation for NUHEP courses must be sought from TEQSA. The accreditation process includes examining course content, assessment methods, and staff qualifications. The course content needs to be comparable to courses at the same level in similar fields at other Australian higher education providers. If NUHEPs have appropriate quality assurance systems and a track record of re-accreditation there is provision for them to become 'self-accrediting' – a legal right to approve their own courses. However, most NUHEPs are not self-accrediting.⁹

On top of these licence-to-operate requirements, NUHEPs often seek other third-party approval or endorsement of their courses. For 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 Psychotherapy and Counselling Federation of Australia, a professional body.

⁹ The self-accrediting NUHEPs are noted in Appendix A.

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. From 2012, Commonwealth Provider Category Standards enforced by TEQSA regulate which institutions can operate as universities.¹⁰ There are 39 full Australian universities in operation.¹¹ Two overseas universities also operate in Australia, offering their home country qualifications.¹² To do so, they must be approved by a higher education accrediting authority acceptable to TEQSA.

1.3.1 Research

The most important aspect of a university as a higher education institution is the co-production of research and teaching. ‘Research’ means 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.¹³ A ‘university college’ can be active in research in one field of study, and teaching in two more, although no Australian university colleges have been approved to date. Higher education institutions with research activity in only one or two fields can apply to be a specialist university. The Melbourne College of Divinity is currently the only institution to be approved under this provision. From 2012, it became the ‘MCD University of Divinity’.

¹⁰ DIISRTE (2012f)

¹¹ A list of universities is in Appendix A.

¹² Carnegie Mellon University and University College London. Heriot-Watt University is registered until 31 January 2013 as a NUHEP.

¹³ A detailed categorisation of disciplines can be found in ABS (2001).

While the idea that universities must be research active is widely accepted in Australia today, it is a recent idea. The original Australian universities established in the mid-19th century were to be places of scholarship – expertise in existing knowledge rather than original research. Though universities were conducting some research by the later part of the 19th century, the first Australian PhD was not awarded until the 1940s. 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).¹⁴ The description was partly intended to distinguish them from the ‘real’ pre-1988 universities. Yet less than 10 years later, research became a defining legal feature of a university.

One criticism of the research requirement is that its effect is protectionist. The ‘university’ title is presumed to have market value; other things being equal a university degree is preferred to one from an institute, college or school. Yet it is hard to build the necessary research activity, since university research typically is not self-financing. Profits generated from teaching could be diverted to research, but high profits are most likely to occur after a higher education institution has acquired research-driven prestige, and can charge premium fees for its teaching.¹⁵ Public research funding is typically awarded according to past research

¹⁴ The ‘Dawkins universities’ are noted in the list of universities in Appendix A.

¹⁵ The close relationship between fees charged and research performance is shown in Beaton-Wells and Thompson (2011).

performance, which is no help to institutions trying to build a research profile. That leaves philanthropy, which has been a limited source of higher education funds in Australia. Not surprisingly, no new full Australian universities were established in the decade after the three fields of study rule came into effect in 2000. In the previous 15 years, three new Australian universities had been established in addition to the 17 'Dawkins' universities (though one, Melbourne University Private, subsequently closed down).

In October 2011, the first new university to be established under the three fields of study rule was announced. 'Torrens University Australia' is owned by the American for-profit university conglomerate Laureate Universities International. Initially approved by the South Australian Government, Torrens used a provision for 'green field' universities that have a 'high probability' of meeting university criteria within five years. Current rules for university registration do not allow trial periods, so the Torrens registration is based on transitional provisions from the old system. It plans to take students from 2014.

We do not know to what extent research universities provide a distinctive form of higher education for undergraduate students. In Australia, most universities aim to integrate teaching and research, but reports of the Australian Universities Quality Agency (a pre-TEQSA audit body) suggest that the goal is often not well translated into practice.¹⁶ In many fields of study the curriculum is constrained by professional admissions requirements and/or core disciplinary content that differs little between higher education providers. These constraints may limit opportunities for

incorporating research findings or research skills into undergraduate courses.

Teaching and research also compete for limited academic time, attention and resources. Compared to their American counterparts, Australian academics have a low preference for teaching compared to research.¹⁷ The limited published Australian studies find a negative relationship between overall research performance and student satisfaction.¹⁸ However, both research output and student satisfaction with teaching have improved in the last 15 years (sections 3.3 and 7.2), suggesting that there is no inherent trade-off between the two. In the United States the empirical research has mixed findings, but on average finds a small positive relationship between measures of research productivity and student evaluations.¹⁹ Grattan will publish further research on this subject during 2013.

The teaching-research nexus is, however, likely to benefit research. Undergraduate teaching helps academics identify and foster able students with the potential to enter research degrees. Student questions and feedback may help researchers clarify and improve their ideas. Profits from teaching help support research activity (section 4.2.4).

1.3.2 Comprehensiveness

While many NUHEPs are specialised in what they teach (section 1.2), full Australian universities must offer courses in at least three

¹⁶ Brew (2010)

¹⁷ Coates, *et al.* (2009) esp. p 21-22

¹⁸ Ramsden and Moses (1992); Barrett and Milbourne (2012)

¹⁹ Stack (2003)

fields of study. In practice, most offer more. They are often referred to as being ‘comprehensive’ in the range of courses that they offer. A quarter of universities have students in all ten major broad fields of study, and a majority have students in at least nine major fields of study.

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 or commerce/science, so that students graduate with two degrees. Around 11 per cent of completing students have combined or double degrees.²⁰ 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 associate degree and vocational qualifications.

1.3.3 Self-accreditation

Unlike other higher education institutions, Australian universities automatically acquire the right to accredit their own courses. University academic boards approve their university’s courses, within a framework established by government regulation. Self-accreditation is an aspect of academic freedom (section 1.3.4). In developing courses, academics in self-accrediting universities are

free to include material without seeking a government agency’s approval. They are instead regulated by their fellow academics.

The self-accreditation power was, however, diluted in the TEQSA reforms that took effect in early 2012. Prior to TEQSA, universities had their self-accrediting powers in perpetuity. Under TEQSA, universities must be periodically re-registered, with the potential for their self-accreditation power to be removed or qualified. The scope of self-accreditation may also be limited by as yet unspecified ‘teaching and learning standards’. The current higher education minister denies that standards will be used to interfere with traditional academic freedoms.²¹ However, the TEQSA legislation gives the minister the power to make the teaching and learning standards, taking into account a draft produced by an expert panel that the minister appoints (section 6.2.2).

Though universities self-accredit, they also voluntarily seek external accreditation. For example, 11 universities have had their business schools accredited by the international Association to Advance Collegiate Schools of Business (AACSB).

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.”²² Generally, academics see themselves as having considerable autonomy in the three main areas of

²⁰ GCA (2012a), p 15

²¹ Evans (2011)

²² Finkin and Post (2009), p 39

university activity: research, teaching and community engagement (section 1.3.6 for more on engagement). Surveys of academics show that freedom to pursue their own research interests is a major part of what attracts them to universities.²³ For research and teaching, academics self-regulate their individual freedoms: academic research is subject to peer review (review by other academic experts) and course content is subject to the approval of academic boards. This formal academic self-regulation is absent for community engagement. University administrations sometimes try to perform this role, and dismiss or discipline academics who make controversial or embarrassing public statements.²⁴ Such actions almost always attract strong criticism, as academics do not see this as a legitimate role for managers (see further in section 1.3.5 below).

Technically, a “commitment to and support for free intellectual inquiry” is a legally-required feature of all higher education providers.²⁵ In practice, a strong culture of academic freedom is more a feature of universities than higher education providers generally. When the Commonwealth Government legislated to require higher education providers to have formal policies on “free intellectual inquiry in relation to learning, teaching and research” it restricted that requirement to research institutions. Free intellectual inquiry is necessary for advancing knowledge, but not to the delivery of higher education qualifications. Some higher

education providers have narrower purposes, focusing on teaching knowledge and skills developed elsewhere.

1.3.5 Self-governing communities

One reason universities are sensitive about their self-accreditation status is that they see themselves as self-governing communities. Universities are subject to many regulations, but their legal structure reflects this self-governance. Though most universities were established by government, none are government instrumentalities. Three universities have no government appointments on their governing bodies, commonly called councils or senates.²⁶ For the other universities, governments appoint a minority of senate or council members. Education ministers have no direct operational control. Partly for historical constitutional reasons, much government regulation of universities is via conditions on grants (section 6.1). In practice, universities invariably accept government money and its conditions, but in principle both could be refused. This freedom is not available to government schools and TAFEs, which typically are under direct government control.

Within universities, academics see themselves as citizens of the university community and not just as employees. They expect inclusion in collective decisions, a decision-making process known as ‘collegiality’. Traditionally academics have elected members to university senates and councils (Victoria recently abolished elected positions on university councils). Academic

²³ Bexley, *et al.* (2011), p 66

²⁴ For examples and some background, see Jackson (2005). From 2012, allowing academics to make public comment on issues within their area of expertise is a condition of being registered as a higher education provider: DIISRTE (2012f).

²⁵ DIISRTE (2012f)

²⁶ They are Australian Catholic University, University of Notre Dame, and Bond University.

critiques of university administrators often complain about ‘managerialism’, seen as an ideological rival to collegiality.

Student groups also seek representation in university decision making, often through student associations officially recognised by the university. Traditionally this has been granted; regulations now require it.²⁷ 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.²⁸

Despite complaints about the power of university management, university organisational structures are highly decentralised compared to for-profit corporations, with large amounts of consultation and decision-by-committee. Combined with change-resistant attitudes by academics and staff unions, these decision-making processes can make reforming universities difficult.

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 latest 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.²⁹

Community engagement is so diverse that it is hard to measure. One input indicator comes from academic time use surveys. The latest, from 2007, found that academics spent on average 4.4 hours a week on community service, out of an average 50.6 hours of work.³⁰ Another 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 so rewarded.³¹ So community service is an important part of university culture and practice, but unlike teaching and research it does not dominate.

While community engagement is a significant university activity, some forms of it are not always appreciated by others. In *The Poor Relation*, his book on the history of the social sciences in Australia, Stuart Macintyre observes that through the post-war decades social scientists repeatedly claimed that they could improve policy, while governments repeatedly found the work of academics to be ill-informed and impractical.³² These themes were echoed by Peter Shergold, a former secretary of the Department of Prime Minister and Cabinet. He commented that academics working on subjects of public policy used to “shuffle uncomfortably when I asked them exactly what policy changes they would introduce to address the problems they have so carefully analysed.” There was a large gap, Shergold concluded,

²⁷ DIISRTE (2011b); DIISRTE (2012f)

²⁸ Norton (2005)

²⁹ DIISRTE (2012f)

³⁰ Coates, *et al.* (2009)

³¹ Bexley, *et al.* (2011)

³² Macintyre (2010), p 24

between the culture and incentives of academia and the input policymakers required.³³

1.3.7 Multiple missions

Though 'university' has a formal legal definition, no single feature makes universities distinct as higher education providers. There are NUHEPs that conduct research, self-accredit, give their academic staff freedom, operate as a community, and engage with the broader community. 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.

The multi-faceted nature of universities has advantages. The different characteristics of contemporary universities – research, teaching and community engagement – all inform each other. Yet there may also be disadvantages to this model. The multiple missions of universities inevitably compete for the same limited resources of time and money. Where in most industries gains in quality and productivity come through specialisation, in universities, potential gains from specialisation are limited by the model of a generalist practitioner. Most academics are expected to be good at research, teaching, and community engagement; many are also expected to be good administrators. The skills needed to do each of the four tasks of the generalist academic are not the same.

³³ Shergold (2011)

1.4 Non-academic university staff

Most people employed by universities are in non-academic roles. Counting casual staff, people with non-academic functions made up 52 per cent of the university workforce in 2011.³⁴ There has been little change over time, with similar proportions of university staff in non-academic roles going back 30 years.³⁵ However, the roles of non-academic staff have changed over this period. Student recruitment, information technology, and regulatory compliance are all much larger functions than in the early 1980s. By contrast, many routine administrative jobs have been replaced by computers.

The large non-academic university workforce has often attracted comment and criticism. A 2012 Ernst & Young report on Australian universities noted that most professional service industries have two to three times as many 'front-line' staff as support staff.³⁶ Academics often complain about excessive numbers of administrators.³⁷ It is very difficult to analyse this issue. The published staff data does not always describe staff activities on a day-to-day basis, and it does not count people working for university contractors.

Within these constraints, figure 1 outlines the spread of university staff. In 2011, ten per cent of staff were employed in what figure 1 calls 'learning support services', which includes people working in

³⁴ DIISRTE (2012I), appendix 1.6

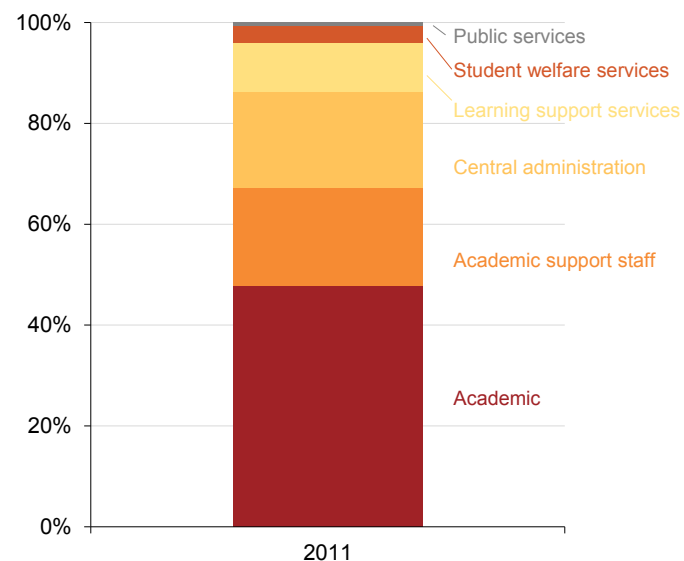
³⁵ DEET (1993); DIISRTE (2012I). This count is based on current duties of on-going staff. It has consistently been around 57 per cent of all university staff.

³⁶ Ernst & Young (2012)

³⁷ There were two books published in 2012 by academics including similar complaints in their criticisms of Australian universities: Hil (2012); Meyers (2012)

libraries, computing centres and other organisational units that help with teaching and research activities across the institution. Another three per cent are employed by student welfare service departments within universities, including health and employment services. We estimate that around 20 per cent of university staff are employed in academic departments but are not classified as teaching or research staff. These staff perform administrative and support functions in academic departments, such as student advice, secretarial work and IT support. University central administrations employ another 19 per cent of all staff. This category includes maintenance and grounds staff, as well as general administrative staff.

Figure 1: Proportion of university staff by organisational unit (work function for academics)



Note: 'Academic support staff' is derived from deducting 'academic staff' (in table A1.6) from staff in 'academic organisational units' (in table A1.9) of DIISRTE (2012). This will over-count staff engaged in academic activity, as it includes some staff with academic titles, but principally engaged in administration. Some organisational units have been relabelled to improve clarity.

Source: DIISRTE (2012)

1.5 Higher education service providers

Although only higher education providers have a licence to issue 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 2.5). Commercial organisations are also involved in student recruitment.

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 completed). Similarly, SEEK Learning is an education broker advising prospective students on their course options. Owned by the same company as the SEEK job advertisement site, SEEK Learning services the overlapping markets of people looking for better jobs and an upgrade of their qualifications. In the international student market, IDP Education (half owned by SEEK) helps match international students with universities in Australia and elsewhere.

Organisations such as Blackboard and Moodle help universities co-ordinate teaching-related activities through ‘learning management systems’. These store course content and are used to submit work, run student forums, record assessment results,

and to do other administrative tasks.

The largest educational services company is Pearson Education, which operates in more than 70 countries, including Australia. It publishes textbooks and offers a wide range of online educational technologies. For example, it provides online platforms for University of New England (UNE) distance higher education courses. UNE provides the course content and retains academic control, but uses Pearson’s technology to improve its course delivery.

Universities also outsource campus-based course delivery, usually to NUHEPs. Navitas operates Curtin University’s ‘Curtin Sydney’ campus. Students study a Curtin University curriculum and are awarded a Curtin University degree. Similarly, the Melbourne Institute of Technology delivers University of Ballarat courses, and students receive University of Ballarat qualifications.

The biggest story in higher education during 2012 was the rise of ‘MOOCs’—massive open online courses. In Australian terminology, MOOCs are units of study or subjects offered online for free, often with no entry requirements. Assessment is usually through online tests or peer review from other students. Major MOOC platforms include Coursera, Udacity and EdX. Prestigious universities such as Harvard and Princeton are making some of their subjects available more widely via MOOCs. Australian universities are involved with MOOCs (box 1). According to its website, Coursera alone attracted about 2 million enrolments worldwide in its first year of operation.

Motives for establishing MOOCs vary. From a university perspective they can be a public service, a way of testing

educational theories, a profile builder, a way of making money, or a mix of these. Some MOOCs generate a small amount of revenue by selling credentialed assessment directly to students. In October 2012 Coursera signed its first commercial deal, in which Antioch University will pay to use Coursera subjects. Antioch will offer students academic support and a credential, but will charge them less for a Coursera-based subject than a traditional on-campus subject. Duke and Pennsylvania will be paid by Coursera for their content, creating a business for them in course content.

It is too early to say how MOOCs will evolve. At this point, they are one of several signs that higher education as an industry is being re-configured. The distinction between on-campus and distance education is blurring as online technology is used in both. Sub-products in higher education—including marketing and admissions, course content, course delivery and assessment—do not need to be provided by the organisation that ultimately confers the degree. For-profit companies that can achieve economies of scale by working with many universities are likely to play an increasing role in higher education.

Box 1: Australian free online course materials

Several Australian universities already offer free online subject materials, with more to follow. La Trobe University offered courses throughout 2012 via iTunes-U. A course on ancient Greece attracted half a million downloads worldwide. In December 2012 the University of New South Wales started a free first-year computer programming course using their own OpenLearning platform, which they say is “social like Facebook, collaborative like Wikipedia and available to anyone in the world.” The University of Southern Queensland uses the Open Educational Resource platform to offer a subject on regional relations in the South Pacific.

Other Australian universities will offer MOOCs in 2013. The University of Melbourne will offer ten courses via Coursera. It attracted more than 38,000 enrolments in the month after announcing its involvement. The University of Western Australia is offering three courses in 2013 in conjunction with Stanford via its Class2Go software. The University of Queensland has also announced an intention to offer MOOCs.

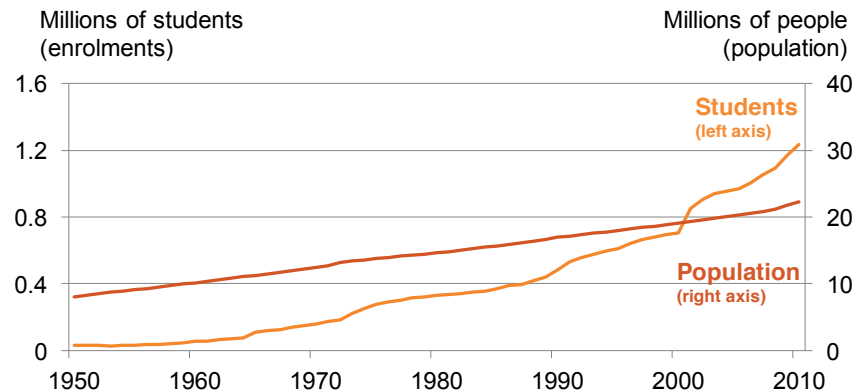
2. Higher education students in Australia

The higher education sector has undergone significant changes over time. In this section we examine trends in enrolments – how many students are there? From where do they come, what do they study, and where?

2.1 What is the trend in student numbers?

Australian higher education student numbers have grown strongly since the 1960s, both in absolute terms and relative to population in recent decades, as shown in figure 2.

Figure 2: Growth in enrolments and population

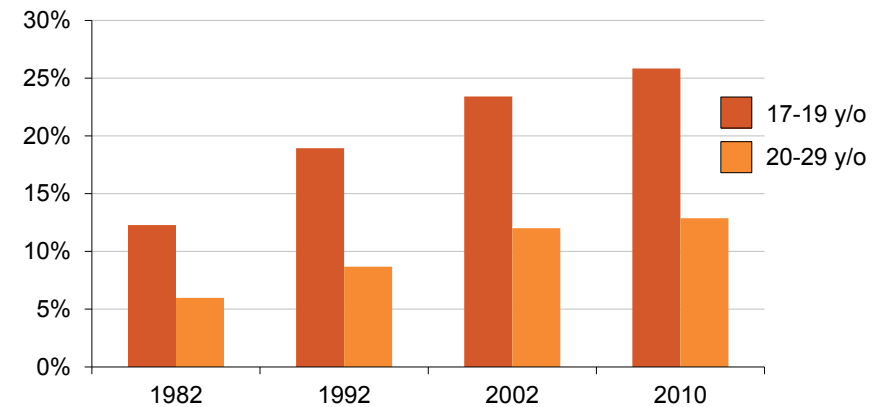


Note: Figures from 2001 onwards are based on full year enrolments, prior years are based on enrolments as at 31st March

Sources: Based on DEEWR (2000); DIISRTE (2001-2011); ABS (2008b); ABS (2008a)

Total enrolments have increased from around 30,000 in 1950 to over 1.2 million in 2011, including both international and domestic students. Figure 3 shows trends in higher education participation rates for school leavers aged between 17 and 19 years, and for people in their twenties. In both cases, participation rates doubled between 1982 and 2010. Government policy aims for 40 per cent of 25 to 34 year olds to have a bachelor degree or higher by 2025.³⁸ The figure was 36.8 per cent in 2012.³⁹

Figure 3: Domestic higher education participation rates, 17-19 and 20-29 year olds



Sources: DEET (1993); DIISRTE (2001-2011); ABS (2008a); ABS (2008b)

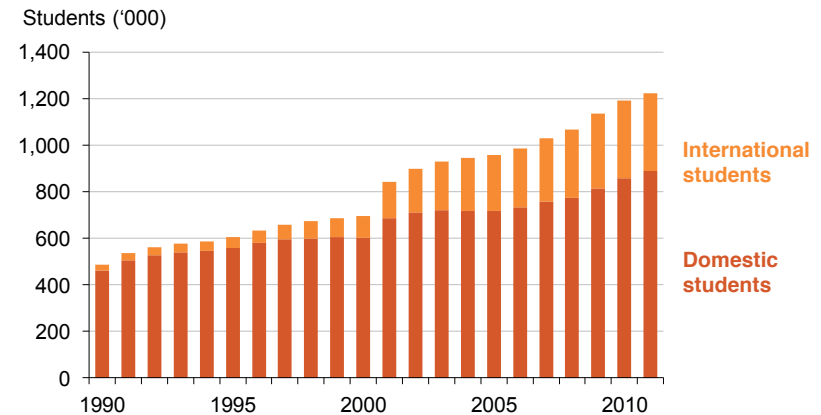
³⁸ DEEWR (2009), p.12

³⁹ ABS (2012b), table 8

In the 2000s, much of the enrolment growth in Australian universities came from international students (figure 4). In 2011, 332,500 international students were enrolled with Australian higher education providers, including 80,000 enrolled in offshore campuses. International students have studied at Australian universities for a long time, but their numbers were small until the mid-1980s. Often their enrolments were part of Australia's overseas aid, wholly or partly subsidised by the Federal Government.⁴⁰ 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. The boom finally stalled in 2009. Changes to migration policy, a high dollar, and negative international publicity on student safety contributed to the decline from 2009 (box 2, p 25).

Due to smaller numbers of international students starting courses from 2009, their total numbers in Australian universities are likely to keep declining through 2012 and 2013. Fortunately for universities, the move to a 'demand-driven' funding system for domestic undergraduates (section 5.2) means that there is strong growth in the local market. About 890,000 domestic students were enrolled in 2011, an increase of more than 100,000 on 2008.

Figure 4: Domestic and international enrolments 1990-2011



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

Sources: DIIS RTE (2001-2011); (2012m)

⁴⁰ Meadows (2011)

Box 2: International student visas

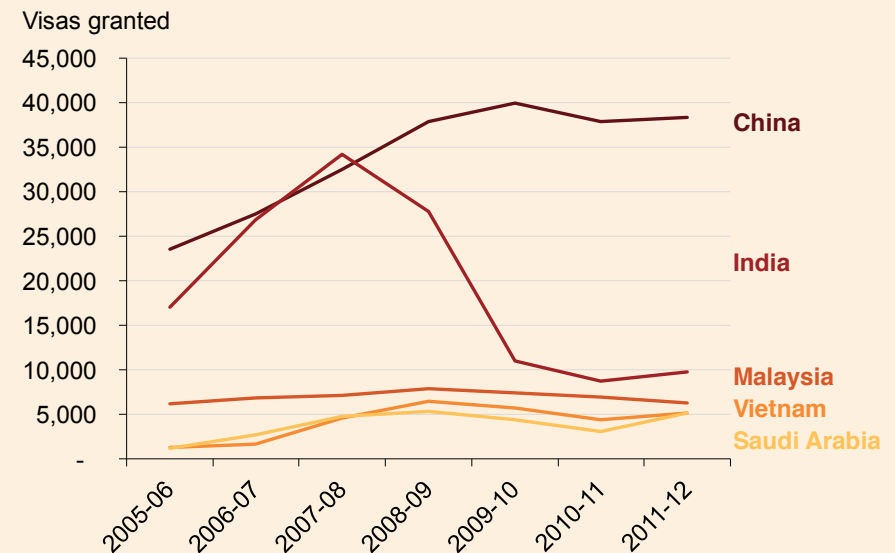
Between 2008-09 and 2010-11, there was a decline in both the number of international student visa applications lodged and those granted. The decline was predominantly driven by 'offshore' applicants – new prospective students rather than students already in Australia on other visas. The number of visas granted stabilised in 2011-12.

The decline was mostly among Indian applicants. While India overtook China in 2007-08 as the country with the most Australian higher education visas, there was a subsequent rapid decline in the visas granted to Indian applicants, reflecting both lower demand and higher application rejection rates. Student visas granted from other major source countries such as China, Malaysia, Vietnam and Saudi Arabia did not show the same dramatic decline. Applications from India increased slightly in 2011-12 compared to 2010-2011.

These trends reflected changes in Australian migration policy which made permanent residence more difficult to obtain for non-citizens studying in Australia (section 6.2.6), a high Australian dollar, greater competition in international markets (especially from American universities), and student safety issues.

In mid-2012, the Federal Government announced more favourable post-study migration opportunities for international students (section 6.2.6). Student visa data due to be published during 2013 will show whether these changes have increased demand.

Figure 5: Australian visas granted for higher education students by leading countries of origin, 2005-06 to 2011-12

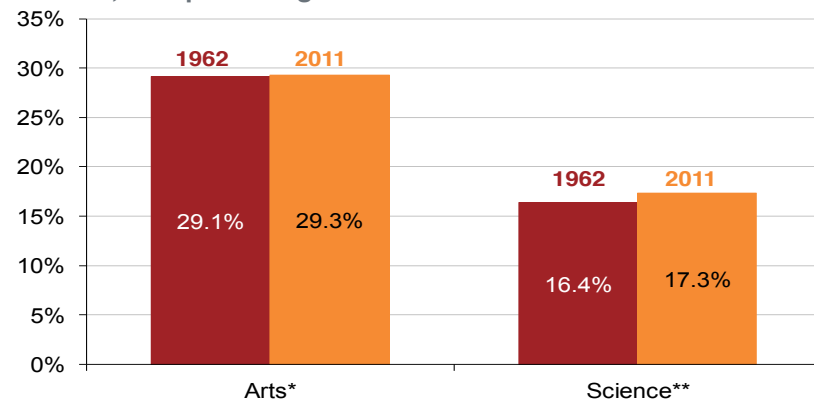


Source: DIAC (2012c)

2.2 What is being studied?

Australian universities have mixed general and professional education from their earliest days. Though more professions require degrees for admission than in the past, with a consequent increase in university enrolments in related fields, more general courses have largely retained their domestic undergraduate enrolment share. Precise comparisons over time are complicated by changes in the way higher education statistics are collected, but figure 6 shows stability in arts and science domestic undergraduate enrolment shares over nearly 50 years. Combined qualifications (section 1.3.2) give students the option to mix vocational and general interests in their studies.

Figure 6: Domestic bachelor-degree enrolments for arts and science, as a percentage of total enrolments

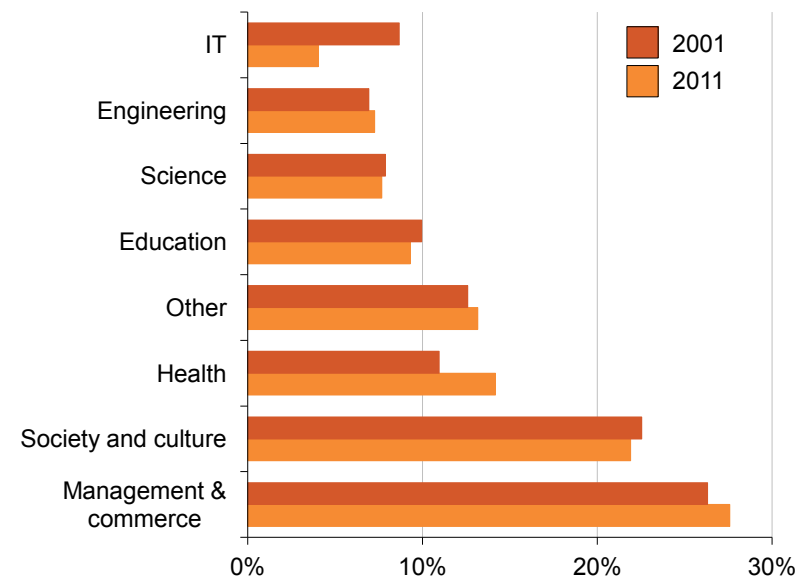


Notes: *2011 Arts includes the ABS categories 'Society and Culture' (minus sub-categories law and economics); and 'Creative Arts'; ** 2011 Science includes IT (which makes up 3 per cent of students).

Sources: Macmillan (1968) measured by faculty, DIISRTE (2012m) measured by EFTSL.

It is the more vocationally oriented courses that change most over time. Figure 7 shows that between 2001 and 2011 information technology lost much of its enrolment share, while health courses added enrolment share. Both changes reflected shifts in the labour market.

Figure 7: Course enrolment share by field of study



Notes: Includes international and domestic students

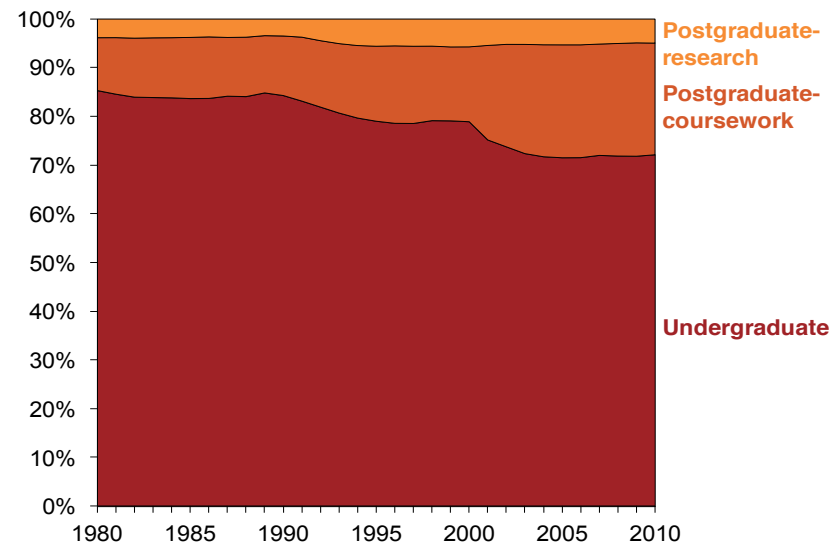
**Other' includes 'Architecture and Building', 'Agriculture, Environmental and Related Studies', 'Creative Arts', 'Food, Hospitality and Personal Services', 'Mixed Field Programs' and 'Non-Award Courses'. Enrolment shares sum to more than 100 per cent due to combined courses.

Source: DIISRTE (2012o)

While domestic student enrolments are spread across a wide range of courses, international student enrolments are quite concentrated. Just over half of all international students are enrolled in management and commerce courses. Engineering and information technology are also popular with international students.

Enrolment shares have also been affected by the expansion of postgraduate study (figure 8). At least at the sub-doctoral level, postgraduate study is more vocational than undergraduate study. This reflects people upgrading their professional qualifications.

Figure 8: Enrolment share by level of study, 1980-2010

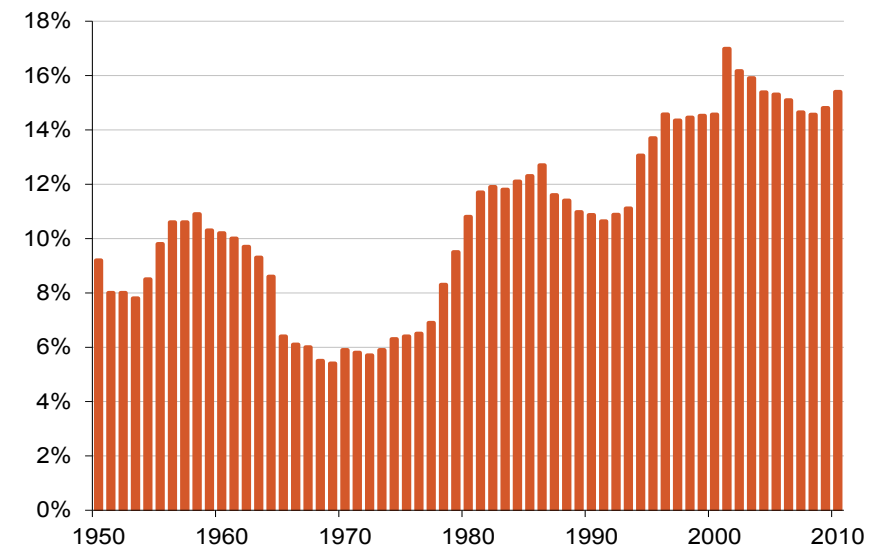


Note: Doctorate by coursework is classified as postgraduate coursework.
Sources: DEEWR (2000); DIISRTE (2012o)

2.3 The rise of off-campus study

Studying off-campus is not a new thing in Australia. Originally carried out by correspondence, distance education has never fallen below 5 per cent of total enrolments. As figure 9 shows, the proportion of students studying off-campus has increased since the early 1990s (the drop from 2000 was due largely to declining international student off-campus enrolments).

Figure 9: Percentage of students studying off campus



Notes: Multimodal students not included; dip from mid-1960s caused by the incorporation of non-university institutions into the statistical series; dip from mid-1980s influenced by moving nursing courses from hospitals to universities; 1994-2000 headcount discounted by 3.7 per cent to reduce the effect of possible double counting of OUA students.

Sources: DEEWR (2000); DIISRTE (2001-2011); (2012m)

If 'multi-modal' education is included – students who mix on and off-campus study – almost one in four students study off-campus, or approximately 298,000 people.⁴¹

Several factors are likely to be behind this trend. Improved educational technology via the internet has made off-campus study easier for students, avoiding long delays as work is sent and returned via mail. Compared to correspondence courses, online study provides more opportunity for interaction with staff and other students. 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, and among domestic students at public universities postgraduates have driven growth in off-campus study in the last decade. In comparison, school leavers generally prefer to undertake their course through face-to-face tuition.⁴² As in other areas of higher education over the last 20 years, the profit motive has also promoted expansion. Most notable in this regard is Open Universities Australia (OUA). Through aggressive marketing, OUA has increased its student numbers by a factor of five since 2004, to almost 55,000 in 2011.

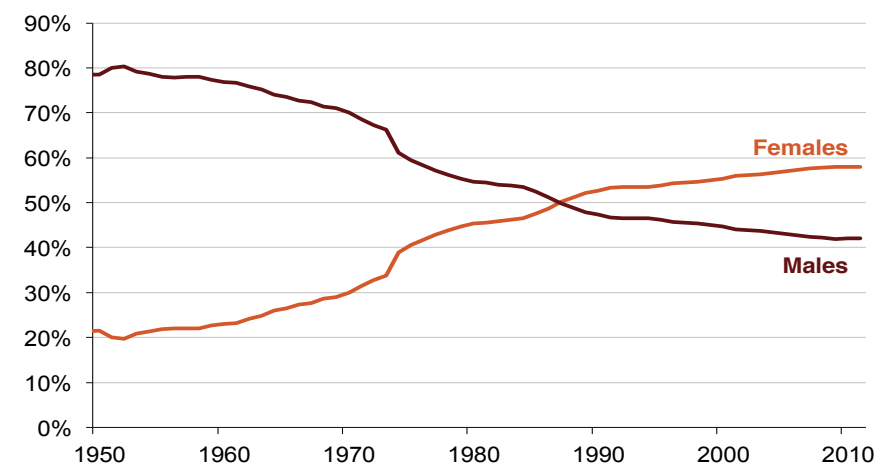
2.4 Who is studying?

Universities used to be places mainly for men. In the 1950s, only about one in five university students was female. But in 1958, women started a remarkable run of consistent annual gains in

enrolment share. This run was only broken in 2010, when male students made a tiny gain in their proportion of total enrolments compared to 2009. Women have been a majority of university students since 1987 (figure 10).

There are many reasons why this has happened: the overall social position of women has improved; entry into occupations dominated by women (teaching and nursing) now requires higher education qualifications; girls outperform boys at school; and young men have better vocational education options than young women. Over the last decade, males improved their position within several fields of study. But because the courses favoured by females rather than males expanded most, men continued to lose enrolment share.

Figure 10: Proportion of enrolments by gender (domestic students)



Sources: DEEWR (2000); DIISRTE (2001-2011)

⁴¹ DIISRTE (2012m)

⁴² 10 per cent of undergraduates aged 21 or less take at least one distance education unit of study, compared to more than half of those aged 30 or more: unpublished data supplied to the Grattan Institute by DIISRTE.

Despite their long-standing majority status in higher education, women are still regarded as an official 'equity' group in 'non-traditional' areas, such as engineering and information technology. However, there are no national policies to promote female enrolments in these areas. Active policies exist in four areas: for students with disabilities, Indigenous students, regional and remote students, and low socio-economic status (SES) students. Policies for Indigenous students may be revised in 2013, following a review of their access and outcomes.⁴³

In policy terms, low SES is the most important equity category. Each public university has a low SES enrolment target, with financial rewards if the target is met. These institutional targets are designed to reach a national target of 20 per cent of domestic undergraduate students from low SES backgrounds by 2020.⁴⁴ Though the target was set in 2009, debate about how low SES should be defined is on-going.

The current target defines low SES based on census information about educational and occupational levels where students live. Students are defined as low SES if they come from an area classified as in the lowest 25 per cent by SES. This cut-off misses a large share of the educationally disadvantaged population, suggesting that low SES policies have an overly narrow focus.⁴⁵ Under slightly different geographic classifications, in 2011 low SES students made up between 15.7 per cent and 16.7 per cent

of domestic undergraduates.⁴⁶ Their absolute numbers are trending upwards on either classification.

The current national target is based on low SES students as a proportion of the university population. This is administratively convenient, but access to higher education would more accurately be measured by low SES students as a proportion of their own low SES population. The current target can only be met if low SES enrolments increase more quickly than enrolments from other SES groups.

Table 2 reports educational participation or attainment of people aged 20-24, classified according to the highest occupational status of their parents (occupation is a common SES indicator). The reported percentages are of each SES group's own population. For example, 15 per cent of the children of machinery operators, drivers and labourers are in higher education or have a degree. By contrast, 49 per cent of the children of managers and professionals are enrolled in or have completed higher education. Table 2 also shows that, despite many exceptions, children tend to follow similar educational paths to their parents.

The importance of the choice of SES measure is shown in table 3. For example, the children of technicians and trade workers with higher education are only 9 per cent of the higher education population, but 23 per cent of their own population. Either denominator shows low SES students are less likely to attend university than higher SES students. However, measuring low SES students as a proportion of their own group gives a clearer idea of educational prospects and achievement.

⁴³ Behrendt, *et al.* (2012)

⁴⁴ DEEWR (2009), p 12-14. Institutional targets can be found in compacts between each university and the Commonwealth Government: DIISRTE (2012g)

⁴⁵ Coelli (2010)

⁴⁶ DIISRTE (2012m), appendix 2, table 2.6; DEEWR (2011b)

Table 2: Level of highest education enrolment or attainment for 20-24 year olds, by parent's occupation

Highest qualification or enrolment of children (20-24)	Parent occupation			
	Manager & professionals	Technicians & trade workers	Community, clerical & sales workers	Machinery operators, drivers & labourers
Bachelor degree or above	49%	23%	28%	15%
Certificate III - Advanced diploma	31%	42%	33%	31%
Year 12	12%	16%	18%	29%
Below Year 12	7%	19%	21%	27%

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

Source: Based on ABS (2011b)

Over the long term, higher education attainment has increased across all SES groups, high and low. For example, by 2001 the children of manual workers born in the 1970s had nearly five times the higher education attainment of the children of manual workers born in the 1950s. The higher education attainment level of children of 'upper service' workers increased by around two-thirds in the same time period.⁴⁷ Rising demand for higher education has been experienced by all SES groups.

⁴⁷ Marks and Macmillan (2007)

Table 3: Two alternative methods of measuring higher education access by SES

	Parent occupation			
	Manager & professionals	Technicians & trade workers	Community, clerical & sales workers	Machinery operators, drivers & labourers
Percentage of overall higher ed. students/graduates by parent occupation*	71%	9%	16%	4%
Likelihood of participating in higher ed., given parent's occupation**	49%	23%	28%	15%

Note: * e.g., the proportion of all 20-24 year olds participating in higher education (or who have a degree) whose parents are managers and professionals (71 per cent).

** e.g. the proportion of children of managers and professionals who participate in higher education or have a degree (49 per cent).

Source: Based on ABS (2011b)

2.5 How are students chosen?

Every child has a right to a place at a public school. But universities do not accept everyone who wants to attend. Successful school completion is generally the minimum requirement. In the early 1950s, any school completer who applied to a university was accepted.⁴⁸ As student demand grew more quickly than university funding, university places had to be restricted. Since then, university admission has primarily been

⁴⁸ Poynter and Rasmussen (1996), p 184-185

based on relative academic performance. The better an applicant's past academic performance, the better their chance of being awarded a place.

Several ideas lie behind this practice of academic ranking: that student places should be given to those most likely to complete; that student places should be given to those most likely to get high marks; that academic performance is a fair way of distinguishing between otherwise similar applicants; and that an admission system should minimise complexity and expense for both applicants and universities. These ideas do not always lead to the same conclusions about how to choose students.

The most frequently used source of information on past academic performance is school results. Most domestic school leavers are admitted to university principally on their Australian Tertiary Admission Rank (ATAR).⁴⁹ The ATAR ranks school leavers in their age cohort between 0 and 99.95. For example, an ATAR of 80 means that the student did better in year 12 than 80 per cent of their age cohort, including people who did not finish school. An examination of 2012 Victorian undergraduate courses indicated that ATAR was the main entry requirement for around 85 per cent of courses.⁵⁰

⁴⁹ Formerly called ENTER in Victoria, UAI in NSW, and TER in other jurisdictions except Queensland, which has kept its OP system. OP can be converted to ATAR.

⁵⁰ VTAC (2012). Courses that were listed as having a range of criteria for entry instead of an ATAR 'clearly-in' rank were counted in the 15%. Some of these use ATAR as one of several factors. Courses with a range of criteria tend to be in the creative arts or health fields.

At its higher ranks, ATAR successfully identifies students likely to complete. Analysis of students starting in 2005 showed more than 80 per cent of students who commenced on an ATAR above 90 had completed a course by 2010. Completion rates decline by ATAR decile. Fewer than half of those who commenced on an ATAR between 30 and 59 had completed a course by 2010, though more than 10 per cent were still enrolled.⁵¹ Similar patterns were observed in a 1990s study of completions.⁵²

ATAR is less successful at identifying which applicants will get high marks. Above 80, ATAR ranks are a moderately useful guide to future academic grades. Below 80, ATAR ranks are not a useful guide to future grades,⁵³ possibly because its ranking system over-states differences in academic ability. ATAR's predictive value tends to decline after first year.⁵⁴ In other words, many students get higher marks at university than their school results would suggest, while many others get lower marks. Also, for a given ATAR students from non-selective government schools tend to get better university grades than students from private schools or government selective schools.⁵⁵ School and university grades are influenced by many factors other than underlying academic ability. It is therefore not surprising that ATAR is an imperfect guide to university prospects.

⁵¹ James, *et al.* (2009), chapter 3; Lomax-Smith, *et al.* (2011), p 79-80.

⁵² Urban, *et al.* (1999)

⁵³ James, *et al.* (2009). Above 80, the correlation between ATAR and university grades in one reported study was around .4. But below 80, it was only .04. Correlations tend to be lower in disciplines not taught at school.

⁵⁴ Palmer, *et al.* (2011)

⁵⁵ James, *et al.* (2009), chapter 3.

The problems of ATAR-based admissions are well-known in the higher education sector. In practice, higher education providers use ATARs in a flexible way. Where ATAR is used for selection there is typically a published 'cut off' or 'clearly in' rank above which every applicant receives an offer. However, many applicants are admitted below this rank. Universities take into account social background and personal circumstances such as health issues that may affect school results. At some universities, an undergraduate general admission test for school leavers, UniTest, supplements rather than replaces school result-based admission systems. Mature-age applicants can sit the Specialised Tertiary Admissions Test (STAT).⁵⁶ Universities also accept students who have taken preparatory or pathway courses aimed at building study skills.⁵⁷ This can be a 'second chance' option for students who did not meet initial ATAR requirements.

Significant numbers of people apply for courses based on complete or incomplete higher education. These include students who attended 'pathway' colleges that award undergraduate diplomas, students switching courses or universities, or students returning for a second degree.⁵⁸ Some applicants apply based on their vocational education qualifications or experience.

For international students, universities set admission requirements based on home country school systems or international qualifications such as the International

Baccalaureate.⁵⁹ International students must also sit tests of English language proficiency.⁶⁰

Most potential domestic students apply through centralised state tertiary admissions centres, with about 54 per cent of these applications coming from Year 12 students. A large number of people apply directly to higher education providers.⁶¹ Tertiary admission centre applicants list the courses they would like to do 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 the applicant does not receive their first preference course, they can still receive an offer for their second or a lower preference course. Across Australia in 2012, over half of all applicants received a first-preference offer.⁶²

University admission processes are sometimes criticised for overly emphasising academic factors. Higher education providers are academic institutions, but they are also gatekeepers to the professions. Content knowledge is important to being a successful professional, but there are also many other relevant aptitudes and attributes. As section 8.1.1 explains, it is the non-academic aspects of graduate applicants that employers typically find most unsatisfactory. Specialised admissions tests may help identify which applicants have the desired non-academic attributes. An example is the UMAT (Undergraduate Medicine and

⁵⁶ For a study of STAT's predictive value see Coates and Friedman (2010).

⁵⁷ Levy and Murray (2005) cited in Palmer, *et al.* (2011), p 15

⁵⁸ DIIS RTE (2012p), p 13

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

⁶⁰ In the International English Language Testing System (IELTS), students need ratings described as 'competent user' or 'good user'.

⁶¹ In 2012, 273,167 applied through a tertiary admission centre, 76,805 applied directly to a university, with 13,366 using both methods: DIIS RTE (2012p) p 7-9.

⁶² *Ibid.* p 20

Health Sciences Admission Test) used by students applying for medicine at some universities. In other countries, interviews and personal essays are also widely used to assess applicants in a more broad-ranging way. This is not common for Australian undergraduate courses.

For applicants with high ATARs, it is unlikely that ATAR will be abandoned as a key selection tool any time soon. At these higher levels, ATAR successfully identifies applicants with a good chance of completing a course in a reasonable timeframe. By re-using school results, it is efficient for both universities and applicants. Any alternative or additional selection tool would need to more reliably predict future outcomes in a cost-effective way.

However, for applicants with low ATARs the issues are more complex. Significant proportions of people who enrol do not complete. These non-completion risks create dilemmas for universities. They want to create opportunities for higher education. However, taking students with poor completion prospects could be unethical, if there is high risk that the student will not benefit from their enrolment, but will incur debt.

Additional measures of students' skills and personal characteristics may help universities identify students with a good chance of completing a degree. Personality tests can also identify traits that support success, including thoughtfulness, tenacity, and use of effective study strategies.⁶³ Additional work is required to ensure these measures add predictive value to the ATAR.

These issues have become more important as limits on student numbers have been lifted (section 5.2.1). Universities can now accept low-ATAR students they would previously have rejected. To improve completion rates, we need better diagnostic tools, more advice to prospective students, and appropriate post-enrolment support for students at risk of non-completion.

⁶³ See for example McKenzie, *et al.* (2004) regarding personality traits and Duckworth, *et al.* (2007) regarding the construct of 'grit'.

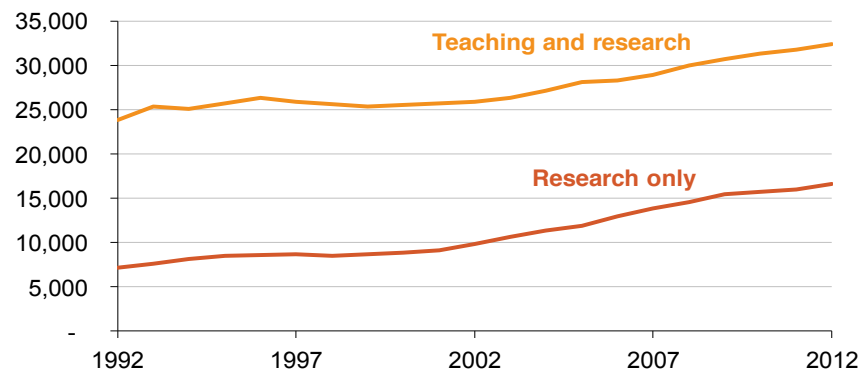
3. Research in Australian higher education

Research is a key activity of universities. Without it, they could not use the ‘university’ title (section 1.3.1). The research workforce and research output have both increased significantly over the last 20 years. Research is increasingly aimed at practical outcomes, rather than knowledge for its own sake.

3.1 How many researchers are there?

Despite the large increase in student numbers since the early 1990s, university hiring has emphasised research-only academic staff. Research-only staff made up 21 per cent of the academic workforce in 1992, increasing to 34 per cent by 2012.

Figure 11: Numbers of teaching and research, and research only staff

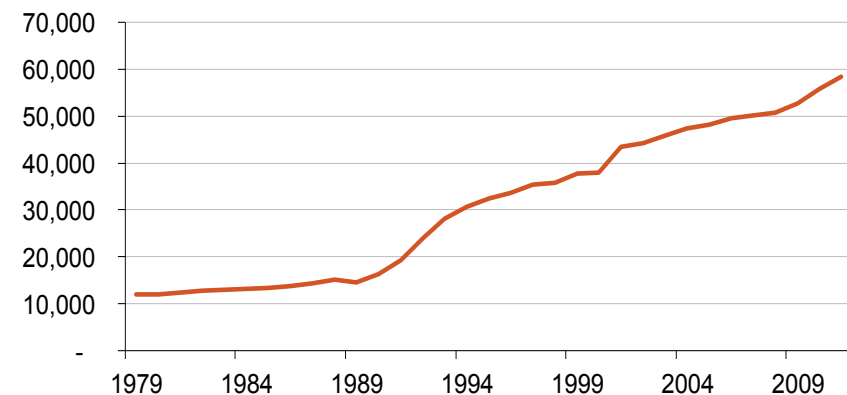


Source: DIISRTE (2012l)

In 2012, about 49,000 academics had a research or teaching and research function (these are shown in figure 11). Additional dedicated research funding during this period has created a demand for specialised research staff.

The same period has seen a substantial increase in research students (figure 12), who in effect make up a large proportion of the research workforce. Including overseas students, there were about 58,500 research students in 2011. Attrition is high in some doctoral programs, but Australia now produces 6,500 PhD graduates each year, along with almost 1,500 graduates with masters by research qualifications.

Figure 12: Enrolment numbers in research degrees, 1979-2011



Sources: DEEWR (2000); DIISRTE (2001-2011); DIISRTE (2012m)

3.2 What is being researched?

Research spending is strongly skewed towards scientific disciplines, and medical science in particular. Medical and health research accounted for 29 per cent of higher education research spending in 2010, with other sciences together responsible for a similar share of expenditure. About 10 per cent of research spending is on the humanities and social sciences.

The sciences are also strong in research student enrolments. Nearly 20 per cent of research students are enrolled in the natural and physical sciences, compared to only 13 per cent of undergraduate students. By contrast, only 8 per cent of research students are enrolled in management and commerce, compared to 19 per cent of undergraduates. However, for humanities and social science students PhD and masters by research enrolment shares are similar to undergraduate levels.

Research is classified using OECD categories according to its approach to knowledge as well as its field. As figure 14 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 1992. In eighteen years it went from nearly 40 per cent of all research expenditure to 25 per cent. With total university research spending nearly tripling in this period to \$8.3 billion, however, basic research spending increased in real terms.⁶⁴

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. Some aspects of research funding policy have encouraged this shift (section 4.2.4).

Table 4: Research spending, research student and undergraduate student enrolments by broad discipline

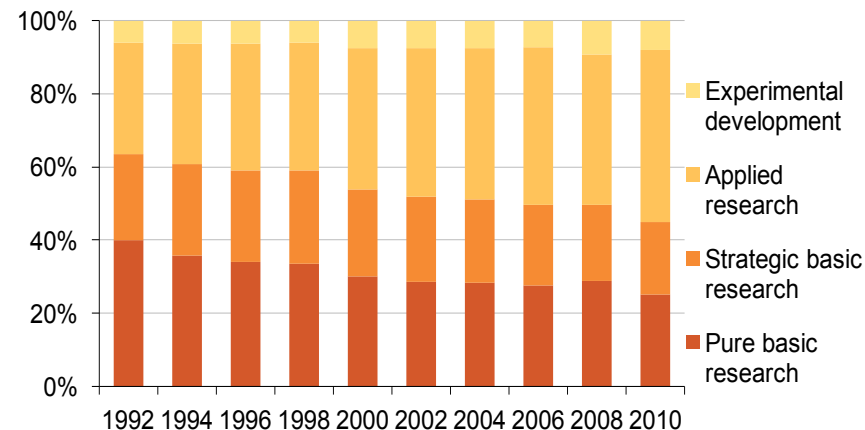
Discipline	Research spending (2010)	Research student enrolments (2011)	Undergraduate student enrolments (2011)
Natural and physical sciences	26%	19%	13%
Information technology	4%	4%	4%
Engineering and related technologies	11%	13%	7%
Architecture and building	1%	2%	2%
Agriculture, environmental and related studies	4%	5%	1%
Health	29%	14%	13%
Education	4%	8%	6%
Management and commerce	7%	8%	19%
Society and culture	10%	23%	26%
Creative arts	2%	6%	9%
Other	2%	0%	2%

Note: Spending based on field of research, enrolments based on field of education
Source: Based on ABS (2012c); DIIS RTE (2012m)

⁶⁴ ABS (2012c). Adjusted to \$2012.

The trend towards applied research is likely to become more pronounced after policy announcements during 2012. The government released a National Research Investment Plan, developed by the newly established Australian Research Committee (ARCom). It sets out a national research planning process to enable a coordinated, whole-of-government approach to research investment. The plan seeks to “guide research investment to improve national wellbeing by increasing productivity and addressing Australia’s key challenges.”⁶⁵ These challenges include the environment, resources, security, communities, health, food, energy and competitive industries.

Figure 13: Research spending by type, 1992-2010



Source: Based on ABS (2012c)

⁶⁵ DIISRTE (2012b) p 58

3.3 What do academics produce?

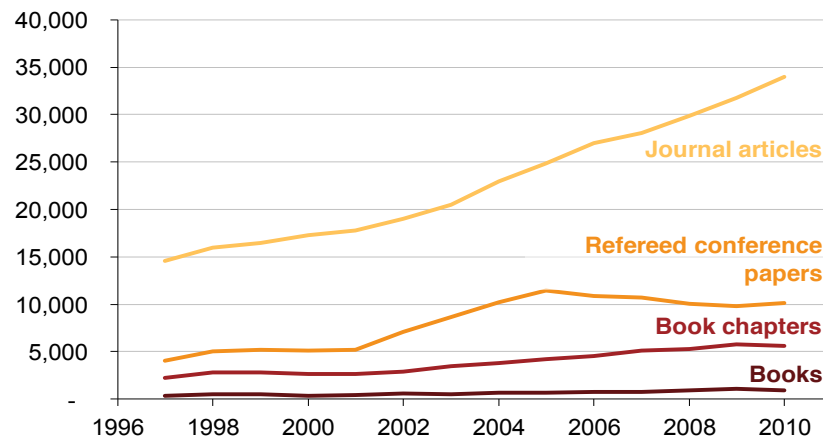
The growth in applied research activity shows in statistics on commercialisation activities by universities. ‘Invention disclosures’ – a notification of a novel and useful device, material or method to a university’s technology transfer office – increased by 170 per cent to nearly 1,200 between 2000 and 2009. Legally enforceable plant and breeder rights issued increased by a similar percentage, to 600. Yet the absolute numbers remain low, and the increase in potential commercial outputs has not translated into clear long-term gains in financial returns. Revenue from licensing has averaged less than \$100 million a year over the last decade, and contract revenue from industry is around \$250 million a year.⁶⁶

Despite the funding shift towards applied research, what universities remain good at is producing published research findings. Figure 14 shows there have been substantial increases in published books, book chapters, journal articles and refereed conference papers since the mid-1990s. Though increasing numbers of staff (figure 11) and particularly research-only staff account for some of the increase, there has also been an increase in research paper productivity (section 8.2). How much money universities receive from government depends in part on how many publications their academics produce (see also section 4.2.4). Consequently, academics are under pressure to increase their publications. This ‘publish or perish’ system has been criticised for putting quantity over quality. Quality issues are discussed further in section 8.2.

⁶⁶ Larkins (2011) p 218; DIISRTE (2011a); DIISRTE (various years-c)

Researchers receive substantial government support to produce these publications, yet their findings have rarely been accessible to taxpayers. This is set to change, as new government funding criteria have added minimum standards of public accessibility. From 1 January 2013, researchers must submit all Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC) supported research to an open access 'institutional repository' within twelve months of its publication. These changes are intended to maximise the benefits from research by disseminating it as broadly as possible.

Figure 14: Research publications, 1997-2010



Source: Universities Australia (1995-2008); DIISRTE (various years-c)

4. Higher education finance – the macro picture

This section discusses the various sources of finance in the higher education sector, and the relationships between them. These include funding for teaching (both from government and from students); for research (competitive and performance-based); and income support for students.

4.1 Higher education as an industry

Higher education is a significant part of the Australian economy. In 2011, universities had revenue of \$23.8 billion.⁶⁷ This figure does not count the non-university higher education providers (NUHEPs) that enrol at least 5.4 per cent of all higher education students. Counting universities alone under-states the size of Australia's higher education industry.

There is no public data on the total financial size of the Australian higher education industry. A small number of NUHEPs publish financial information, but their Australian higher education income is typically in total figures that include other education levels, or operations in other countries. The Grattan Institute used enrolment data released by DIISRTE (supplemented in one case with data from a NUHEP) and fees published by the NUHEPs to estimate their higher education income for 2011. We estimate that NUHEP higher education revenues are at least \$700 million. This is collected on a narrower basis than DIISRTE's figures, which include all university activities. It also omits a large number of NUHEPs for which there are no published enrolment data, though

Kaplan is the only organisation left out that we believe is large. The higher education sector was at least 1.7 per cent of the Australian economy in 2011.⁶⁸

Over the last twenty years, higher education has become a significant export industry. Publicly-funded universities earned around \$4.1 billion from international students in 2011. International students also spend money on living expenses while in Australia, but the amount is hard to quantify.⁶⁹

Though the international student market suffered a downturn in recent years, the higher education industry is likely to grow in the long term. Structural changes in the economy requiring a more skilled labour force (section 7.3 on graduates and the labour market), government policy lifting restrictions on funding for undergraduate places (sections 4.2.1 and 5.2.1), and entrepreneurial activity by both NUHEPs (section 1.2) and universities are all likely to maintain the industry's growth.

4.2 Public spending on higher education

Public spending on higher education takes four main forms:

- Direct grants primarily for teaching;

⁶⁸ Using chain volume GDP for calendar 2011.

⁶⁹ The ABS publishes figures on fees and spending on goods and services: ABS (various years-b). However, the methodology behind their calculations of higher education exports has been subject to a cogent critique. See Birrell and Smith (2010).

⁶⁷ Bond University (2012); DIISRTE (2012d)

- Student loans which are taken out by students but paid to higher education institutions on students' behalf;
- Student income support payments, which are paid direct to students; and
- Direct grants primarily for research.

Table 5 provides an overview of these funding streams. It omits one-off capital grants of around \$550 million in 2011, other short-term programs, and legacy superannuation costs.

Table 5: Overview of public higher education subsidies, 2011-12

Category	Sub-category	Description	\$ Millions
Teaching grants (~\$5.5bn)	Commonwealth Grant Scheme	Funding based on the number of supported domestic student places. Program uncapped from 2012. Section 4.2.1 for more detail	\$5,513 ⁺
Loan costs (~\$1.5bn)	Higher Education Loan Program: HECS-HELP, FEE-HELP, OS-HELP, SA-HELP	Costs include interest subsidies, debt not expected to be repaid, and discounts for up-front payment or early repayment. Section 4.2.2 for more detail.	\$1,515 ⁺
Income support for students (~\$2.2 bn)	Aus. Postgrad. Awards	Living expense support for postgraduate students. Section 4.2.3	\$219 ⁺⁺
	Youth Allowance	Living expense support for students aged 16-24. Section 4.2.3	\$1,618 ⁺
	Austudy	Living expense support for students aged 25 or more. Section 4.2.3	\$345 ⁺
	Abstudy	Support for living expenses for Indigenous students. Section 4.2.3	\$32 ⁺⁺⁺
Research grants (\$2.7 bn), (Not including 'other recurrent grants')	Competitive research grants	ARC – section 4.2.4 NHMRC – section 4.2.4	\$809 ⁺ \$573 ⁺⁺
	Performance-based block research grants	Research training and general research funding. Funding is based on research activity. Section 4.2.4	\$1,354 ⁺
	Other recurrent grants	For example: equity, national institutes, TEQSA.	\$408 ⁺
Total			\$12,387

Notes: NHMRC is calendar 2011. New HELP loans figure is calendar 2011. The table excludes state and local government spending.

Sources: ⁺ DIISRTE (2012h) and DEEWR (2012b); ⁺⁺ DIISRTE (2012h); ⁺⁺⁺ DEEWR (2012b); ⁺ DIISRTE (2012k); ⁺⁺ NHMRC (2012). Youth Allowance, Austudy and Abstudy figures are derived from DIISRTE (2012h) and DEEWR (2012b), and weighted by the split in recipients between higher and vocational education.

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 4.2.2) and make their students eligible for income support (discussed in 4.2.3). However, the core teaching and research grants are largely restricted to institutions specifically listed in the *Higher Education Support Act 2003*. These are called 'Table A' and 'Table B' institutions. Table A contains all universities to which governments appoint Council or Senate members, plus the Australian Catholic University and Batchelor Institute of Indigenous Tertiary Education. Though 'public university' is not a legal concept, in common usage the term refers to Table A institutions. Table B contains Bond University, the University of Notre Dame, and the MCD University of Divinity. Table C contains Carnegie Mellon University and University College London (registered by TEQSA as 'overseas universities' in Australia). It gives FEE-HELP to students in higher education providers operating in Australia but controlled from overseas. An overview of different entitlements to public support is in table 6.

Access to Tables A, B or C is largely a matter of history. There is no application process. Institutions are occasionally added to one of the tables after lobbying the Government of the day, or given so-called 'national priority' Commonwealth-supported places. The ad hoc nature of eligibility to CSPs does not reflect any public policy principles. Inquiries and reform proposals over the last twenty years have repeatedly said it should be replaced with a system based on clear public policy principles.⁷⁰ To date, however, it has not happened.

⁷⁰ The story of some of these reform ideas is told in Norton (2013 forthcoming).

Table 6: Overview of funding eligibility

Funding Type	Table A	Table B	Table C	Other HE providers	OUA [^]
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)* [none in 2011]	✓ (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	✓	✓	✓	✗	✗
Student income support	✓	✓	✓	✓	✓

Note: [^]Open Universities Australia; *Based on ministerial decision.

Though NHMRC guidelines would permit Table C institutions to receive grants, none do.

4.2.1 Teaching grants for higher education institutions

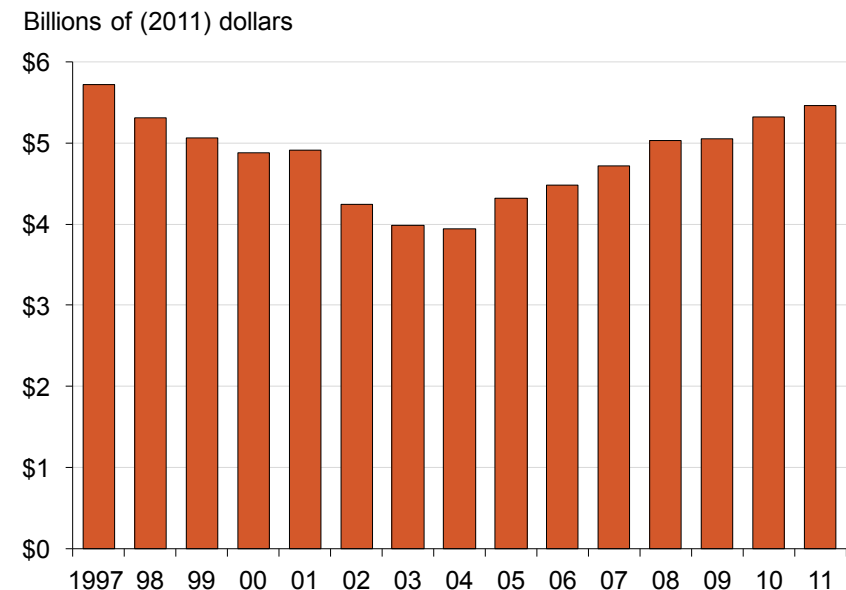
The single largest source of public funds for higher education is the Commonwealth Grant Scheme (CGS). \$5.5 billion was distributed through the CGS in 2011-12. As can be seen in table 6, the public universities and their students have the main entitlements to CGS funding. The CGS is principally calculated according to the number of Commonwealth-supported places. The term 'place' is used rather than 'student', because for funding purposes students are converted to their full-time equivalents, or equivalent full-time student load (EFTSL).

All disciplines are divided into eight funding 'clusters', each of which has its own Commonwealth funding rate (these rates and the separate student contribution rates are discussed in section 5.1). For each cluster, the number of Commonwealth-supported student places is multiplied by its funding rate. The total of these calculations for each funding cluster is the core CGS funding for higher education providers. Various loadings and a performance scheme paid out of the CGS add to the total, but the disciplinary classifications and student place numbers are the most important factors.

The number of student places is therefore a key driver of total spending, in total and on each eligible higher education provider. Before 2012, the Government capped the number of Commonwealth-supported student places. From 2012, the number of bachelor-degree undergraduate Commonwealth-supported places is largely uncapped (section 5.2.1). This is forecast to have a significant effect on total CGS spending. The DIISRTE budget forward estimates predict a 27 per cent increase between 2011-12 and 2015-16, or about \$1.5 billion. These

increases represent a substantial reversal of government policy. Between 1997 and 2004 operating grant funding (the CGS predecessor) dropped in real terms almost every year, as seen in figure 15.

Figure 15: Commonwealth Grant Scheme



Note: Operating grant figures are used prior to 2005, less HECS charges. These figures have been deflated using a weighted index based on Grattan Institute analysis. The index is weighted by three university spending components. Academic staff costs are deflated using the ABS labour price index for (public) professional, scientific and technical service workers. Non-academic staff costs are deflated using the ABS labour price index for (public and private) administrative and support services. Other costs have been deflated by CPI. In each year weights were calculated based on spending reported in the sector.

Sources: Based on DIISRTE (2012d); ABS (various years-a); ABS (various years-c)

Though nominal total funding per student place, including both public and private contributions, was never cut, three factors explain these figures. Some public funding was replaced with private funding, via increases to HECS; from 1997, some places were cut, especially for postgraduate coursework; and an indexation system introduced in 1995 delivered funding increases that were below inflation levels. The first two factors did not greatly affect university finances, just who ultimately paid for the place (fee-paying postgraduate places were typically more lucrative than Government-supported equivalents). But small annual real cuts through the indexation system had a major cumulative effect on university finances. In 2012, a new indexation system linked to inflation and labour costs was introduced. It ends the real annual cuts to per student funding rates.

4.2.2 Lending to students

Since 1989, the Commonwealth Government has lent higher education students money to pay for their courses. People who took out a loan but earn less than \$49,095 in 2012-13 are not required to repay.⁷¹ The loans are called income contingent because repayments depend on income levels. Students or former students who earn more than \$49,095 pay a share of their income through the tax system each year until the debt is fully paid off. The share is between 4 per cent and 8 per cent of their income, depending on how much they earn.

The scheme was initially known as HECS (Higher Education Contribution Scheme). Since then, income-contingent loan

schemes have proliferated, from 2005 under the name of HELP (Higher Education Loan Program). The most direct descendant of the original scheme, HECS-HELP, lends money to pay 'student contributions' – the student share of a Commonwealth-supported place.

The FEE-HELP scheme lends money to domestic full-fee students. OS-HELP helps finance overseas study by Australian students. SA-HELP supports a separate charge for student amenities. There is also a VET FEE-HELP scheme for upper-level qualifications in the vocational sector. All the money borrowed is consolidated into a single HELP debt managed by the Australian Taxation Office.

Income-contingent loans are an interesting solution to an old education finance problem. Most of the education industry has a client group – young people – without the means to pay for their own education. In some cases, their parents also lack the means to pay. Banks rarely lend on risky education investments – knowledge and skills cannot be repossessed – and charge high interest rates when they do. In all developed countries, state subsidies for education have been the policy response.

State-supported lending is an alternative to direct subsidy. Income-contingent loan schemes assume that most students have a cash flow problem, not a long-term affordability problem. These loan schemes differ fundamentally from commercial loan schemes because the repayments adjust to the debtor's financial circumstances. Otherwise, they are conceptually similar to bank loans, spreading over time the cost of large expenses.

⁷¹ DIISRTE (2012n)

As figure 16 shows, the amount of HELP debt outstanding has increased more than a hundred-fold since 1989. This reflects both more debtors and higher average debts. At 30 June 2012, HELP debtors owed the Commonwealth Government \$26.3 billion. Over the last few years, the Government has published the HELP debt's 'fair' value (shown in figure 16). This is an estimate of how much the HELP debt is really worth to the Government. At 30 June 2012 the HELP debt's fair value was \$19.4 billion, about \$6.9 billion less than its nominal value.

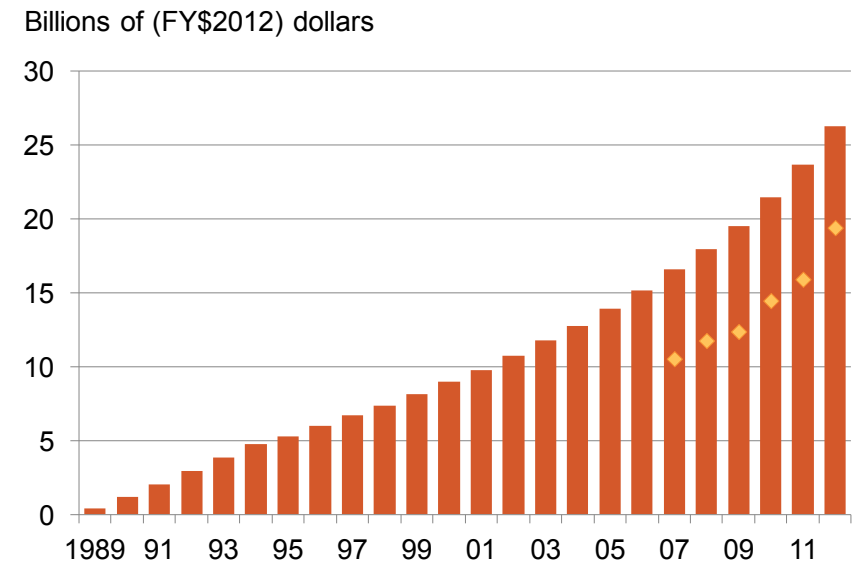
One reason for this write-down is that HELP debtors are subsidised by the Government. The Government borrows money in the bond markets, and re-lends it to students at the typically lower CPI inflation rate. The difference between the two numbers is a cost incurred by taxpayers. For 2011-12 this net interest bill is an estimated \$580 million.⁷² Grattan has estimated the annual net interest bill on the HELP debt each year since 1994 (figure 17). The HELP debt's fair value incorporates a write-down reflecting future interest costs before debt is repaid.

The major reason for the debt write-down is the debt not expected to be repaid, estimated at \$6.2 billion at 30 June 2012. This is due to HELP debtors forecast to die or move overseas before their debt is repaid. The proportion of the debt not expected to be repaid has moved up and down over the years, reflecting different

⁷² This figure is an estimate because the government does not specifically borrow for HELP. The notes to Figure 17 explain the assumptions behind this estimate. It is higher for 2011-12 than the Government's estimate reported in Table 5. The Government has not published the component costs of its estimate. However, they use a different method for calculating interest subsidies based on the future costs of new loans rather than the cost of maintaining existing debt levels.

actuarial estimates of future repayments. Figure 17 shows annual increases in doubtful debt as part of the cost of running HELP. The Government expects that 17 per cent of new HELP debt issued during 2011-12 will not be repaid.⁷³ The actual amounts written off each year are still quite small, but the anticipated long-term costs are high and rising. As student numbers and fees increase, this will become a more important issue.

Figure 16: HELP debt outstanding (and fair value)



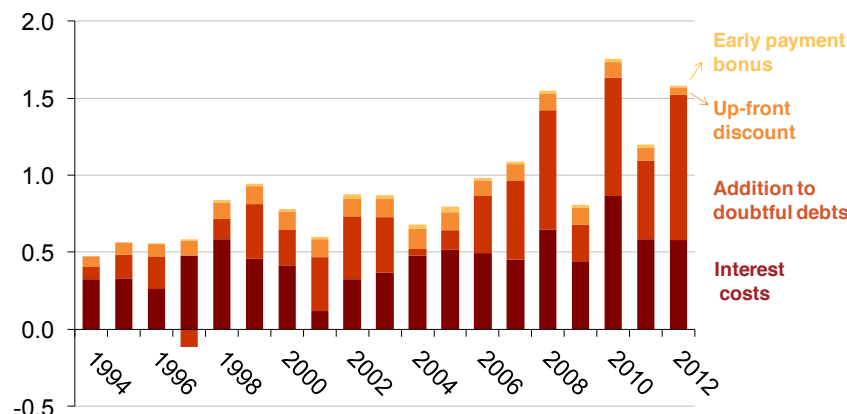
Note: Deflated using CPI

Source: Based on DIISRTE (2012e); ABS (various years-a); DIISRTE (various years-a)

⁷³ DIISRTE (2012c), p 64

Figure 17: Annual cost to government of HELP

Billions of dollars (FY\$2012)



Note: Addition to doubtful debt calculations is the increase in doubtful debt since the previous year. Interest cost is calculated as the difference between a three year average of the five-year Commonwealth bond rate and the indexation rate, multiplied by the level of outstanding debt. Estimated revenues from loan fees have been deducted from interest costs from 2005. Deflated using CPI. 2011-12 data for upfront discount and early payment bonus are estimates based on DIISRTE forecast 2012-13 data

Source: Based on DEEWR (2011a); (2012a); ATO (2013); Reserve Bank of Australia (2013); ABS (various years-a)

As new income-contingent loan schemes have been added, HELP has become confusing and sometimes seemingly unfair. Most full-fee undergraduates – principally at NUHEPs – must pay a 25 per cent loan fee if they take out a FEE-HELP loan. For example, if a full-fee undergraduate student borrowed \$10,000 the Government would record a debt of \$12,500. However, for undergraduate students receiving Commonwealth subsidies there is a 10 per cent discount for paying up-front, which converts to an

11 per cent charge for deferring.⁷⁴ The Government compensates universities for the discount, which is expected to cost \$40 million in 2012-13.

Full-fee postgraduates and students at Open Universities Australia (OUA) do not pay any loan fee. Yet all HELP debtors are entitled to a 5 per cent 'bonus' for early repayment. For example, if a HELP debtor repays \$10,000 the ATO reduces outstanding debt by \$10,500. This means that postgraduates and OUA students can take out a loan, and use the bonus to repay it for less than its nominal value. The early repayment bonus is expected to cost \$9 million in 2012-13.

FEE-HELP borrowers have a lifetime limit on how much they can borrow (for 2013, \$116,507 for medicine, dentistry and veterinary science; \$93,204 for all other courses).⁷⁵ Yet in 2011 the Government effectively uncapped per student HECS-HELP lending. Previously, a seven year cap on enrolment in a Commonwealth-supported place provided a de facto cap on the size of HECS-HELP loans (seven times the maximum student contribution amount). By abolishing the seven year cap, the Government has let students keep borrowing for as long as they can find a higher education provider that will give them a Commonwealth-supported place.

The SA-HELP loan scheme for student amenities has a maximum annual loan of \$273 in 2013 (the price limit on the student

⁷⁴ For example, if a course costs \$10,000 a year a 10% discount would be \$1,000, bringing the price down to \$9,000. However, another way of looking at this is that the 'real' price is \$9,000, and that anyone who defers pays an extra \$1,000, or 11% more.

⁷⁵ DIISRTE (2012n)

amenities fee). The main problem with SA-HELP is that the rationale for a separate student amenities loan scheme is unclear. Anyone who needs to borrow \$273 will also need to borrow for their tuition charge. Rather than creating a new HELP scheme with extra administrative costs, the student amenities fee could have been added to student contributions or fees and borrowed under HECS-HELP or FEE-HELP.

With so many complexities and anomalies in HELP, it may be time to start again with a single, simpler, loan scheme.

4.2.3 Direct grants to students

Tuition subsidies and loans to students are paid direct to higher education providers on their behalf. For their living expenses, some students receive additional government support. The biggest student income support scheme is Youth Allowance. On average about 180,000 higher education students received Youth Allowance in 2011-12, at an estimated cost of around \$1.6 billion.⁷⁶ Youth Allowance spending has been going up in recent years, due to increasing numbers of students, changes to eligibility, and other reforms.

A little under half of Youth Allowance recipients receive it based on household need, assessed by a parental income test.⁷⁷ Students whose parents earn \$46,355 a year (2010-11) or less are entitled to the full at-home Youth Allowance rate of \$265 a

fortnight. The fortnightly payment reduces as parents earn more than \$46,355, or if the student earns more than \$400 a fortnight. There are also lump sum payments to assist with textbooks and similar costs, and for relocation expenses for students who must leave home to study.

The remainder of Youth Allowance recipients are not subject to the parental income test, usually due to their work history or age. The Government has lowered the age at which students are no longer subject to a parental income test to 22, from 25 when it came to office. This makes students in high-income households eligible, so long as their personal income is low.

Along with Youth Allowance, there are two other smaller income support programs. Austudy is for students aged 25 or older, and in 2012-13 will cost an estimated \$340 million for 27,800 students. Abstudy is for Indigenous students, and in 2012-13 will cost an estimated \$36 million for 4,300 students.

As well as these generally needs-based income support schemes, Australian Postgraduate Awards are merit-based scholarships for research students. They are funded by the Federal Government (approximately \$248 million in 2012-13), but allocated by universities.

4.2.4 Grants for research

Universities receive two broad types of research grant. Project-based funding is awarded on a competitive basis. The money awarded needs to be spent on that project. Performance-based block research grants are driven by formulae including output indicators. 'Block' funding means that universities have discretion

⁷⁶ DIISRTE (2012a). Students in vocational education and secondary school make up 40 per cent of Youth Allowance recipients. Total spending on Youth Allowance reported in the Budget papers has been reduced 40 per cent to arrive at an estimate of \$1.6 billion for higher education.

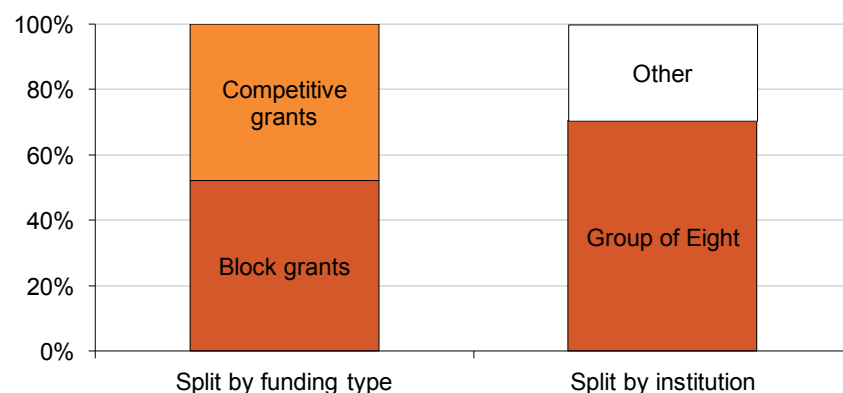
⁷⁷ DHS (2012)

on its precise use, within the broad parameters of the funding scheme. Arguably, there is a third category of non-performance based block grant, discussed below. Though all universities are entitled to research grants, and government policy works to distribute research funding across all public universities, figure 18 shows that the 'Group of Eight' or sandstone universities receive most research funding (see Appendix A for an institutional list).

Competitive project grants

The Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) are the main sources of competitive project funding. Eligibility for ARC grants is largely restricted to universities, while eligibility for NHMRC grants is broader, including medical research institutes and hospitals.

Figure 18: Breakdown of research funding, by type of funding and type of institution

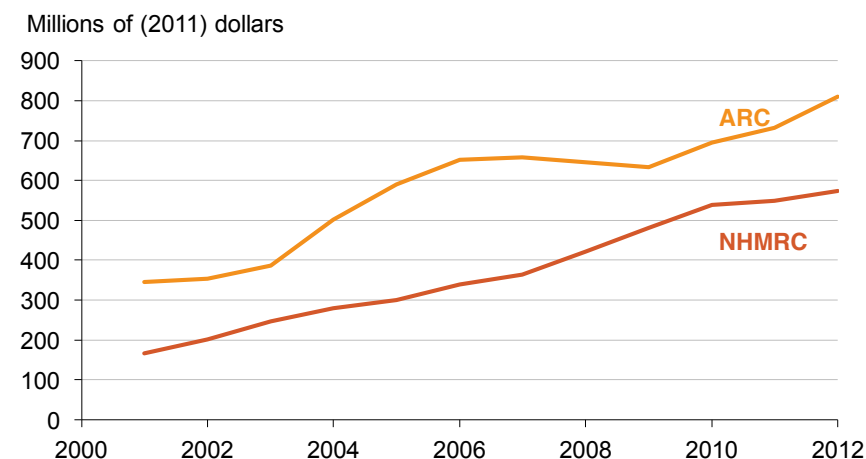


Source: DIISRTE (2012j)

However, universities are the main beneficiaries of NHMRC grants. Trends in ARC and NHMRC university funding are shown in figure 19.

For universities, the significance of these competitive grants goes beyond the money they receive – especially as this never covers the full cost of the project. Their level of grant income contributes to their performance-based block research funding (see next section), both directly through block grant funding formulae and indirectly through increased research outputs. For academics and their institutions, prestige as well as money is attached to winning competitive grants.

Figure 19: ARC and NHMRC grants to universities, 2001-2012



Source: DIISR (2011); NHMRC (2011); DIISRTE (2012k); NHMRC (2012)

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, about 22 per cent of the 3,425 applications for funding in 2013 were approved.⁷⁸ Success rates were similar to previous years. Funded projects receive between \$30,000 and \$500,000 a year for up to three years.⁷⁹ Discovery grant criteria include the applying researchers' track record in research publications and the research proposal's quality, including whether it addresses a significant problem, will advance knowledge, will provide benefits to Australia, and is related to the 'National Research Priorities'. These include environmental sustainability for Australia, frontier technologies for Australian industries, promoting good health, and safeguarding Australia. During 2012 the Commonwealth Government decided to replace the National Research Priorities with more specific and strategic research and investment priorities.⁸⁰

Current national priorities apply to the other main type of ARC grant, Linkage Projects. These seek to encourage collaboration between higher education providers and other organisations, including industry and other potential end-users of knowledge. The partner organisations are required to make a contribution to the project. Linkage grants reflect a Government emphasis on useful knowledge and universities contributing towards a 'national innovation system'. These grants are one reason why research activity has moved in the direction of applied research (section

3.2). However, academics prefer less applied research topics. Many fewer apply for Linkage grants (fewer than 1,000 a year) than Discovery grants, despite their higher success rate – around 40 per cent in recent years.

For project grants, the largest pool of money administered by the NHMRC, the 2012 success rate was 21 per cent, slightly lower than in previous years. The main criteria for assessing projects are scientific quality, significance and/or innovation, and the researchers' track record in research output and impact. As with the ARC, there are priority areas of research, including, for 2012, Indigenous health, mental health, obesity intervention, and chronic disease. There is no maximum amount of project funding, and projects can be funded for between one and five years. The NHMRC also offers program funding for broad areas of health research expected to 'contribute new knowledge at a leading international level'.

Performance-based block grants

Competitive research grants have been part of the Australian research funding system for a long time. An ARC predecessor was founded in the mid-1960s, and the NHRMC has antecedents going back to the 1920s. The long-term trend is towards allocating funding on a competitive basis. However policymakers have always seen block grants as an integral part of the research funding system. The two ways of funding research reinforce each other in ways that promote overall research performance.

Block grants help sustain the 'research fabric' behind the competitive grant system. It provides indirect support for competitive grants, by helping to fund general research

⁷⁸ ARC (2012a)

⁷⁹ ARC Discovery Projects Funding rules for funding commencing in 2013.

⁸⁰ DIISRTE (2012b)

infrastructure such as laboratories and libraries that can be used in many different research projects. This encourages universities to invest in infrastructure with multiple uses. Block funding also permits a practice of not funding 100 per cent of any funding application, on the assumption that part of the cost will be met from block grants. This creates incentives for universities to keep expenses down instead of cost-padding applications to get a larger grant.

Block grants are also important to future research. Though the ARC and NHMRC have schemes for early-career researchers, proven track records of quality research are a major factor in awarding the main project funds. Research funds untied to particular projects let universities invest in researchers with potential but without a substantial track record. As well as developing research careers, unrestricted research funding gives universities scope to develop their own research direction and priorities. They can advance ideas or fields that the competitive funding bodies won't support. At the same time, the hope of winning future competitive research grants means that universities are most likely to back proposals that have a prospect of eventually receiving competitive funding.

The most flexible block research grant is the Joint Research Engagement Program, which will disperse \$345 million in 2012-13. It can be used to support any activity related to research. Its performance drivers are research student load, publications and research income, excluding money from competitive grants.

The Sustainable Research Excellence (SRE) program supports the indirect research costs associated with competitive grants. In

2012-13, it will provide \$139 million.⁸¹ It has a complex funding formula including competitive grant income and performance in the Excellence in Research for Australia (ERA) assessment (there is more detail on ERA outcomes at section 8.2).⁸²

Research infrastructure is supported by the Research Infrastructure Block Grant scheme (RIBG), which will receive \$233 million in 2012-13. Institutional funding levels are determined by their share of competitive research grant income.

Entry into a research career typically requires a PhD, and the Research Training Scheme (RTS) is the major block funding supporting domestic research students. In 2012-13, it will provide \$656 million to support domestic students enrolled in doctorates and masters degrees by research. The major performance driver of institutional funding (50 per cent) is research qualification completions, reflecting policy concerns about high attrition rates from research degrees. As with most research performance measures, completions tend to support the status quo – institutions with large numbers of research students are likely to have large numbers of completions. The other RTS performance drivers are research publication and income, indicators of the general research environment at the university.⁸³

Non-performance based research funding

Until the Commonwealth Grant Scheme, funding for teaching was explicitly intended to also cover some research costs. CGS

⁸¹ After cuts announced in the Mid-Year Economic and Fiscal Outlook statement: DIIS RTE (2012a); Treasury (2012)

⁸² DIIS RTE (2012i)

⁸³ DIIS RTE (2012j)

payments are based on student numbers, but the legislation does not specify how the money is to be used. A study of university costs found that in practice some CGS money is spent on research.⁸⁴

Non-performance based research grants are an important issue in Australian higher education policy design. Research and teaching in the same disciplines is part of the legal definition of a university (section 1.3.1). Most permanent academic staff are employed to teach and to research. However, the combined teaching-research staffing model is not supported by funding policy. Teaching staff requirements reflect student choices by institution and field of study. Yet the main research funding schemes are awarded on criteria that have nothing to do with undergraduate student numbers. Funding policy drives teaching and research in divergent directions.

One response to the teaching-research funding split has been extensive use of casual teaching staff. University staff superannuation records suggest that less than half the academic workforce has a permanent academic appointment.⁸⁵ Employing temporary staff on a teaching-only basis meets demand for teaching, without employing staff who expect research funding. Though extensive use of casual labour is a long-standing practice in Australian and overseas universities, it limits the number of permanent, full-time academic jobs universities can offer. This has potential disadvantages for staff, such as insecure jobs and fluctuating income; and for students, because staff turnover due to poor career opportunities causes lost expertise and experience;

and for universities, because it means that academic potential is lost to other, more secure occupations.

There are several possible policy responses to this problem, including more teaching-only academic positions within universities and teaching-only higher education providers. Some universities are creating more teaching-focused academic jobs, helped by the National Tertiary Education Union's willingness to support 'scholarly teaching fellows' in new enterprise bargaining agreements. Curtin University will introduce academic positions with a 70 percent teaching load in order to reduce casual teaching staff by 20 per cent.⁸⁶ Central Queensland University will introduce five new academic classifications that include teaching-intensive and teaching-focused positions.⁸⁷ However, for universities some funding for research incorporated within student funding rates is the most obvious way to support a teaching-research employment model. The 2011 final report of the higher education base funding review suggested that 6-10 per cent of teaching-driven funding should be 'associated' with maintaining research capability.⁸⁸

4.3 Private spending by students

Private higher education spending by students has increased its share of total university revenue since the mid-1990s (figure 20).

Direct fee payments and student contributions, mainly from international students, were 13 per cent of total public university

⁸⁴ Lomax-Smith, *et al.* (2011), p 48-54

⁸⁵ May (2011)

⁸⁶ Curtin University (2012)

⁸⁷ Central Queensland University (2012)

⁸⁸ Lomax-Smith, *et al.* (2011)

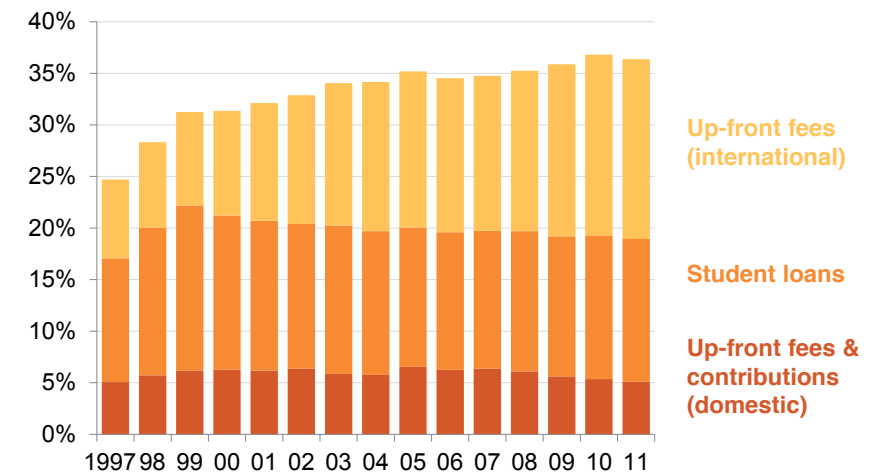
revenue in 1997 (then \$12.9 billion), but 23 per cent in 2011, out of a total of \$23.7 billion.⁸⁹ For the public universities, HELP income increased from 12 per cent to nearly 14 per cent of university revenue between 1997 and 2011. In 2011 dollar terms, HELP income more than doubled over the period 1997-2011, to \$3.3 billion. As explained in section 4.2.2, subsidies to the loan scheme mean that not all HELP lending should be counted as private expenditure. However, the long term trend is clearly towards more private higher education investment.

The increase in student contribution revenue and HECS-HELP payments was not highly significant for how universities were managed. The Government still largely determined how much money universities would receive and how many Commonwealth-supported student places they would have.

The increase in revenue from full fee-paying students, particularly international students, was, however, highly significant for how universities were managed. They were used to a captive home market, where they could be 'selective,' choosing students from an applicant pool exceeding the number of available places. The need for international student revenue meant that universities became 'recruiting' institutions, competing for highly mobile students who could choose not only from Australian universities, but among universities in several different countries. To ensure and enhance international student income, universities improved and adapted teaching practices, and had to re-examine the provision of many other services.

International students-focused universities on improving things within their control, but also exposed their cash flows to factors at best partially within their control. Migration policy, the strength of the Australian dollar, and perceptions of safety in Australia were all irrelevant to Australian universities 20 years ago. Now they can have a major effect on university revenues.

Figure 20: Per cent of universities' revenue paid by students



Note: Does not include 'other fees and charges'

Source: DIISRTE (various years-b)

⁸⁹ Totals are in 2011 dollars. For the method of deflation, see the note to Figure 15

5. Higher education finance – the micro picture

This chapter investigates the financing arrangements at the micro level of how resources are allocated to students. It discusses the public policy rationale for, and the impact of history on funding levels for Commonwealth-supported and full-fee student places. It explains how they are distributed between higher education providers.

5.1 Funding per student

5.1.1 Commonwealth-supported students

A ‘Commonwealth-supported student’ is somebody who receives a tuition subsidy under the Commonwealth Grant Scheme (section 4.2.1). They must also be charged a student contribution amount. The student can pay their student contribution directly to their university or borrow it under the HECS-HELP scheme (section 4.2.2). If students borrow under HECS-HELP, the Commonwealth Government pays the money to the university on their behalf.

Commonwealth and student contributions are both based on the unit of study, or subject. They differ according to field of study. There are eight Commonwealth contribution amounts and four student contribution amounts. Table 7 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 late 1980s study of higher education expenditure is the single biggest influence on the total amount. Its purpose was to adjust funding

rates in a new ‘unified’ system after higher education colleges became universities (section 1.3.1). A ‘relative funding model’ was devised, with disciplines funded by a ratio from a base. For example, a nursing place was funded at 1.6 times the base of accounting and law.⁹⁰ Though these funding relativities were intended to be a transitional measure, they were brought back in 2005. Nobody checked whether the cost relativities had changed in the intervening 15 years, though after a limited study by an economic consultancy of university expenditure,⁹¹ some disciplines received increased government funding in 2008.

In 2005, universities were also given the power to set student contributions, up to a legislated maximum. They could keep the money (previously, HECS went to the government). For most disciplines, the maximum was 25 per cent more than the previous HECS rates (for new students enrolling from 2005). There was no science to this particular percentage; it was a political compromise to get the higher education reform bills through the Senate. With little student price sensitivity evident in applications or enrolments, the maximum student contributions quickly became a standard price charged by all universities.

⁹⁰ For the background, see DEEWR (2010) p 24-26

⁹¹ Access Economics (2007)

Table 7: Contributions for a 2013 Commonwealth-supported place (student taking out HELP loan)

	Student	Contribution per EFTSL		Per cent paid by student
		Govt.	Total	
Humanities	\$5,868	\$5,369	\$11,237	52%
Law, accounting, administration, economics, commerce	\$9,792	\$1,993	\$11,785	83%
Mathematics, statistics	\$8,363	\$9,498	\$17,861	47%
Behavioural science, social studies	\$5,868	\$9,498	\$15,366	38%
Education	\$5,868	\$9,882	\$15,750	37%
Clinical psychology, foreign languages, visual and performing arts	\$5,868	\$11,681	\$17,549	33%
Allied health	\$8,363	\$11,681	\$20,044	42%
Computing, built environment, other health	\$8,363	\$9,498	\$17,861	47%
Nursing	\$5,868	\$13,041	\$18,909	31%
Science	\$8,363	\$16,606	\$24,969	33%
Engineering, surveying	\$8,363	\$16,606	\$24,969	33%
Agriculture	\$8,363	\$21,075	\$29,438	28%
Medicine, dentistry, veterinary science	\$9,792	\$21,075	\$30,867	32%

Notes: If students pay up-front they get a 10 per cent discount. The government pays the value of the discount to the student's university. In these cases, the government's share of total contributions is larger than shown in this table.

The student contributions listed in the table are the maximum that universities can charge, as legislated in HESA 2003. They may charge less than this amount if they choose, but in practice none do.

For Commonwealth-supported student places, we have an odd system of setting the total funding rates. It has no recent higher education information reference points. The underlying expenditure study is twenty years old; with a few limited exceptions the pricing system has not been updated to reflect changes in costs. What regulators or third-party accreditation agencies expect higher education providers to deliver is not considered. What students might want to purchase, such as smaller class sizes or better facilities, is irrelevant.⁹² The pricing system reflects historical and political, rather than current higher education, considerations.

Of the total funding rate for Commonwealth-supported students, the Commonwealth contribution is still the largest proportion for most disciplines. It is sometimes said that a Commonwealth contribution recognises the ‘public benefit’ of higher education. However, the concept of the public benefit plays no direct role in setting the Commonwealth contribution. Effectively, the Commonwealth contribution is what is left after the student contribution is deducted from the total funding per place.

Student contribution levels do have a general rationale. In 1997 the formerly flat HECS rates paid by all students, regardless of courses, were replaced with ‘differential HECS’. The new rates varied with graduates’ assumed earnings. So law and medicine units were given the highest differential HECS rates, because lawyers and doctors tend to have relatively high salaries. Arts and education units were given the lowest differential HECS rates, because arts graduates and teachers tend to have relatively low

⁹² They can however pay for a faster service, with universities able to charge full fees for summer or winter school units.

salaries. So the concept of private benefit is directly used in the higher education funding system, while public benefit is not.

A base funding review commissioned by the Federal Government, which reported in late 2011, recommended reversing this system. It argued that government should cover a flat 60 per cent of all funding rates, in recognition of higher education’s public benefits.⁹³ *Graduate Winners*, a 2012 Grattan Institute report, argued against this approach.⁹⁴ In January 2013, the government announced that private benefit would remain the basis of student contributions.

Giving universities more power to set student charges has often been suggested. Since the Commonwealth Government started regulating student charges in 1974 this has only occurred once, in 2005.⁹⁵ It would provide a way of adjusting funding levels in light of changes in costs, regulations, and student preferences. However, it may also lead to high rates of fee inflation, as has been observed in the United States.⁹⁶ For domestic students higher fees would be substantially financed with HELP loans. Given that HELP loans are a significant cost to taxpayers (section 4.2.2), this would need to be considered before fees for domestic students were deregulated.

5.1.2 Full-fee paying students

In contrast to Commonwealth-supported students, full-fee paying students are lightly regulated. There is a floor price for

⁹³ Lomax-Smith, *et al.* (2011), p 102-103, and 108-113

⁹⁴ Norton (2012a)

⁹⁵ Some of the history is reported in Norton (2013 forthcoming).

⁹⁶ College Board (2012)

international students, intended to ensure that they pay their own way without consuming Commonwealth subsidies. However, there is no legal ceiling on the fees universities can charge international students or domestic students in full-fee markets. Only market forces regulate maximum fees. Perhaps reflecting tough market conditions, 15 per cent of fees for international students in a sample of bachelor-degree courses were stable between 2012 and 2013. The median increase was around 4 per cent.⁹⁷

There is limited research into fee-setting by Australian universities. One published study, using 2010 fee data, showed large differences between the cheapest and most expensive universities in the fees charged for international undergraduate students.⁹⁸ In most universities, the fees charged to international students were substantially higher than the income from a Commonwealth-supported place in the same field of study. However there were exceptions. For science courses, on average an international student was charged less than what a university would receive for a domestic student. For engineering courses, international and domestic students on average brought in the same amount of revenue.⁹⁹

The study also found strong correlations between research performance and fee levels: generally, the better a university's research performance, the more it charged international students.

⁹⁷ The sample was of 225 courses across all universities and all broad fields of study. Fee data was taken from university websites.

⁹⁸ Beaton-Wells and Thompson (2011), Appendix 4

⁹⁹ Subsequent research showed that average costs for science and engineering are below the Commonwealth supported rate: Lomax-Smith, *et al.* (2011), p 49.

It may be that on average research-intensive universities spend more on teaching,¹⁰⁰ but teaching profits make a substantial contribution to research at some universities. The research-fee level correlation also suggests that international students are buying prestige, which is linked to research performance.

The use of teaching revenue for research has implications for higher education and research funding policy. For universities, it provides an economic rationale for jointly producing teaching and research (section 1.3.1 for more on the teaching-research relationship). For government, it means that increased funding per student may not translate into higher teaching spending per student (below).

5.1.3 Spending per student

Although we can identify most revenue coming to public universities from teaching (sections 4.2.1, 4.2.2, and 4.3), spending on students is not easily calculated. There are inherent difficulties in making these calculations. 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.

The 2011 *Higher Education Base Funding Review: Final Report* published some data on costs per student place relative to

¹⁰⁰ Regression analysis in *ibid.* (p 50) found that low student:staff ratios and a larger proportion of higher degree research students were the 'main drivers' explaining why some universities had higher costs than others.

funding. The review panel found that median undergraduate teaching and scholarship costs were *below* funding rates in eight of ten broad fields of study (though at least one university had costs above funding in each of the ten). The average cost on this basis was around \$15,000 per EFTSL. However, if research costs are included then total costs *exceed* revenue in nine of ten broad fields of study. The average cost including research was around \$19,600 per EFSTL.¹⁰¹

The observed behaviour of public universities suggests that average funding for Commonwealth-supported places is sufficient, at least on a teaching-only cost basis. Over the last few years, public universities have voluntarily enrolled tens of thousands of additional Commonwealth-supported students. However, universities need to avoid taking on significant research expenses to ensure costs stay within revenues. As noted in section 4.2.4, casual employment has become common in academia. Casual and short-term teaching-only jobs are much cheaper for universities than full-time teaching-research positions. They save money by not paying academics during the non-teaching months of the year.

Another factor explaining additional enrolments may be low marginal costs. The marginal cost is the cost of adding another student. This could be modest when students can be placed in existing infrastructure and classes that are being offered in any case. However, the marginal cost can be high when the additional student requires significant new infrastructure.

¹⁰¹ Ibid., p 48-50. Research costs were research not funded by a specific source of research funding, such as the grants described in section 4.2.4.

In the non-university higher education sector, the 2010 annual report of the Navitas Group, a large stock-market listed education company, gives some insight into the economics of a higher education provider with cost structures uncomplicated by research. They show increasing profitability as campus size grows, due to marketing and administration costs being 'semi-fixed' and teaching costs being 'semi-variable'. It appears that their underlying costs per higher education student are between \$10,800 and \$12,600 a year. However these costs include royalties paid to public universities (some Navitas colleges are co-located with universities, and Navitas students articulate into the second year of a publicly-funded university course), so the underlying teaching costs may be lower.

Universities always claim to be under-funded, but it is difficult to evaluate whether or not 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 the problems are partly evidential – how should costs be calculated, and what assumptions should be made about reasonable costs? Current funding rates weaken the combined teaching-research academic model, and limit diversity in the publicly-funded higher education system. However, current funding rates are not causing an under-supply of higher education, the student experience appears to be improving, student employment outcomes are stable, and graduate income advantages are increasing (section 7).

5.1.4 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 above are not recommended internal funding rates. At least until the demand-driven funding system discussed in section 5.2.1 below, these rates were essentially used to calculate a block grant, a total sum of money paid to each university. With a block grant, universities can design internal funding systems reflecting their own costs and priorities. The federal funding system has no capacity to adjust per-student rates to institutional differences, but it can and does permit universities to make those adjustments in how they spend their money.

Despite obvious weaknesses in the way funding rates for Commonwealth-supported students are derived, universities tend to use these rates in their own internal budgets. Some disciplines or departments are allocated more money than they earn for the university. But when this occurs, they 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 are at risk of closure. So in practice Commonwealth-funding rates drive university behaviour more than is necessary in theory.

5.2 Distributing student places

A higher education system needs a system of distributing student places. Places have to be allocated to higher education providers, disciplines and students. The two broad theoretical models are central allocation and market distribution.

In a central allocation model, the government determines priorities and allocates the student places it funds accordingly. Priorities could be for particular disciplines, particular higher education providers, or particular types of students. While students cannot

be forced to take the places created under government-priority setting, the system limits their opportunities. People who want a university place eventually have to take what is available. Priority setting can be supported by student incentives, such as scholarships or lower fees.

In a market distribution model, the government does not set priorities. Higher education providers decide what courses they will offer students, and students decide whether or not to purchase 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 chapter 2 for student numbers).

Compared to a system of central allocation of student places, a market system gives students much more power. Higher education institutions have stronger incentives to respond to student preferences, and to concentrate on the quality of teaching. However, market systems depend on students paying full fees. This may reduce total demand for higher education, or lead to students not choosing courses that would provide broader social or economic benefits.¹⁰²

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 higher education generally or particular disciplines more financially attractive. However, higher education providers still have to compete for students. Voucher schemes

¹⁰² See Norton (2012a) for a detailed discussion of this argument.

may have literal vouchers – documents sent to prospective students that they can redeem at higher education providers. However, eligible students can usually be identified through alternative means, such as citizenship or prior academic results.

5.2.1 Distributing Commonwealth-supported places

Historically, Australia used a version of the central allocation system. From the mid-1970s, the Commonwealth Government distributed student places among public higher education providers. The government was not, however, an activist central planner. Within overall target enrolment levels and funding envelopes, universities had the most influence over what courses were offered. The government's main mechanism for steering the system was through funding new higher education places. The allocation of new places was sometimes very prescriptive, down to specific courses and campuses. However, new places were only ever a small percentage of total Commonwealth-supported places.

Central allocation meant that universities could plan around predictable public funding levels. This gave the system stability, but weakened competitive pressures. Universities had few financial incentives to attract additional students. For a few years in the mid-2000s, universities were penalised if they exceeded enrolment targets set out in funding agreements 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.

In 2009, the Government announced that it would phase in a 'demand-driven' funding system. For 2010 and 2011, universities

would be paid Commonwealth contributions up to 10 per cent more than the amount specified in the funding agreements (section 5.1.1 for per-student funding rates). For all additional Commonwealth-supported students, universities would be paid the student contribution amount. This policy change encouraged universities to enrol more domestic students. By 2011, some universities had enrolments exceeding their funding agreement target by more than 20 per cent.

In 2012 the new 'demand-driven' funding system commenced. It represented a major shift away from the central allocation model to the voucher model. Most caps on the number of Commonwealth-supported undergraduate places at public universities were lifted, with the exception of medical places. The enrolments in each public university, along with the system as a whole, could now move up and down in line with student demand.

The demand-driven system is not a full voucher system, as students who choose a NUHEP have no right to Commonwealth support (a limited number of Commonwealth-supported places have been allocated to NUHEPs). Nevertheless, the publicly-funded university system is now much more competitive. Student choices have real and major financial consequences for universities.

The demand-driven system substantially deregulates the undergraduate higher education market. However, the Government still has controls on Commonwealth-supported student numbers. It can cap how much funding any individual university can receive, provided it is not less than for the previous year. Two universities were capped in 2012. The Government still controls the number of Commonwealth-supported postgraduate

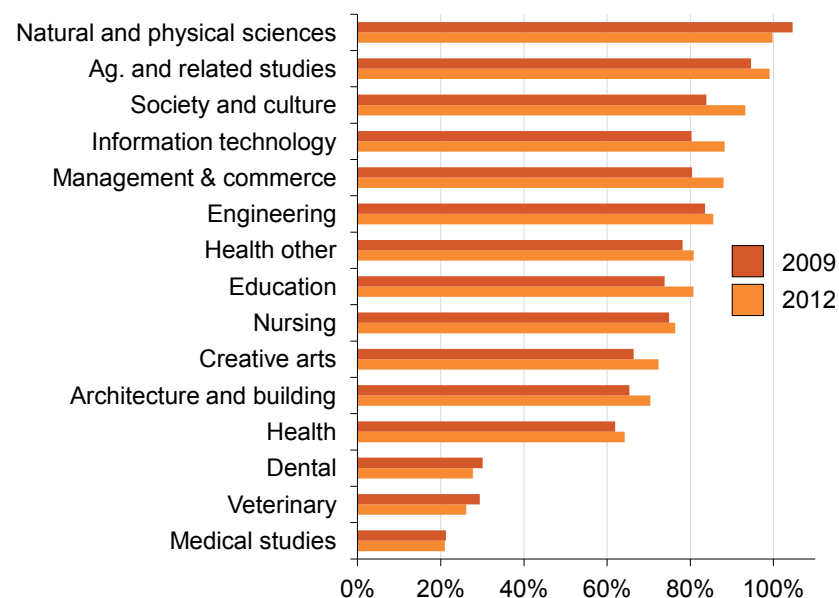
coursework and sub-bachelor diploma and associate degree places.

5.2.2 Operation of the demand-driven system

A demand-driven system should increase responsiveness to student preferences. At the field of study level, Australia has long had imbalances between demand and supply. Health places have been chronically under-supplied relative to student demand, particularly in medicine. By contrast, places in science courses have been chronically over-supplied relative to demand.

Since 2009 the system has become more responsive to student demand. Overall, the proportion of applicants who receive an offer has increased from 77 per cent to 81 per cent. Figure 21 shows that between 2009 and 2012 applicants became more likely to receive an offer that matched their highest preference field of study, though most applicants to high-prestige health courses are still rejected. This partly reflects a shortage of clinical training places in the health system, a problem that cannot be solved by higher education policy alone. The proportion of applicants who receive an offer for their highest preference course has also increased slightly, from 52 per to 54 per cent. This number is lower than figure 21 might suggest, because of second or lower preference offers in the same field of study as the first preference course. Overall, these results suggest that the demand-driven funding system is having the expected effects.

Figure 21: Field of study offer rates, 2009 & 2012



Note: Offer rates can exceed 100 per cent as applicants may receive offers for a second or lower preference.

Source: DIISRTE (2012p)

6. Higher education policymaking

Higher education policymaking has become increasingly centralised in Canberra. This chapter reviews the major higher education policymakers and the interest groups that try to influence policy.

6.1 The rise of Commonwealth authority

Australian higher education began as a state responsibility. Except in its territories, the Commonwealth Government had no constitutional power to establish a higher education institution. Prior to the *Australian National University Act* in 1946, this power had never been exercised. All other universities except one were created by state legislation (the Australian Catholic University was established under company law). There was no federal minister for education until 1966.

While the states had full responsibility for education in Australia's early decades, after World War II the Commonwealth slowly increased its policy involvement in higher education. A 1946 amendment to 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 20 years ago 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. Until recently the private higher education sector received no money from the Commonwealth, and so was free of Commonwealth control, other than general laws applying to all. The public universities could, in theory, decline a Commonwealth grant and its associated conditions. In practice, universities have generally accepted whatever funding conditions the Federal Government sets. This willingness by universities to accept conditions attached to grants allowed the Commonwealth to leverage its limited legal position into extensive control.

From the 1950s to the 2000s the Commonwealth bought power over existing higher education providers through conditional grants. However, it could not regulate the establishment of new higher education providers or the accreditation of courses. That remained a matter for the states. However, in the 2006 *WorkChoices* case the High Court took an expansive view of the Australian Constitution's corporations power. As higher education is largely delivered by organisations, including universities, that are legally corporations (as opposed to state government instrumentalities or partnerships), the Federal Government has now used the corporations power to take higher education accreditation and quality control from the states. The Tertiary Education Quality and Standards Agency (TEQSA) replaced the state higher education accreditation bodies in 2012.

The states still have university establishment acts on their statute books, and impose various reporting and accountability requirements on universities. In late 2012, the Victorian

Government legislated to change the membership of university councils, signalling an on-going interest in higher education policy. The states still have a legal right to be consulted about new higher education providers in their jurisdictions. They are still expected to fund special projects at universities within their borders. However, on the key higher education policy matters the states now have a minimal role.

TEQSA may be the first sign of a new higher education policymaking paradigm. The Commonwealth can mandate rather than buy compliance. It exposes all higher education institutions to Government control of their core academic activities. Private as well as public higher education institutions could find their fees regulated. At least for now, private higher education providers support TEQSA. They often found the state regulators unsatisfactory, and multi-state providers faced much regulatory duplication. A single regulator offers new efficiencies, but also new risks.

With all important aspects of higher education policy now set by the Commonwealth Government, the relevant ministers and departments are more critical than ever to the success of Australian higher education.

6.2 Commonwealth departments and agencies

6.2.1 The Department of Industry, Innovation, Science, Research and Tertiary Education

Higher education is primarily the responsibility of the Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE). The minister is Senator Chris Evans, who has been

tertiary education minister since September 2010, and acquired responsibility for research policy in December 2011. Before December 2011, higher education policy had been handled by the Department of Education, Employment and Workplace Relations (DEEWR) and research policy by the Department of Innovation, Industry, Science and Research (DIISR). Julia Gillard was the education minister before becoming Prime Minister in June 2010, and Senator Kim Carr was the minister responsible for research before being replaced by Evans.

Senator Evans inherited policy agendas from both his predecessors. The demand-driven funding system and TEQSA were both announced by Gillard in 2009. They were key recommendations of a review headed by former vice-chancellor Denise Bradley. The Bradley review reported in December 2008, and the Government responded in the *Transforming Australia's Higher Education System* policy statement of May 2009.¹⁰³ Evans received a commissioned report on funding, *Higher Education Base Funding Review: Final Report*, in late 2011.¹⁰⁴ However, in January 2013 he rejected its key recommendations.¹⁰⁵

Senator Carr oversaw the introduction of the Excellence in Research for Australia exercise, which measures research quality in Australian universities (section 8.2). He reformed and secured funding increases for research block grants (section 4.2.4). However, these funding increases were slowed down in the 2012-13 *Mid-Year Economic and Fiscal Outlook* statement, at a cost to

¹⁰³ DEEWR (2009)

¹⁰⁴ Lomax-Smith, *et al.* (2011)

¹⁰⁵ DIISRTE (2013)

universities of \$500 million.¹⁰⁶ Carr was the main supporter of 'mission-based compacts', agreements between each university and the Commonwealth Government that set out high-level and specific goals for each university across teaching, research, and innovation. For the most part, the compacts summarised existing university and government policies and targets.

In late 2012, the shape of Senator Evans' distinct contribution to higher education policy started to become clear. A National Research Investment Plan is likely to focus research funding on more specific national priorities.¹⁰⁷ Research impact, in addition to research excellence, may become a driver of research funding.¹⁰⁸

DIISRTE reunited higher education and research policy in the one department under the one minister, after four years of separation. However, for an external observer there is little sign yet of strong co-ordination between the two areas. There are no synergies in policies that fund excellence in research and student numbers in higher education. Funding teaching and research in ways that have nothing to do with each inevitably puts major strains on universities trying to co-produce teaching and research.

6.2.2 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. These standards cover higher

education provider registration, course accreditation, qualifications, teaching and learning, information, and where relevant, research.

A Higher Education Standards Panel appointed by the minister is responsible for developing and advising the minister on the content of the standards. Before making a standard, the minister needs to consult state education ministers, TEQSA, and other federal ministers (the research minister has responsibility for the research standard only). The Higher Education Standards Panel will review provider registration, course accreditation and qualification standards in 2013.

The concentration of power to set standards in the Commonwealth education minister is unprecedented in Australia. This education minister has more power over universities than any state education minister had prior to the TEQSA legislation, and without the jurisdictional constraints of the federal system.

6.2.3 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 standards created by the Higher Education Standards Panel. It registers higher education providers and approves courses offered by non-self-accrediting institutions (chapter 1). TEQSA has substantial operational independence from the relevant ministers for tertiary education and for research (currently the same person).

TEQSA's operational independence protects against political favours or disfavours to particular higher education providers. In that respect, it avoids the perceptions of unfair treatment of

¹⁰⁶ Treasury (2012)

¹⁰⁷ DIISRTE (2012b)

¹⁰⁸ Evans (2012)

particular higher education providers and their students created by funding policy (section 4.2).

6.2.4 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 4.2.4). They report to the research minister, Senator Evans, and the health minister, Tanya Plibersek, respectively.

The ARC and NHMRC both work within broad policy frameworks established by the Government, with priorities set by the relevant ministers. However, specific research grants are awarded independently of the minister. The ARC and NHMRC both use systems of peer review to determine which applications are successful. This respects the culture of universities (section 1.3).

The media sometimes question ARC-funded projects with seemingly obscure, trivial or politicised topics. Academics sometimes claim that the peer review process leads to peers favouring each other's work (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, resources are wasted preparing and assessing applications that are rejected.

In 2013 the ARC and NHMRC will investigate mechanisms to improve the current research grant system. They will consider the time taken to complete applications, and the possibility of longer-term grants. They will also look at giving grants direct to

individuals and teams, rather than funding specific projects.¹⁰⁹

6.2.5 The Chief Scientist

The Chief Scientist for Australia advises the Prime Minister and other ministers on science, technology and innovation. The current Chief Scientist, Professor Ian Chubb, has given the office new profile and influence.

In the 2012 Budget the Government announced a new, \$54 million program focussing on maths and science, including in teacher training at university in response to the Chief Scientist's *Mathematics, Engineering and Science in the National Interest* report.¹¹⁰

The Chief Scientist also chairs the Australian Research Committee formed in 2012 and comprising senior officials, experts and research sector representatives. The committee will advise government on developing strategic research priorities, the measurement of research impact and on developing a set of research investment principles.

6.2.6 Department of Immigration and Citizenship

The Department of Immigration and Citizenship (DIAC) has a major influence on Australian higher education. It controls eligibility for student visas, and the post-study temporary and permanent migration programs that attract international students

¹⁰⁹ DIISRTE (2012b)

¹¹⁰ OCS (2012)

to Australia. The current minister is Chris Bowen (who replaced Chris Evans).

From August 2009, DIAC made several changes to student visa requirements and to post-study migration rights. These changes weakened the relationship between studying in Australia and gaining permanent residency.¹¹¹ They included stronger measures to identify fraud in student visa applications, increasing the minimum amount of money required for living expenses and providing clearer guidelines for when a student's visa may be cancelled if they defer or cancel their studies.¹¹²

International students had been migrating to Australia by taking courses related to occupations on the Migrant Occupations in Demand List (MODL). Such students did not need to work in these occupations to obtain permanent residence after completing their courses. The MODL was abolished in 2009. These changes contributed to weakening demand from international students (box 2, chapter 2).

New migration rules for international students were announced during 2012. Students who applied for a visa after 5 November 2011 have an automatic right to work for a period following completion of their degree. This ranges from two to four years depending on the qualification.¹¹³ Before this period ends, they must apply for a further visa such as an independent skilled

migration visa or employer sponsorship visa if they wish to remain in Australia.¹¹⁴

Students who apply for sponsored visas must work in a field listed in the Consolidated Sponsored Occupation List (CSOL) but need not have gained their qualification in Australia.¹¹⁵ Employers, however, must demonstrate their inability to appoint a suitably qualified Australian applicant.

Students wishing to apply for a skilled visa without sponsorship must be invited to apply, have both skills and qualifications listed on the skilled occupation list and satisfy a points test.¹¹⁶ While it is not necessary to have obtained qualifications in Australia, the points test favours people who have Australian qualifications, or have undertaken several years of skilled employment in Australia.

6.3 Higher education interest groups

There are higher education interest groups representing universities, private higher education providers, higher education staff, and students.

¹¹¹ Knight, 2011, p 12 cited in ACER (2012), p 10

¹¹² DIAC (2009)

¹¹³ DIAC (2012a)

¹¹⁴ Ibid.

¹¹⁵ Examples of sponsored visas are the Temporary Work (Skilled) visa (subclass 457), Employer Nomination Scheme (subclass 186) or Regional Sponsored Migration Scheme visa (subclass 187).

¹¹⁶ 'Without sponsorship' means not sponsored by an employer, state or territory, or a family member. For example a Skilled Independent (subclass 189) visa. DIAC (2012b)

6.3.1 University interest groups

The oldest university interest group is Universities Australia, formerly known as the Australian Vice-Chancellors' Committee (AVCC). All 39 operating full universities 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. A number of 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. Full membership lists of the university interest groups appear in Appendix A.

6.3.2 Private higher education interest groups

The largest private higher education interest group is the Australian Council for Private Education and Training. Its members are involved in all levels of post-compulsory education. The smaller Council of Private Higher Education represents only higher education providers. Both organisations have lobbied for more equal treatment of public and private higher education provision.

6.3.3 Staff and student interest groups

The major union representing university staff, the National

Tertiary Education Union (NTEU), has about 25,000 members. It has been a consistent advocate for public funding of higher education.

The National Union of Students (NUS) is a peak body representing other student organisations. Its prominence declined during the 2000s, partly due to wide ideological differences with a Liberal Government and 'voluntary student unionism' reducing its income. However, a more sympathetic Labor Government from late 2007 improved NUS's fortunes. Student amenities fees were reinstated in 2012, and new legal obligations on universities to provide student services and consult with student groups were created.

The Council of Australian Postgraduate Associations (CAPA) is another student peak body, representing campus-based postgraduate organisations.

The Council of International Students Australia (CISA) represents international students across the post-compulsory school sector. It was formed in 2010 after the collapse of an earlier body representing international students. Unlike other higher education interest groups, it is active on state-level issues including public transport concessions, violence against international students, and access to public hospitals.

7. How well is the higher education system doing? Benefits for students

This chapter examines how well the higher education system is serving the needs of students. Are students engaged with their education and satisfied with teaching? Do they get good employment outcomes, income and job satisfaction?

7.1 The educational experience

7.1.1 Academic standards

Many academics believe that ‘academic standards’ are in decline – that courses are being ‘dumbed down’, or that it is becoming easier to pass or get high grades. In a recent survey, just under half of academics surveyed agreed with the proposition that “academic standards at my university aren’t what they used to be”.¹¹⁷ Falling admission standards, poor English-language skills among international students, and students not putting in the necessary work are among the reasons given by academics for this perceived decline.¹¹⁸ Some graduates report that challenging students to achieve high academic standards is an area in which universities could do better.¹¹⁹

There is little published non-anecdotal evidence on academic standards. In schools, published curricula and more recently national and international tests track what students are taught, and how well they have learnt it. Higher education is much more decentralised than school education, leaving us without key

information needed to assess trends in academic standards, or to compare them between institutions. There is an international project that may partly remedy this situation. The OECD-backed Assessment of Higher Education Learning Outcomes (AHELO) project is aimed at providing comparable international higher education test results. A feasibility study including 17 countries has incorporated tests of generic skills, along with specific tests for engineering and economics students. Australian universities participated in the engineering component. A report on the study was completed in December 2012.¹²⁰ One obstacle to AHELO’s success will be testing a sufficient number of students to make valid cross-country comparisons. If implementation problems are overcome, AHELO could provide information about how Australian higher education institutions compare over time, with each other, and with other countries.

Until then, we need to use proxy indicators to examine academic standards.

Figure 22 shows pass rates for commencing domestic and international students. If academic standards were dropping significantly across the higher education sector, all other things being equal we would expect to see pass rates going up. Easier courses or softer marking would both make failing less likely.

For domestic commencing students around 85 per cent of subjects attempted each year are passed. Fluctuations seem associated with the size of the commencing student intake. When

¹¹⁷ Bexley, *et al.* (2011), p 30

¹¹⁸ For example, Economic Society of Australia (2004)

¹¹⁹ Coates and Edwards (2009), p 52

¹²⁰ Tremblay, *et al.* (2012)

commencing student numbers fell between 2001 and 2004, the pass rate went up. As commencing enrolments recovered in the late 2000s, pass rates went down. 2009 is the main exception to the pattern; it was the start of an enrolment boom but the pass rate increased.¹²¹ This exception aside, the pattern is consistent with the prior academic ability of commencing students explaining fluctuations in pass rates. When they take more students, universities reduce entry requirements. These weaker students are more likely to fail, and so reduce the pass rate.

While the domestic commencing student pass rates provide no evidence that subjects are getting easier or marking is getting softer, figure 22 shows a steady increase in pass rates for international students between 2005 and 2010, with a small decline in 2011. In 2010, international commencing students were for the first time more likely to pass their subjects than domestic students.

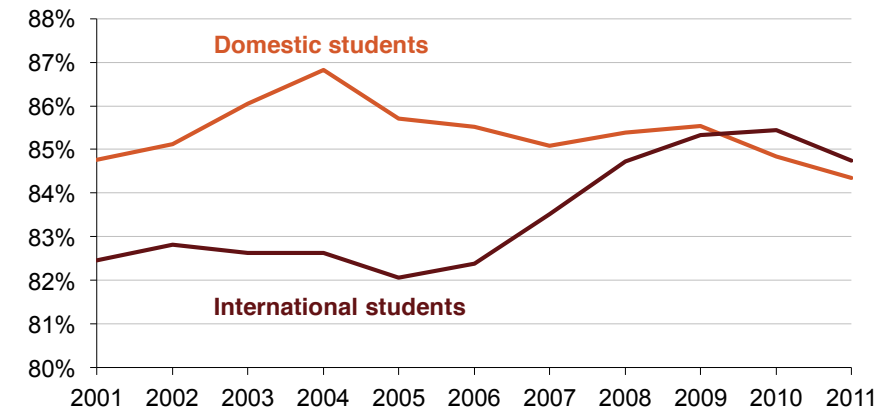
We know that international students work harder than domestic students, which provides one explanation for superior academic performance.¹²² However, this is unlikely to explain a trend. Examining the pass rate data in more detail shows stable rates at most universities, but large increases at others, including some that previously had very low pass rates.¹²³ Possibly, English-language requirements for incoming students have been increased at those universities and, as with domestic students, international student pass rates are sensitive to the academic capacity of the incoming classes.

¹²¹ Over 2001-11, there is a correlation of close to -0.5 between the number of commencing domestic undergraduate students and the pass rate.

¹²² Edwards (2008)

¹²³ DIISRTE (2012m)

Figure 22: Pass rates for commencing domestic and international students



Source: DIISRTE (2012m)

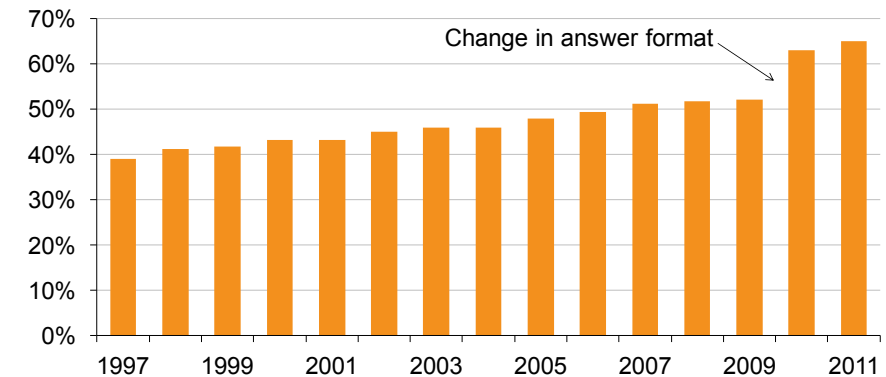
7.2 Student engagement and satisfaction

Since the early 1990s, a course experience questionnaire (CEQ) has been sent to completing students at Australian universities. Core questions cover teaching, generic skills and overall satisfaction. In later years, universities could choose to ask their students questions on goals and standards, workload, assessment, intellectual motivation, student support, graduate qualities, learning resources, and the learning community. As the survey is conducted at the end of the course it is necessarily an overview and an averaging of many different subjects. Universities have their own surveys of individual subjects.

The initial CEQ surveys revealed low levels of satisfaction with teaching. However, by the mid-1990s a positive trend had started. In a slow but steady way, 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. Figure 23 shows average responses to these questions from completing bachelor-degree students combined into a 'good teaching scale'. Though the trend is consistently towards more satisfaction, it was not until 2007 that a majority of completing students were satisfied. In 2010, the good teaching scale result jumped from 52 per cent to 62 per cent, though a change in the response options is likely to be a major factor explaining this increase.¹²⁴ Results from the good teaching scale continued their upward trend between 2010 and 2011.

¹²⁴ 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.

Figure 23: Mean student satisfaction with teaching



Source: GCA (1997-2012)

The CEQ results suggest that satisfaction with teaching is improving, but that there is significant room for improvement. Substantial minorities of students are still negative or unenthusiastic about their interaction with teaching staff. However, overall satisfaction as measured by responses to the proposition 'overall I was satisfied with the quality of this course' has consistently been higher than the good teaching scale. It had been around 70 per cent in the late 2000s, and was 82 per cent in 2011.

The CEQ contacts graduates shortly after course completion. The 2008 Graduate Pathways Survey recorded longer-term perceptions of teaching quality by contacting graduates five years after completion. This survey lets us examine how graduates perceive their time at university after applying what they learnt in work or further study. It asked several questions related to learning, including acquiring job or work-related skills and

knowledge, thinking skills, and analysing quantitative problems. On a 0 to 100 scale, the average score was 61.¹²⁵ This is consistent with the CEQ's findings. The educational performance of Australian universities is broadly satisfactory, but well short of outstanding. The Graduate Pathways Survey also asked about specific areas for improvement. The top areas were related to better preparing students for life after study, including use of real-life case studies, more placements and internships, and ensuring staff have current workplace knowledge and experience.

In recent years, the Australasian Survey of Student Engagement (AUSSE) has collected the views of first and later-year students. AUSSE is a rich source of information about the student experience at Australian and New Zealand higher education institutions. It shares questions with the American National Survey of Student Engagement (NSSE), allowing international comparisons.

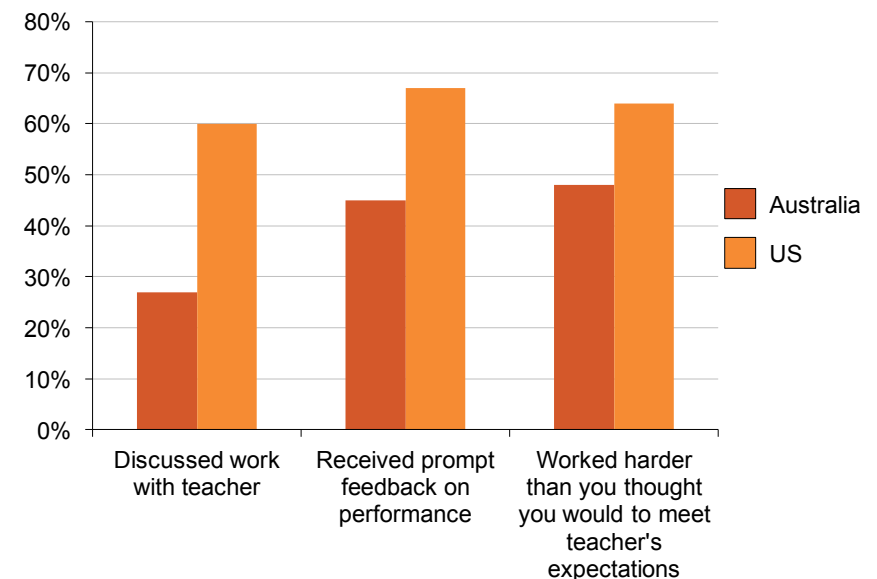
AUSSE/NSSE comparisons show some significant differences. Australian higher education students and staff are typically substantially less engaged with each other than their American counterparts. As shown in figure 24, Australian students report much less frequent communication with staff than American students. Australian students are much less likely to get prompt feedback on their work, and are substantially less likely to work hard to meet their teachers' expectations. American research suggests students learn more with approachable academics who have high expectations and standards.¹²⁶

¹²⁵ Coates and Edwards (2009), p 45

¹²⁶ Arum and Roksa (2011), p 93

As observed in section 7.1.1, we cannot say with certainty that Australian students learn less than students in other countries. However, AUSSE/NSSE comparisons suggest that American higher education institutions typically create better learning environments than their Australian counterparts, and that students are more engaged in productive educational experiences. On this basis, it would not be surprising if AHELO tests show that American students get higher average scores than Australian students.

Figure 24: AUSSE/NSSE student survey results (2011), students responding 'often' or 'very often'



Source: ACER (2012)

Australian universities argue that they have less funding per student than American universities. This translates into higher student:staff ratios in Australian universities: around 20 students for every staff member in recent years, compared to around 15 students per staff member in American public universities.¹²⁷ Australian academics have to divide their time between more students than American academics.

Funding and staffing differences may explain some of the Australia-US differences in interactions between students and staff. However, different attitudes and practices are also likely to be significant. An international survey of academics asked them about their relative preference for teaching or research. Of the 18 countries surveyed, American academics had the highest preference for teaching, and Australian academics had the fourth lowest.¹²⁸ Given the dominance of the teaching-research employment model in Australia, this is not very surprising. Academics are employed more for their research ability than their teaching ability, and this is reflected in their work preferences.

Though academics prefer research, they can be encouraged to improve their teaching. The CEQ results suggest that this is exactly what happened. Despite student:staff ratios increasing by about five students per academic since the mid-1990s, student satisfaction increased. The improvements were largest on the questions about time-intensive activities, such as giving feedback and commenting on work.

¹²⁷ University of Melbourne (2011), p 9-10

¹²⁸ Coates, *et al.* (2009), esp. p 21-22

In 2012, the *My University* website was launched, modelled on the *My School* website, and provides potential higher education students with data on institutional student satisfaction. Combined with the demand-driven system, this may further increase pressure on universities to improve their teaching performance.

7.3 Employment outcomes

We cannot directly measure trends in graduate quality. However, the value employers place on graduates is a potential guide. If employers become less willing to hire graduates, or less willing to pay them higher wages than non-graduates, then this might be a sign of deteriorating quality.

7.3.1 Jobs

For most students, employment is a factor in their decision to enrol in a higher education course. For bachelor-degree students, about three-quarters give a job-related consideration as the main reason for study.¹²⁹ Of course this means that around a quarter of students enrol for some other main reason.

Though employment is not always the main reason for studying, a university qualification provides good access to jobs. One benefit of a degree is insurance against unemployment. In 2012, compared to the Australian population as a whole graduates were less likely to be out of the workforce, and less likely to be unemployed if in the workforce (table 8). However, upper-level vocational qualifications (certificate III/IV in the Australian

¹²⁹ ABS (2010), table 5

Qualifications Framework, section 1.1) also provide good employment outcomes. Section 7.3.2 reports on graduate income.

Being able to get any job is insurance against very low income. But university education also promises access to jobs requiring higher levels of cognitive and, sometimes, technical skills. The Australian Bureau of Statistics (ABS) classifies most managerial and professional jobs as requiring a “level of skill commensurate with a bachelor degree or higher qualification”.¹³⁰ In 2012, 72 per cent of university graduates in work had jobs classified as managerial or professional.¹³¹ The 2011 census shows that that the proportion of graduates in these jobs varies significantly between disciplines (figure 25). People with bachelor degrees in health fields, in education and in law all have rates of professional and managerial employment above 80 per cent. People with bachelor degrees in humanities, science, creative arts, management and commerce or agriculture all have professional or managerial employment rates below two-thirds.

Table 8: Workforce risks 2012

	Graduate	Certificate III/IV	Australian population
Unemployment rate	2.7 %	4.4 %	4.8%
Not in labour force	13.4 %	12.6 %	22%

Note: Graduate includes bachelor degree and above.

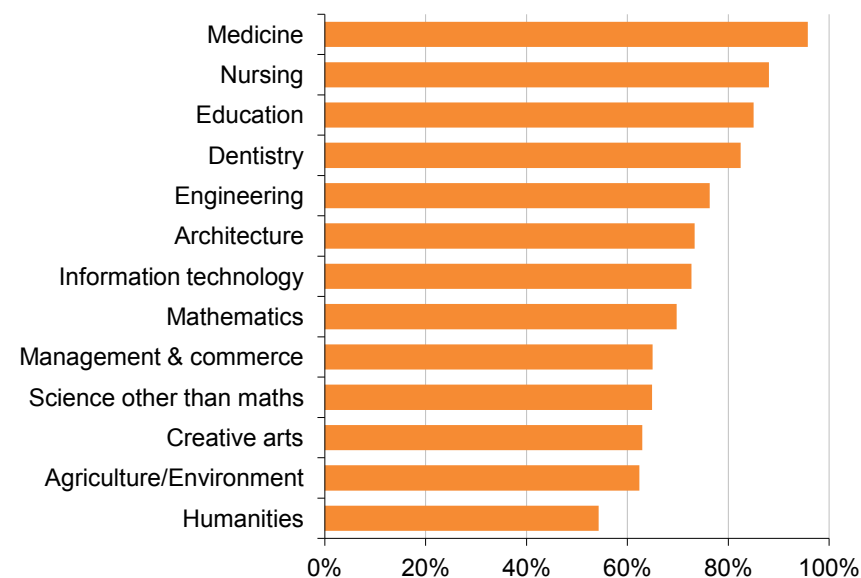
Source: ABS (2012b), table 10. The ABS Education and Work publication records slightly lower overall unemployment figures than other ABS surveys.

¹³⁰ ABS (2009)

¹³¹ ABS (2012b), table 11

In recent years, the Commonwealth Government and the Chief Scientist have encouraged students to take science degrees. Though people with science PhDs have excellent employment outcomes, bachelor-level science qualifications appear over-supplied relative to labour market needs.

Figure 25: Rates of professional and managerial employment by bachelor degree, 2011



Note: Excludes graduates not in work and graduates currently enrolled in education.

Source: Grattan calculations from 2011 Census using ABS TableBuilder

It can take graduates time to find jobs matching their skills. The 2011 census shows that about 60 per cent of employed 22-year old graduates are in managerial and professional jobs, with the 72 per cent mark reached by age 29. Comparison with the 2006 census shows a small decrease in professional and managerial employment rates for graduates in their twenties.¹³²

Comparing graduate employment outcomes over time is complicated. Occupations change in the level of skill and qualifications required. Partly as a result, ABS job classification systems also change. Labour market and educational data are not collected and classified now in the same ways that they were in the past. With these caveats, the boom in university education seems to have largely been matched by changes in the labour market. In 1981, 8 per cent of all employed persons had university degrees, and 77 per cent of them were in jobs described as 'professional, technical etc' or 'administrative, executive and managerial'.¹³³ Despite the share of the workforce with university qualifications having more than tripled to 27 per cent by 2011, the proportion of graduates in 'matched' jobs has declined only slightly in 30 years.

7.3.2 Income

Every study of graduate incomes finds that, on average, graduates earn more than non-graduates. This is partly because they are more likely to have jobs, and partly because the jobs they have tend to be high-paying. Higher education itself does not

necessarily cause these income differences. Universities typically select students based on prior academic achievement, which in turn reflects their intelligence, their school education, and personal characteristics such as effort and persistence. Employers tend to reward these attributes with or without higher education.¹³⁴ Cultural norms, political pressures and market forces also influence pay, independently of any changes in the initial ability of graduates or the quality of higher education.

The financial benefits of higher education can be analysed in different ways. One method is to calculate a 'graduate premium'. The graduate premium tells us how much more graduates earn compared to some other group. This can be done at a single point in time, or estimated over time.¹³⁵ Over a career, higher pay and labour force participation contribute to substantial earnings differences between graduates and non-graduates.

According to analysis of the 2011 Australian census, the median male bachelor-degree holder has lifetime additional earnings of \$1.4 million, compared to the median male who did no further education after Year 12. For women, the estimated lifetime earnings premium is just under \$1 million, compared to the median female who did no further education after Year 12. However, the differences are narrowed if we deduct the costs of education and income tax to \$900,000 for men and \$700,000 for women (figure 26). Each gender increased earnings by about \$80,000 between 2006 and 2011. This analysis has no adjustment for ability other than restricting the comparison to

¹³² Grattan analysis based on ABS TableBuilder application. Analysis was restricted to bachelor-degree graduates not currently enrolled in education.

¹³³ ABS (1982)

¹³⁴ See the useful discussion of ability bias in Leigh (2008).

¹³⁵ A point in time as of 2009, based on ABS (2010), was reported in Norton (2012b), p 69.

people who finished school. It is therefore likely to be an upper estimate of the private financial benefits caused by higher education.

Graduate premiums differ significantly between disciplines, as seen in figure 27. The most lucrative disciplines for both genders, after income tax and the expenses of education, are medicine, dentistry and law.

Figure 26: Median net earnings of bachelor-degree graduates compared to Year 12, 2011

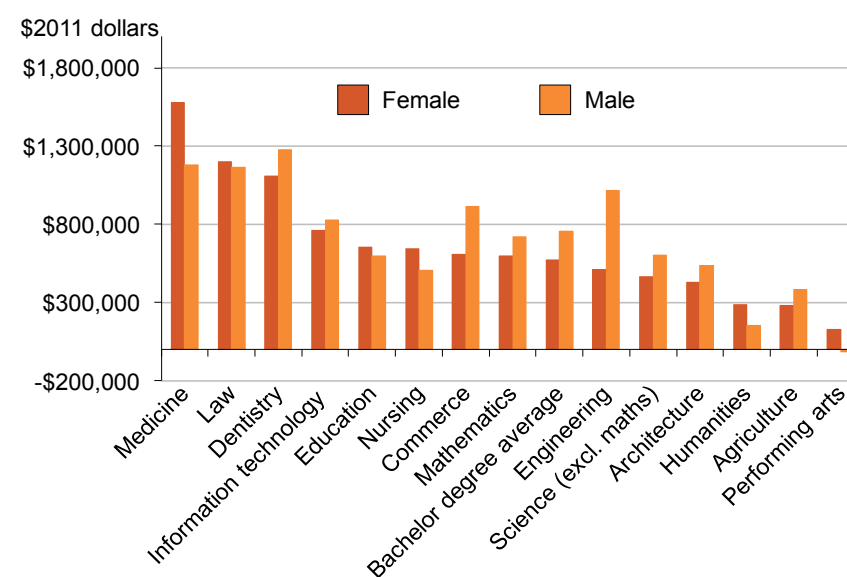


Note: Lifetime earnings are calculated by 'aging' people through the census from age 18 to 65. For example, someone aged 25 at the time of the 2011 census is assumed to earn at age 30 what a 30 year old earned in 2011. Net earnings are calculated by deducting student contribution repayments, direct study costs, income tax, and the Medicare levy. No discount for ability.

Source: Grattan calculations based on ABS Census.

For men, engineering and commerce also provide net earnings exceeding \$1 million in the middle of the income distribution. For women, education and nursing degrees offer good earnings prospects relative to other qualifications, except for medicine, dentistry and law. Men with education and nursing degrees tend to earn less than other males with most other qualifications. Financially, the worst higher education option for either gender is a degree in the performing arts.

Figure 27: Median graduate earnings premium compared to Year 12, by discipline, 2011



Note: Earnings for medicine, and for male graduates in dentistry, law, engineering and management and commerce are all under-stated due to the top census income category of \$2,000 a week or more. Male bachelor graduate have a higher Year 12 comparison point than women, see figure 26.

Source: Grattan calculations based on ABS Census.

Differences in degrees taken partly explain the income gender gap seen in figure 26. Males outnumber females in the degrees associated with high incomes, and females outnumber males in degrees associated with low incomes.

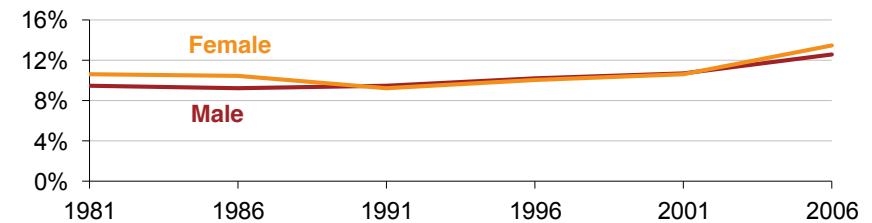
The graduate premium is the easiest and most intuitive way of expressing the earnings advantage of a higher education qualification. Another method is to use cost and income data to calculate 'rates of return' on higher education investment. Rates of return can be used to compare higher education with other investments, and the benefits of higher education at different times.¹³⁶

The Australian Bureau of Statistics used census data to calculate rates of return on higher education investment between 1981 and 2006. Figure 28 shows the post-tax returns on a bachelor degree compared to someone whose highest qualification was to complete Year 12, examining employed people only. The main cost is being out of the labour force while studying. In later years, the costs of HECS and student contributions are included. Despite increases in direct higher education costs, the rate of return was largely stable over the twenty years 1981-2006, with an increase in 2006.

A 2012 Grattan report, *Graduate Winners*, used a similar methodology to calculate rates of return using the 2006 census. Analysing persons rather than just employed people, it found a rate of return for male bachelor graduates of 14 per cent, and 16 per cent for female bachelor graduates.

¹³⁶ See Weidmann and Norton (2012a) p 14-15 for a more detailed explanation.

Figure 28: Post-tax rates of return to higher education, 1981-2006 (employees only)



Note: It shows the figures for employees only; the bachelor rate of return for all persons is higher due to labour force participation differences (section 7.3.1).

Source: Based on Wei (2010)

The rates are higher than for figure 28 because the calculation includes two things that benefit graduates financially: they are more likely to have a job, and typically they earn more in their job. Replicating this analysis on the 2011 census shows that rates of return on higher education investment have increased to 17 per cent for male graduates and 19 per cent for female graduates.

Why do men do better on the graduate premium analysis, and women on the rate of return analysis? The main reason is that while female graduates earn less than male graduates, here we are comparing each group with people of their own gender but less education. Because men with a Year 12-only education earn a lot more than equivalently-educated women, male graduates have to earn more than women to benefit financially from a degree.

Arguably, the rate of return analysis provides the better guide to actual behaviour. In making educational and career decisions, men and women consider what they see as the realistic options

for someone of their own gender. Men are more likely to enter occupations that involve using machinery, unpleasant working conditions, or physical strength. So in practice young men have a wider range than young women of reasonably-well paying alternatives to higher education. Consistent with these wider choices, below an ATAR of 70 women have considerably higher university application rates than men.¹³⁷

At least to 2011, the income evidence suggests that higher education continues to provide good financial benefits. Compared to stopping education at Year 12, the financial benefits of higher education are increasing rather than decreasing. However, young people whose school results will not give them access to higher-paying professions may be better off pursuing vocational education.

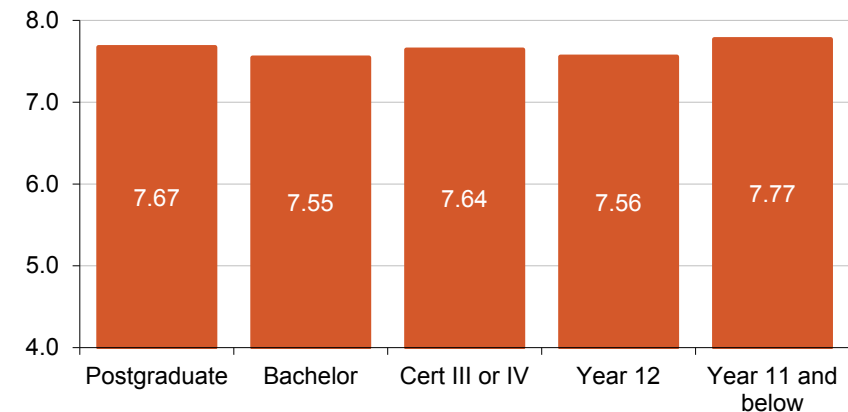
7.3.3 Job satisfaction

By objective standards, most graduates get good jobs that pay well compared to less educated workers. But this does not translate into higher overall job satisfaction. Figure 29 shows job satisfaction by education level in the HILDA survey on a 0 to 10 scale, with bachelor-degree graduates rating their job satisfaction at an average 7.55. While most graduates (like most workers) are satisfied with their jobs, this is a slightly lower level of satisfaction than people with other qualification levels. However, graduates

are more satisfied with their colleagues and managers than people with less education.¹³⁸

The Graduate Pathways Survey found that graduates who had received higher grades at university were more satisfied with their work five years later. There were also significant differences in work satisfaction between fields of study. Graduates with qualifications in education or health were most satisfied with their work, and those with degrees in the creative arts or science were the least satisfied with their work.¹³⁹ This may reflect the professional and managerial employment outcomes reported in section 7.3.1.

Figure 29: Overall job satisfaction by highest level of education



Question: "All things considered, how satisfied are you with your job?" on a scale of 0 to 10, with 0 being 'totally dissatisfied' and 10 being 'totally satisfied'.

Source: HILDA (2010)

¹³⁷ DEEWR (2011d), p 54. The different decisions made by young men and women seem to be good for them, at least in the medium term. See Karmel and Liu (2011).

¹³⁸ Savage and Norton (2012), p 51

¹³⁹ Coates and Edwards (2009), p 84-86

8. How well is the higher education system doing? Benefits for employers and the public

After discussing how well the higher education system is meeting the needs of students, this chapter looks at how well it meets the needs of the country. Are employers' skills needs met? Is university research output meeting expectations? How does the public perceive our higher education sector?

8.1 Meeting skills needs

One justification for government involvement in higher education is that it is necessary to meet the economy's skills needs. Yet skills have not been a systematic focus of higher education policy. In the pre-2012 system Commonwealth-supported places were only sometimes allocated in response to employer complaints about shortages of particular skills. Similarly, prices of Commonwealth-supported places have only sometimes been set to promote demand – for example nursing and teaching between 2005 and 2009, and science and maths between 2009 and 2012. But these were *ad hoc* measures, with the bulk of university places distributed according to historical allocations, rather than student or labour market demand.

Any judgement on the higher education system's performance in responding to skills needs requires some qualification. Predicting future skills needs is inherently difficult. Labour market demand predictions by economic modellers can be hopelessly wrong.¹⁴⁰ Labour supply is also hard to forecast. Graduates enter and leave Australia, change careers from the one they originally trained for,

exit the labour force temporarily or permanently, and work varying numbers of hours per week. Even a higher education system that had skills needs as a priority could probably not avoid all skills shortages.

The main available measure of skills shortages is an employer survey conducted by the Department of Education, Employment and Workplace Relations (DEEWR). An occupation is deemed to be showing skills shortages if employers cannot fill vacancies, or have considerable difficulty filling vacancies, at current pay and condition levels, in reasonably accessible locations. This is not the same as an absolute skills shortage; appropriately-skilled people may exist but prefer other work. The education system is not responsible for the unwillingness of employers to offer jobs at wages that attract suitable applicants.

The DEEWR skills shortage list since 1986 shows that 55 managerial or professional occupations, of the type typically regarded by the ABS as requiring a university qualification of equivalent experience, have had reported skills shortages at some time. In the latest ABS occupational list, there are just over 400 different managerial and professional occupations. DEEWR may not have investigated all occupations, but it appears that in the vast majority of professional and managerial occupations we have enough graduates.

However, in 24 mostly professional occupations DEEWR's skills shortages list identifies persistent employer difficulties in finding appropriate staff. Table 9 shows occupations that have appeared

¹⁴⁰ For examples, see Norton (2009), p 22.

on the skills shortages list in at least five of the last 12 years. It is dominated by occupations needing qualifications in health or engineering. In pharmacy, nursing, civil engineering and mining engineering new graduates are also often in high demand.¹⁴¹ This suggests that the supply of new graduates may be too low. In childcare and school occupations, inadequate salaries are likely to be a larger issue than any dysfunction in the higher education system.

Figure 30 shows that after 2004 the higher education system started responding to skills needs. Health courses in particular have boomed, adding more than 16,000 annual domestic commencements by 2011. Engineering commencing students started to increase in 2005, in line with the skills shortages that emerge in the middle of the last decade. With the exception of architecture and creative arts, most other fields of study had stable or declining commencing students in the 2000s until an enrolment boom that began in 2009.

Health and engineering courses were deliberately promoted by Government policy, especially between 2004 and 2008. Figure 30 suggests that without new centrally-allocated places before that time the universities protected health courses from cuts in student numbers, but did not respond strongly to skills shortages.

¹⁴¹ As measured by more than 90% of graduates looking for full-time work having found it 4 months after completion. On average, around 20% of new graduates are still looking for full-time work at this time: GCA (2012a).

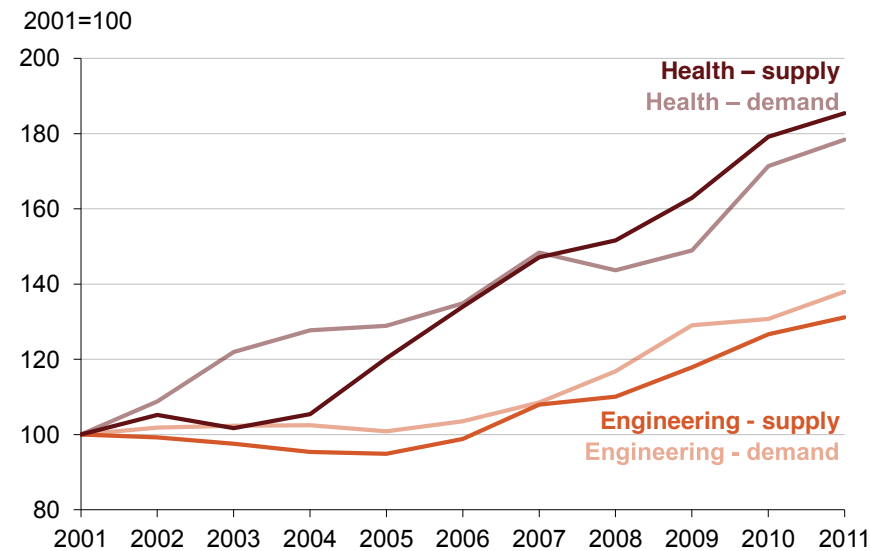
Table 9: Skills shortages by occupation

	2001	02	03	04	05	06	07	08	09	10	11	12
Dental specialist			●	●	●	●	●	●	●			
Dentist			●	●	●	●	●	●	●		●	●
Hospital pharmacist	●	●	●	●	●	●	●	●				
Retail pharmacist	●	●	●	●	●	●	●	●				
Med. diagnostic radiographer	●	●	●	●	●	●	●	●	●	●		
Med. radiation therapist	●	●	●	●	●		●			●		
Midwife	●	●	●	●	●	●	●	●	●	●	●	●
Occupational therapist		●	●	●	●	●	●	●	●			●
Physiotherapist	●	●	●	●	●	●	●	●	●	●	●	●
Podiatrist				●	●	●	●	●	●	●	●	
Registered nurse	●	●	●	●	●	●	●	●	●	●	●	●
Sonographer	●	●	●	●	●	●	●	●	●	●	●	●
Speech pathologist			●	●	●	●	●	●	●		●	
Chemical engineer					●	●	●	●	●		●	●
Civil engineer			●	●	●	●	●	●	●	●	●	●
Electrical engineer					●	●	●	●	●	●	●	●
Geologist					●	●	●	●		●	●	●
Mining engineer					●	●	●	●	●	●	●	●
Quantity surveyor						●	●	●	●	●	●	
Surveyor						●	●	●	●	●	●	●
Accountant	●	●		●	●	●	●	●				
Child care centre manager	●	●	●	●	●	●	●	●	●	●	●	●
Secondary teacher – maths	●	●	●	●	●	●	●	●	●	●	●	
Secondary teacher – life sciences		●	●	●	●	●	●	●	●	●		

● Indicates that employers reported skills shortages

Sources: DEEWR (2012c); DEEWR (2011c)

Figure 30: Growth in domestic undergraduate demand and supply 2001-2011



Note: The numbers are scaled to a base of 100 in 2001 to show trends. The demand time series uses the concept of 'eligible applicants' which does not count applicants with low ATARs.

Sources: DIISRTE (2012a) DEEWR (2011d)

From 2012, demand-driven public funding will be the principal mechanism for distributing student places between disciplines (section 5.2.1). As shown in figure 30, trends in student preferences over the last decade matched the main skills shortage areas. Demand for health and engineering courses grew more quickly than demand for other degrees. For health courses particularly, demand shows a much stronger and earlier response to skills shortages than the supply decisions evident in figure 30.

Supply has broadly responded to demand since 2007. While 2012 demand data trends cannot be shown in Figure 30 due to a change in the way applicants are counted, 2012 was another year of above-average growth in applications for health and engineering. Figure 30 gives us reason to believe that the demand-driven system can deliver on skills needs.

8.1.1 Graduate soft skills

For some occupations, skills shortages exist alongside a pool of relevantly-qualified graduates struggling to find full-time work. Some lack 'soft skills': personal attributes that help them work effectively.

Each year, Graduate Careers Australia surveys graduate employers about their recruitment intentions and the quality of graduate applicants. In these surveys, 'poor or inappropriate academic qualifications or results' consistently ranks fairly low as an issue in graduate hiring (in 2011, seventh of nine possible reasons). This suggests that on core academic matters, higher education institutions are doing reasonably well. The biggest issues for employers are interpersonal and communication skills, attitude and work ethic, and motivation. In 2011, around a quarter of employers reported that they would have recruited more graduates had a larger number of better candidates been available.¹⁴² Universities often have lists of 'graduate attributes' that include non-academic personal traits attractive to employers. Yet it is not clear how well integrated these are into coursework and other aspects of university life.

¹⁴² GCA (2012b)

8.2 Research performance

As shown in section 3.3, the absolute 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 increased from around 1.2 per year in 1997 to around 1.9 a year in the years since 2005.¹⁴³ However, this is not a measure of research quality or significance. Because publication numbers contribute to the promotion prospects of academics and to university research funding, some people claim that the system encourages quantity over relevance or quality.

The trend towards applied research aimed at practical discoveries (section 3.2) does not necessarily mean research is interesting or useful. DIISTRE recently completed a research impact feasibility study on evaluating the impact and wider benefits of publicly-funded research. The *Excellence in Innovation for Australia* trial conducted by the Australian Technology Network of Universities and the Group of Eight also showed how research impact could be evaluated.¹⁴⁴ The Australian Research Committee will develop research impact measures, which the Government says will complement the assessment of research excellence.¹⁴⁵ Though the *Excellence in Innovation for Australia* report identified some high impact research using a case study approach, sector-wide impact indicators are still some time away.

While impact indicators are still in development, extensive work has been done on measuring research excellence. In late 2012, the results of the second national Australian research quality assessment were released. In the Excellence in Research for Australia (ERA) exercise, quality was assessed by field of research. Quality indicators included citations (a measure of whether other academics find the research relevant), peer review (other academics assessing the quality of work) and the level of grant income derived from a peer review process. The ERA also looked at indicators of research volume and activity, indicators of research application, and indicators of recognition (for example, a fellowship in a learned academy or editing a prestigious journal).

Each field of research in each university where it met a minimum threshold of outputs was rated from one to five. Ratings one and two indicated that research performance in that field was 'below world standard'. Rating three indicated average performance at world standard. Rating four was above world standard, and rating five was well above world standard. The results are shown in table 10. On this measure, most research-active departments in Australian universities are at least at world standard, rating a three or higher, and therefore in a position to advance knowledge in ways that are useful or interesting. The proportion of research-active departments rated as below world standard dropped from 35 per cent in the 2010 ERA to 22 per cent in the 2012 ERA.

The ERA can also be used to identify disciplinary areas of national strength and weakness. Reflecting the large investment in health research (section 3.2), nearly a third of medical and health science disciplines were rated as well above world standard. More than a third of the smaller earth sciences field were also well above world standard. Research in education and

¹⁴³ Teaching and research staff were weighted as 0.4 of a full-time staff member to account for teaching work, while research staff were weighted as 1.

¹⁴⁴ ATN (2012)

¹⁴⁵ Evans (2012)

in business and management was mostly rated as below world standard. ERA results suggest that universities are finding ways to minimise the number of below world standard areas. However, with teaching and research in the same field required by law for universities in at least three disciplines, and expanding but still limited scope for teaching-only staff in enterprise agreements, there are limits to how easily universities can abandon areas of research weakness.

In recent years, international university rankings have attracted a lot of attention. One of these, the Shanghai Jiao Tong Academic Ranking of World Universities, focuses exclusively on research performance. Indicators include papers published in certain high-prestige journals, numbers of high-citation researchers, and winners of Nobel Prizes and Fields Medals (a mathematics award). The most recent ranks for Australian universities are shown in table 11. Five Australian universities are in the top 100 universities in the world, up from two in the first year of the Shanghai Jiao Tong ranking, 2003. American universities dominate the top fifty. Nineteen Australian universities are in the top 500 universities in the Shanghai Jiao Tong ranking.

Table 10: Excellence in Research for Australia, 2012

Rating	Units of evaluation	Percentage
1 +2 (low)	518	22%
3	820	35%
4	594	26%
5 (high)	391	17%
Total	2,323	100%

Source: ARC (2012b)

Table 11: Top ten Australian universities, Shanghai Jiao Tong university rankings 2012

University of Melbourne	57
Australian National University	64
University of Queensland	90
University of Sydney	93
University of Western Australia	96
Monash University	101-150
University of New South Wales	101-150
University of Adelaide	201-300
Macquarie University	201-300
University of Newcastle	301-400

Source: ARWU (2012)

8.3 Other public benefits

A 2011 review of higher education funding listed a range of 'public benefits' associated with higher education, including increased tax revenues, a better 'civil society' and reduced crime.¹⁴⁶

Higher tax revenues are a by-product of graduate income, as discussed in section 7.3.2. Grattan Institute research calculated additional tax revenues based on 2011 census data. Median male

¹⁴⁶ Lomax-Smith, *et al.* (2011) p 102-103

bachelor-degree holders were estimated to pay an additional \$430,000 in income tax over their careers, compared to a male who finished education at Year 12. Women bachelor-degree holders were estimated to pay an additional \$215,000 income tax.¹⁴⁷ However, these are upper estimates of the increased tax revenue *caused* by higher education. Some additional earnings reflect the fact that people who go to university on average have higher ability levels than people who do not.

During 2012, the Grattan Institute released the most detailed Australian research yet published on the non-financial public benefits of higher education.¹⁴⁸ It used several Australian datasets to compare bachelor-degree graduates with people who are similar except for their education levels. In general, this analysis found that graduates did exhibit more pro-social attitudes and behaviour, but that the higher education effects were small. Other social background factors explain many of the differences between graduates and non-graduates.

For example, the ABS General Social Survey includes a question about childhood involvement in group activities such as sports, dance or Scouts. Once answers to this question were incorporated into a statistical analysis, the 'university' effect on civic engagement was considerably diminished. Much of the apparent additional civic engagement of graduates is a carry-forward of childhood community participation.

Graduates typically express more tolerant attitudes to ethnic and religious minorities than do non-graduates. Figure 31, for example shows that most people with a bachelor degree are happy to have someone with Vietnamese or Lebanese background as a work colleague, friend, or family member. Most people with no post-school education prefer a neighbour-only or more distant relationship. However, as with civic engagement the 'university' effect is much smaller after other factors are taken into account. Both age and gender are important influences on attitudes to ethnic groups. That graduates are on average younger than people with no post-school education, and are more likely to be female, partly explains the differences observed in figure 31.

The relationships between education and crime are complex. Admitted illicit drug use differs little by educational level,¹⁴⁹ but for custodial crimes (mostly violent crimes and drug trafficking¹⁵⁰) graduates are under-represented relative to their share of the population. Only two per cent of prison entrants in 2009 had a degree, compared to 23 per cent of the working age population that year. Very low education levels are clearly associated with incarceration: more than three-quarters of prisoners had Year 10 or lower education, compared to less than one-quarter of the general population.¹⁵¹

¹⁴⁷ The methodology used in making these calculations is described in Weidmann and Norton (2012a).

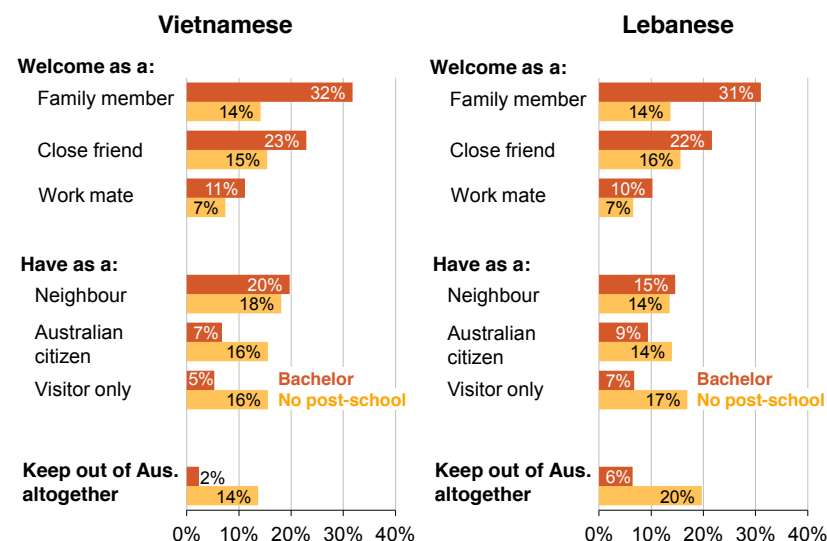
¹⁴⁸ Savage and Norton (2012) and Norton (2012a)

¹⁴⁹ AIHW (2011), p 92

¹⁵⁰ ABS (2012a)

¹⁵¹ AIHW (2010), p 22, ABS (2011a), table 14

Figure 31: Tolerance of ethnic groups by education



Source: Australian Survey of Social Attitudes 2007

At the whole-of-society level education and crime increased together in Australia until about 2000, when crime started trending down.¹⁵² Declining opportunities for lower-skilled work, especially for men, probably helps explain why some acquired more education, and others turned to crime. Improved schooling would almost certainly steer some individuals away from crime.¹⁵³ At this stage we cannot confidently say that graduates are less likely to commit crime than other people with the ability to go to university.

¹⁵² AIC (2012)

¹⁵³ See the literature cited in Savage and Norton (2012), p 15-18

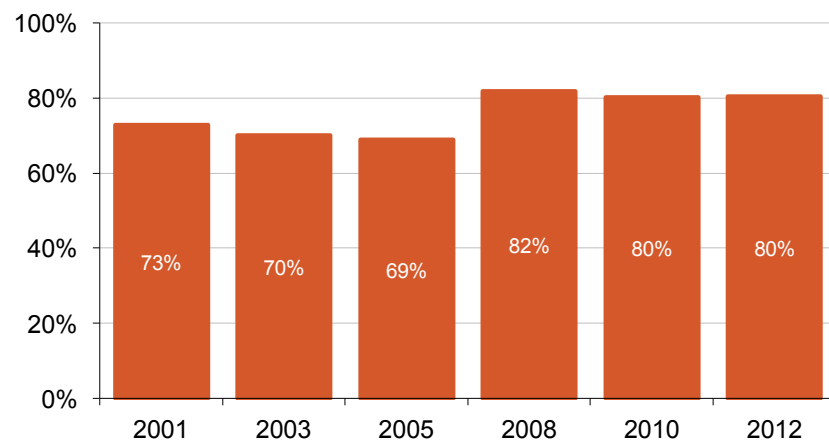
8.4 Public perceptions

Various social surveys have asked Australians about their confidence in social institutions, including universities. Universities enjoy high levels of public confidence. In 2012, 80 per cent of respondents who expressed a view said that they had either a 'great deal' of confidence in universities (18 per cent), or 'quite a lot of confidence' (62 per cent). This 80 per cent confidence level has been stable over the last four years. Of the 18 institutions covered in the 2012 survey, only the military and the police enjoyed higher levels of confidence. Graduates had more confidence in universities than non-graduates, but confidence levels were high regardless of educational background. The public's view of universities also appears to have improved since 2005 (figure 32).

Asking a slightly different question, a 2008 poll found that 71 per cent of respondents thought that universities were doing an excellent or good job. That was the highest rating for public education institutions, and matched private schools (table 12). The same poll found that the public generally accepts the civics arguments made on behalf of universities.¹⁵⁴

¹⁵⁴ McAllister (2008)

Figure 32: Proportion of public who have a 'great deal' or 'quite a lot' of confidence in universities



Sources: McAllister et al. (2001-2010); Wilson et al. (2003); (2005); McAllister et al. (2011); McAllister and Pietsch (2012)

Table 12: Public approval of educational institutions

Institution	Per cent of public who believes institution is doing a 'good' or 'excellent' job
Public schools	47%
Private schools	71%
TAFEs	66%
Universities	71%

Source: McAllister (2008)

Glossary

ABS	Australian Bureau of Statistics	AUSSE	Australasian Survey of Student Engagement
ACER	Australian Council for Educational Research	CGS	Commonwealth Grant Scheme
ACPET	Australian Council for Private Education and Training	Commonwealth contribution	The Federal Government's tuition subsidy
AIHW	Australian Institute of Health and Welfare	CPI	Consumer Price Index
Applied research	Research undertaken primarily to acquire new knowledge with a specific application in view.	DEET	Australian Department of Employment, Education and Training
AQF	Australian Qualifications Framework	DEEWR	Australian Department of Education, Employment and Workplace Relations
ARC	Australian Research Council	DEST	Australian Department of Education, Science and Training
ARCom	Australian Research Committee	DIAC	Australian Department of Immigration and Citizenship
ARWU	Academic Ranking of World Universities	DIISR	Australian Department of Innovation, Industry, Science and Research
ATAR	Australian Tertiary Admission Rank	DIISRTE	Australian Department of Industry, Innovation, Science, Research and Tertiary Education
ATN	Australian Technology Network		
ATO	Australian Taxation Office	Doubtful debt	HELP debt not expected to be repaid
Australian Research Committee	Australian Government committee which is developing research priorities and impact measures	EFTSL	Equivalent full-time student load

ERA	Excellence in Research for Australia	NUHEP	Non-university higher education provider
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.	OUA	Open Universities Australia
		Pathway college	Institution specialising in diploma level courses aimed at facilitating entry to university courses
		Pure basic research	Research to acquire new knowledge without looking for long term benefits other than the advancement of knowledge
FEE-HELP	HELP for full-fee students		
FTE	Full-time equivalent		
GCA	Graduate Careers Australia	RUN	Regional Universities Network
Group of Eight	Coalition of Australia's 'sandstone' universities	SA-HELP	HELP for the student amenities fee
HECS	Higher Education Contribution Scheme	SES	Socio-economic status
HECS-HELP	HELP for Commonwealth-supported students	Strategic basic research	Research directed into specified broad areas in the expectation of practical discoveries.
HELP	Higher Education Loan Program	Student contribution	The amount paid by a student in a Commonwealth-supported place
HEP	Higher Education Provider	TAFE	Technical and further education
IRU	Innovative Research Universities	TEQSA	Tertiary Education Quality and Standards Agency
NCVER	National Centre for Vocational Education Research	VTAC	Victorian Tertiary Admissions Centre
NHMRC	National Health and Medical Research Council		

Appendix A – Higher education providers with HELP eligibility

Operating universities		NUHEPs eligible for FEE-HELP
Group of Eight Australian National University^ Monash University^ The University of Adelaide^ The University of New South Wales^ The University of Melbourne^ The University of Sydney^ The University of Queensland^ The University of Western Australia	Regional Universities Network Central Queensland University* Southern Cross University* University of Ballarat* The University of New England University of Southern Queensland* University of the Sunshine Coast Other universities Australian Catholic University* Charles Sturt University* Bond University Deakin University^ Edith Cowan University* Macquarie University^ MCD University of Divinity Swinburne University of Technology*^ University of Canberra* University of Notre Dame, Australia University of Tasmania^ University of Wollongong University of Western Sydney* Victoria University* Overseas universities Carnegie Mellon University University College London	Academy of Information Technology Australian Academy of Design Adelaide Central School of Art Adelaide College of Divinity Alphacrucis College Australian College of Applied Psychology Australian College of Physical Education Australian College of Theology ° Australian Film, Television and Radio School° Australian Guild of Music Education Australian Institute of Management SA Australian Institute of Music Australian Institute of Professional Counsellors Australian Lutheran College Australian School of Management Avondale College Batchelor Institute of Indigenous Education° Blue Mountains International Hotel Management School Box Hill Institute Cairnmillar Institute Campion Institute Canberra Institute of Technology Carrick Higher Education Centre of Academic Excellence Chifley Business School Chisholm Institute Christian Heritage College
Australian Technology Network of Universities Curtin University of Technology Queensland University of Technology* RMIT University* University of South Australia* University of Technology, Sydney*		
Innovative Research Universities of Australia Charles Darwin University* Flinders University Griffith University^ James Cook University^ La Trobe University^ Murdoch University The University of Newcastle^		

NUHEPs eligible for FEE-HELP (Continued)		
College of Law	Leo Cussen Institute	Queensland Institute of Business and Technology
Curtin College	Macleay College	Raffles College
Educational Enterprises Australia	Marcus Oldham College	SAE Institute
Endeavour College of Natural Health	Melbourne Institute for Experiential and Creative Arts	South Australian Institute of Business and Technology
Gestalt Therapy Brisbane	Therapy	Southbank Institute of Technology
Group Colleges Australia	Melbourne Institute of Business and Technology	Stotts Colleges
Harvest Bible College	Melbourne Institute of Technology	Study Group Australia
Harvest West Bible College	Monash College	Sydney College of Divinity
Holmes Institute	Moore Theological College [°]	Sydney Institute of Business and Technology
Holmesglen Institute of TAFE	Morling College	Tabor College (VIC, NSW, SA, TAS)
International College of Hotel Management	National Art School	TAFE NSW
Insearch	National Institute of Dramatic Art	Think College
International College of Management	Navitas Bundoora	TOP Education Group
International Conservatorium of Music	Navitas College of Public Safety	University College London
Jansen Newman Institute	Northern Melbourne Institute of TAFE	UOW College
Jazz Music Institute	Perth Bible College	Wesley Institute
JMC Academy	Perth Institute of Business and Technology	Whitehouse Institute
Kaplan Business School	Phoenix Institute of Australia	William Angliss Institute of TAFE
Kaplan Higher Education	Polytechnic West	

* Established or given university status as a result of the John Dawkins education reforms

[^] Amalgamated with other providers during the John Dawkins education reforms

[°] Self-accrediting NUHEP

Notes: Charles Darwin University was the Northern Territory University until 2004. The University of the Sunshine Coast was established in 1998.

The Australian Technology Network (ATN) universities teach over 200,000 students and emphasise research in collaboration with industry.

The Innovative Research Universities of Australia (IRU) teach over 180,000 students. It is mostly comprised of research universities founded in the 1960s and 1970s.

The Group of Eight (Go8) teaches over 325,000 students. Its members are the leading research universities in Australia.

The six members of the Regional Universities Network (RUN) teach over 100,000 students. It was founded in 2011 to enhance the contribution its members make to their regions.

Appendix B – Higher education providers without HELP eligibility

HEPs not eligible for FEE-HELP		
Academies Australasia Polytechnic	Institute for Emotionally Focused Therapy	Relationships Australia
Adelaide College of Ministries	International Institute of Business and Technology	S P Jain School of Global Management
Asia Pacific International College	Investment Banking Institute Business School	SA Management Institute
Australian College of the Arts	John Paul II Institute for Marriage and Family	Summer Institute of Linguistics
Australian Institute of Business	Kollel Academy of Advanced Jewish Education	Swinburne College
Australian Institute of Higher Education	Le Cordon Bleu	Sydney Institute of Health Sciences
Cambridge International College	Mayfield Education	TAFE SA
Centre for Pavement Engineering Education	Montessori World Educational Institute	Torrens University Australia
Chartered Secretaries Australia	Nan Tien Institute	Victory Institute of Higher Education
College of Nursing	Newcastle International College	Vose College
Commissioner of the Australian Federal Police	OASES Community Learning	Williams Business College
Eastern Health (Turning Point Alcohol & Drug)	Parapharm	Worldview Centre for Intercultural Studies
Heriot-Watt University (Edinburgh Business School)	Photography Holdings	

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