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Mapping Australian higher education

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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 is the first report from Grattan Institute's higher education program. It puts in one place key facts and their context.

'Higher education' covers 39 universities, and over 100 other institutions. Higher education expenditure is \$23 billion per year, almost 2% 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, more than doubled over the last 20 years. Higher proportions are international, studying off-campus, and female, now 58% of the cohort. Yet broad fields of study are surprisingly stable.

Student satisfaction is improving, but engagement between academics and students remains below levels achieved in other countries.

The proportion of graduates getting jobs that use their higher education skills has remained constant despite the rise in student numbers. Graduate incomes are twice those of school leavers, and the rate of return on higher education investment is increasing, although graduates are not on average more satisfied with their jobs.

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

Higher education research is growing rapidly. Increasing numbers of research-only staff helped university research publications more than double in a decade. Most research expenditure is in health, natural and physical sciences, far more than their share of students.

The Commonwealth has increased its policy reach, creating a new quality regulator. But as of this year, it no longer regulates domestic undergraduate student numbers in most courses.

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

Higher education policy favours producing teaching and research together. This adds costs to teaching, and it is unclear whether it adds educational benefits. Teaching-focused providers may be a good alternative for some students.

Funding per place for Commonwealth-supported students reflects political rather than educational factors. This may lead to a misallocation of student places, and exacerbate skills shortages.

The HELP student loan scheme still serves its original goals, but it does so with too many anomalies and at too great an expense.

Future Grattan higher education projects will 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 of Australian life to the centre. As recently as the mid-1970s, only three out of every hundred working-age Australians had a higher education qualification. By 2011, the proportion had increased to just under a quarter. If current policies are successful, by 2025 40% 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. This report aims to be an accessible, one-stop source of information on higher education

trends, policy and performance. We hope it will contribute to an informed higher education debate. While this report makes no detailed policy recommendations, it is organised so that policy implications can be drawn. Future Grattan Institute research will examine policy issues in more detail.

The higher education learning environment is a theme that comes up, directly or indirectly, across many chapters. On the available student survey data, the learning environment in Australia’s universities is probably better than it was 15 years ago. While the trend in student satisfaction with teaching is positive, student engagement surveys show that Australian higher education staff and students are substantially less engaged with each other than their American counterparts.

Compared to the United States, Australian higher education teaching is also concentrated in research-active universities. This is partly due to funding policies that favour public universities over non-university higher education providers (NUHEPs), most of which are not active in research. Undergraduates at universities receive public subsidies and a soft student loan scheme, while students at NUHEPs generally receive no tuition subsidies and pay a substantial surcharge on their student loans.

Whether there is a positive relationship between teaching and research is much debated in higher education circles. While American research finds statistical evidence of a positive relationship, the limited Australian research suggests a negative relationship. The strong emphasis on research in Australian universities may explain the different results. An international survey of academics found that of the 18 countries surveyed,

American academics had the highest preference for teaching, while Australian academics had the fourth lowest.

In the universities, combining teaching and research is proving difficult. Research funding does not follow student numbers, so universities cannot sustain a workforce employed both to teach and research. The consequence is a large workforce of casual or temporary teaching-only academics. Students may sometimes get the worst of both worlds: academics skilled in neither teaching nor research.

Greater use of teaching-only higher education providers is a possible policy option. It may provide more full-time academic careers, while also focusing effort on delivering high quality teaching. Without the need for a long summer break for academic research, more students would have the opportunity to finish their degrees in less time. Two universities and many NUHEPs already offer trimesters, which let students complete three academic years in two calendar years.

In late 2011, a report to the federal government found that, on average, current teaching and scholarship costs matched funding for a Commonwealth-supported place (there is a considerable deficit if research costs are included). In some universities and disciplines, however, costs exceed income per student place. This matters for the 'demand-driven' funding system that started in January 2012. The funding agreements that once allocated student places to universities and between disciplines have largely been replaced. Universities are free to offer as many – or as few – places in each course as they choose. The danger is that to save money universities will reduce supply in 'under-funded' courses, even if there is student and labour-market demand.

Already there are skills shortages in some graduate occupations. Health occupations in particular have consistently seen graduate shortages over the last decade. The funding system needs to offer higher education providers a strong incentive to enrol students in courses with labour-market demand.

The income-contingent loan scheme HELP – which began as HECS – is the major innovation of Australian higher education policy. It has helped many people attend university, while keeping down costs to other taxpayers. However, as HELP has evolved, a range of problems have emerged. The various HELP schemes treat students very differently, without obvious strong policy justifications. The HELP schemes, taken together, are also becoming very expensive. The net interest bill on the \$23 billion in HELP debt is around \$600 million a year. And the government expects that \$5.2 billion of the debt will never be repaid, due to HELP debtors moving overseas or earning too little. The Grattan Institute will examine ways of improving HELP and reducing its costs, while preserving its policy objectives.

We do not believe that Australia's higher education system is 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. However, we can have a better higher education system than we do now. Future Grattan Institute reports will explore in more detail how this can be achieved.

In this report, chapter 1 explains how higher education is defined in Australia, the non-university 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 the income-contingent HELP student loan scheme.

Chapter 5 outlines how per student funding levels are determined, how student places are distributed, and the connections between the two.

Chapter 6 describes the rising authority of the Commonwealth Government in higher education, and the key government departments.

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.

1. Higher education providers in Australia

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

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 – 39 of the approximately 180 operating in late 2011. 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).¹ From the beginning of 2012, these requirements are enforced by a new federal regulator, the Tertiary Education Quality and Standards Agency (TEQSA – this is discussed in more detail in section 6.2.2).

¹ DIISRTE (2012). These federal regulations have just replaced the National Protocols for Higher Education Approval Processes, a State, Territory and Commonwealth government agreement with similar provisions.

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, and 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.

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: Australian Qualifications Framework (2011)

Key differences between the qualifications include the level of theoretical knowledge required, the capacity to analyse information, and the ability to 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 between the AQF levels rather than sharp dividing lines, 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. Though academics in universities sometimes say they are interested in knowledge for its own sake, and not just when it is useful for a job, 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% gave a job-related reason.²

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 2011. 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

² ABS (2009b) table 5

institutions offer both higher education and vocational education courses. All up, around 85 institutions offer both higher and vocational education courses.³ Figure 1 shows the convergence, with many education providers sitting 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 one sign that vocational and higher education are moving closer together.

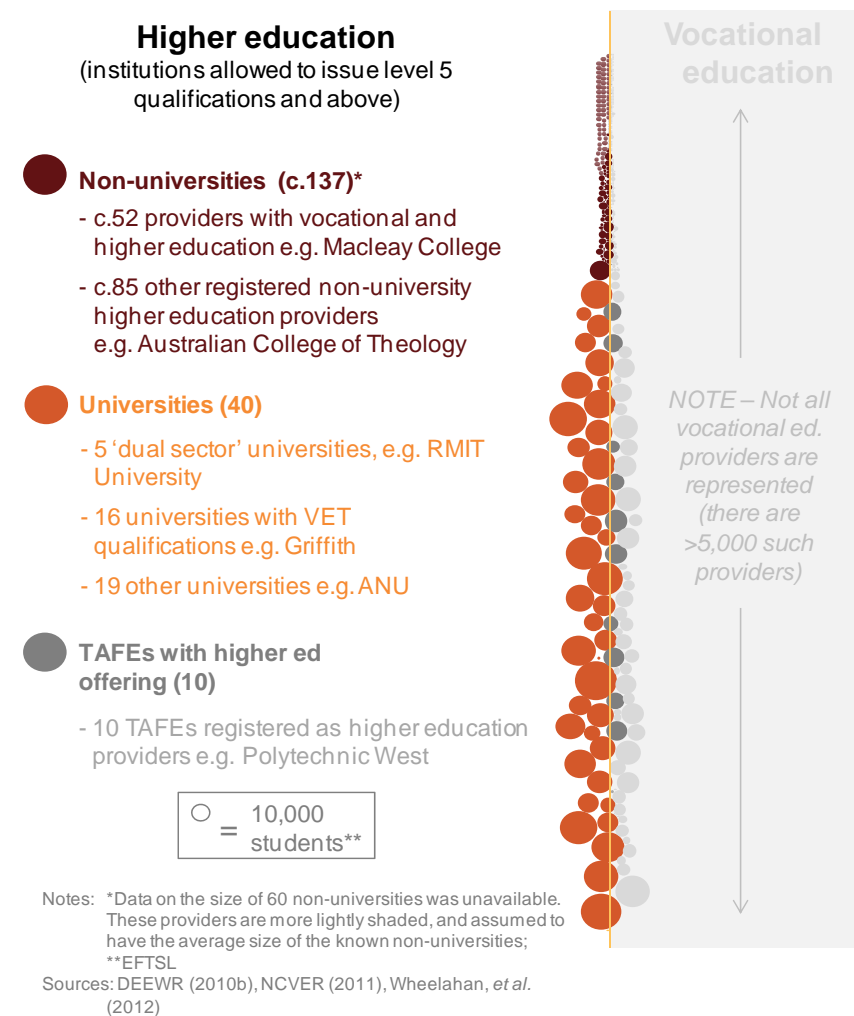
1.2 Non-university higher education providers

Public awareness of non-university higher education providers (NUHEPs) is low, but they are a significant part of Australian higher education. In late 2011, nearly 140 distinct NUHEPs were registered with state and territory authorities.⁴ Some of these are public institutions: for example, the Australian Film, Television and Radio School, the Bureau of Meteorology Training Centre or the various TAFEs now offering degrees. Some are hard to classify

³ Wheelahan, *et al.* (2012). Due to different classification methods and different count dates, our total differs slightly from Wheelahan's total.

⁴ This is an unduplicated count; the total number of registered institutions is higher as some organisations are registered in multiple states. Where organisations have similar names but are legally separate they have been counted separately. However, institutions with common ultimate owners but separate registration have been counted separately. From 1 January 2012, the Melbourne College of Divinity became a specialist university, reducing the number of NUHEPs by one.

Figure 1 – Schematic of higher education institutions by size



on a public-private spectrum, as they are for-profit colleges owned by public universities. But most (around 118) are clearly in the private sector. A 1999 survey of private higher education identified 86 institutions, indicating growth of nearly 40% to 2011.⁵

We cannot say for sure how many students are taught in NUHEPs. They 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 NUHEPs. Where public universities outsource teaching (section 1.2.1) the students are counted in the university rather than the teaching institution. However, combining publicly-reported numbers with material provided directly by NUHEPs, it can be estimated that they enrolled the equivalent of at least 59,000 full-time students in 2010. That is 7.2% of the total reported higher education students in that year (see 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 2010-11 annual report, Navitas had higher-education revenues of \$370 million, with earnings of \$110 million (from operations in six countries, including Australia). Seek does not distinguish between different types of education, but its 2010-11 annual report recorded education division revenues of \$205 million and earnings of \$18.4 million (less than half the previous

year).⁷ Another major non-university higher education provider in Australia, Kaplan, is listed on the New York Stock Exchange through its parent Washington Post Company.

The non-university higher education sector is quite diverse, so most generalisations have exceptions. However, compared to universities (discussed in section 1.3), the NUHEPs are specialised. 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 semesters a calendar year rather than two.

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 first year of the target university. By contrast, the College of Law offers entirely postgraduate courses, as it prepares law graduates for practice or gives lawyers additional specialised 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,

⁵ Watson (2000)

⁶ Many small NUHEPs and at least one large NUHEP, the Kaplan group are not in this number. Kaplan has more than 60,000 students in Australia, but we do not know how many of them are higher education students.

⁷ All earnings figures before interest, taxation, depreciation and amortisation (EBITDA).

Southern School of Natural Therapies. Subject specialisation can build brand reputations in their particular niche area.

An analysis of course offerings shows that business-related courses are the 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 (28) 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. Fifteen providers have a health subject in their titles.

Mostly, accreditation for NUHEP courses has to be sought from the government higher education regulator, now 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', which is a legal right to approve their own courses. However, most NUHEPs are not self-accrediting.

On top of these licence-to-operate requirements, NUHEPs often seek other third-party approval or endorsement of their courses. For example, some courses at the Australian College of Applied Psychology are approved by the Psychotherapy and Counselling Federation of Australia, a professional body, and the undergraduate degrees offered by the Blue Mountains

International Hotel Management School are quality endorsed by the University of Queensland.

1.2.1 Re-organising higher education production

The legal key to being a higher education provider is the licence to issue higher education qualifications. Higher education providers typically bundle awarding qualifications with other parts of the higher education production process: recruiting and admitting students, designing curriculum, teaching, and examination and assessment. However, higher education production is starting to unbundle.

In a complex higher education market with dozens of providers, 'broker' institutions can simplify choices and the enrolment process for students. Open Universities Australia (OUA) does not deliver education or award degrees. It sells online units 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. 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.

As well as awarding their own credentials, colleges in the Navitas group deliver education for other higher education providers. For example, 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 Ballarat qualifications. These arrangements are used by public universities to expand into new markets. There may also be efficiency gains, if specialised teaching institutions can educate students more effectively or at lower cost.

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.⁸ There are 39 full Australian universities, including two private universities, Bond University and the University of Notre Dame. There is a list of universities in Appendix A.

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 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.⁹ 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 the only institution to be approved under this provision. From the beginning of 2012, it became the 'MCD University of Divinity'.

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 research orientation of the university sector. The universities that were created as a result are still sometimes referred to as 'Dawkins universities' (after the minister behind the policy, John Dawkins).¹⁰ 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

⁸ DIISRTE (2012)

⁹ A detailed categorisation of disciplines can be found in ABS (2001).

¹⁰ The 'Dawkins universities' are noted in the list of universities in Appendix A.

prestige, and can charge premium fees for their teaching.¹¹ Public research funding is typically awarded according to past research 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 Australian private universities had been established in addition to the 17 'Dawkins' universities (though one private institution, Melbourne University Private, subsequently closed down).¹²

In October 2011, the first new university to be established under the three fields of study rule was announced. Provisionally entitled 'Torrens University', this new entity is owned by the American for-profit university conglomerate Laureate Universities International. But as Torrens is a new university, it has not conducted any research. Backed by the South Australian government, it is using a provision for 'green field' universities that have a 'high probability' of meeting university criteria within five years. The new Commonwealth rules for university registration that took effect in early 2012 do not allow this trial period. However, some version of Laureate's strategy may be one of the few ways a new full university could be established in Australia. Foreign higher education providers can offer levels of money and experience that local higher education providers will struggle to achieve.

¹¹ The close relationship between fees charged and research performance is shown in Beaton-Wells and Thompson (2011).

¹² In addition to the Australian universities, three foreign universities have qualifications approved for delivery in Australia: Carnegie Mellon University, University College London, and Heriot-Watt University. These operate as NUHEPs.

To what extent research universities provide a distinctive form of higher education for undergraduate students is not entirely clear. In Australia, most public universities have integrating teaching and research as a goal, but reports of the Australian Universities Quality Agency (an audit body being absorbed into TEQSA) suggest that the goal is often not well translated into practice.¹³ In many fields of study what is taught to undergraduates is constrained by professional admissions requirements and/or core disciplinary content that differs little between higher education institutions. These constraints may limit the scope, and usefulness, of the teaching-research nexus.

Though there are potential synergies between teaching and research, the two are also rivals for limited academic time and resources. This could disadvantage students. In Australia the limited published studies find a negative relationship between research performance and student satisfaction.¹⁴ 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.¹⁵ One reason for the different findings may be that, compared to their American counterparts, Australian academics have a low preference for teaching compared to research.¹⁶

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

¹³ Brew (2010)

¹⁴ Ramsden and Moses (1992); Barrett and Milbourne (2011)

¹⁵ Stack (2003)

¹⁶ Coates, *et al.* (2009) esp. pp 21-22.

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 13% of completing students have combined or double degrees.¹⁷ 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, without legally needing to seek approval from external organisations. In practice, they often voluntarily seek external accreditation in addition to internal approval. For example, nine

universities have had their business schools accredited by the international Association to Advance Collegiate Schools of Business (AACSB). The legal systems of accreditation may not always provide enough credibility for prospective students.

Under TEQSA, universities retain their formal self-accrediting status. It will, however, be a diluted self-accrediting power. Under the current system, universities are self-accrediting in perpetuity. Under TEQSA, universities will need to be periodically re-registered, with the potential for their self-accreditation power to be removed or qualified. All higher education institutions will be subject to as yet unspecified 'teaching and learning standards'. The higher education minister denies that the standards will be used to interfere with traditional academic freedoms.¹⁸ 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.

Self-accreditation is very important to universities. This right was not formally acknowledged in the first TEQSA bill, but the universities fought successfully for it to be included, albeit in qualified form. They were lucky to win this concession. Self-accreditation is one of the potential conflicts of interest built into the way universities operate. Universities devise the curriculum, approve the curriculum, admit students, teach students, assess students, and award credentials to students. The potential conflicts between these functions give rise to regular claims that academic standards are falling and that students are being 'soft marked', especially if they are paying fees (see section 7.1.1 for a discussion of this issue).

¹⁷ GCA (2011b)

¹⁸ Evans (2011b)

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 practice the scholarly profession.’¹⁹ Generally, academics see themselves as having considerable autonomy in the three main areas of university activity: research, teaching and community engagement (see 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.²⁰ For research and teaching, academics self-regulate their individual freedoms. Academic research is subject to peer review (review by other academic experts); course content is subject to the approval of academic boards in the self-accreditation process. 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.²¹ Such actions are almost always highly controversial, 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

¹⁹ Finkin and Post (2009) p 39

²⁰ Bexley, *et al.* (2011) p 66

²¹ 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: DIIS RTE (2012).

providers.²² In practice, a strong culture of academic freedom is more a feature of universities than higher education providers generally. When the Commonwealth government recently 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 it is not essential 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 to their self-accreditation status is that they see themselves as self-governing communities. Though universities are subject to many regulations, their legal structure reflects this self-government. Public universities were established by government but they are not government instrumentalities.²³ Governments appoint a minority of members to public university governing bodies, commonly called councils or senates. Education ministers have no direct operational control over universities. Partly for historical constitutional reasons, much government regulation of universities is via conditions on grants (see section 6.1 for more detail). In practice universities invariably accept government money and its conditions, but in principle both could be refused. This freedom is not available to government

²² DIIS RTE (2012)

²³ The Australian Catholic University is an exception, see section 4.2 for more detail on the blurred public/private divide.

schools and TAFEs, which typically are under direct government control.

Within the universities, academics see themselves as citizens of the university community and not just employees of the university as a corporate entity. They expect inclusion in collective decisions, a decision-making process known as 'collegiality'. Traditionally academics have elected members to university senates and councils. Academic 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; new regulations now require it.²⁴ 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.²⁵

Despite complaints about the power of university management, university organisational structures are, compared to for-profit corporations, highly decentralised 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.

²⁴ DIISRTE (2011); DIISRTE (2012)

²⁵ Norton (2005)

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.²⁶

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.²⁷ Another survey of academics found that more than half believed that community service should be rewarded in promotions, though only 15% said that it was so rewarded.²⁸ So community service is an important part of university culture and practice, but it does not dominate like teaching and research.

While community engagement is a significant university activity, some forms of it are not always appreciated by others. In his book *The Poor Relation*, 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

²⁶ DIISRTE (2012)

²⁷ Coates, *et al.* (2009)

²⁸ Bexley, *et al.* (2011)

academics to be ill-informed and impractical.²⁹ These themes were echoed recently 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, between the culture and incentives of academia and the input policymakers required.³⁰

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. However, 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.

²⁹ Macintyre (2010), p 24

³⁰ Shergold (2011)

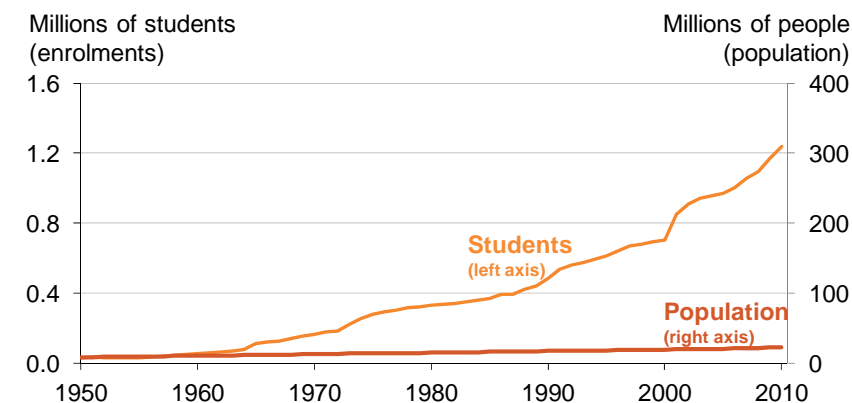
2. Higher education students in Australia

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 in absolute terms and relative to population growth over the last 60 years, as shown in figure 2.

Figure 2 – Growth in enrolments and population, each indexed to 1950=100



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

Sources: Based upon DEEWR (2001-2010); ABS (2008a); ABS (2008b)

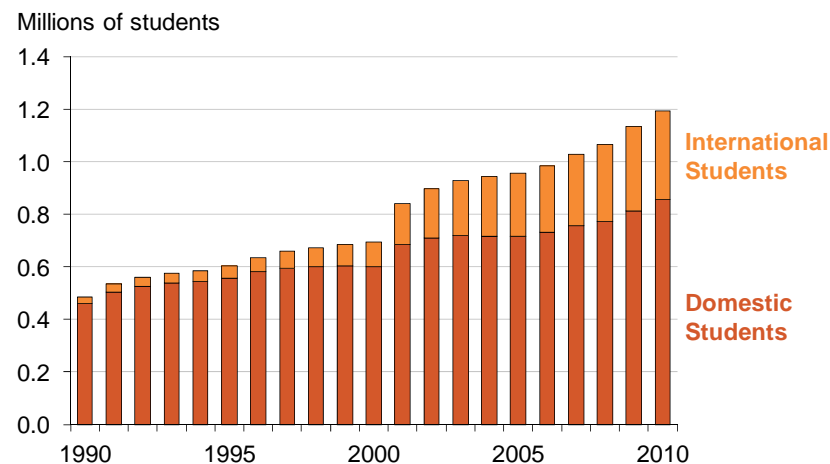
Total enrolments have increased from around 30,000 in 1950 to around 1.2 million in 2010, including both international and domestic students. In 1950, the 30,000 students were spread across nine universities. By 2010, 17 individual universities had more than 30,000 students. In population terms, one in 267 Australian residents were enrolled in university in 1950, compared to one in 18 in 2010. Higher education has moved from the periphery of Australian experience to close to the centre.

In later years, however, much of the enrolment growth has come from international students (figure 3). By 2010, 336,000 international students were enrolled in Australian higher education providers.

International students have studied in Australian universities for a long time, but until the mid-1980s their numbers were small. Many were in Australia as part of Australia's overseas aid, wholly or partly subsidised by the federal government.³¹ From 1988, universities were allowed to take as many international students as they liked, at fees they set and kept. Double-digit growth rates quickly became the norm, promoted at times by migration policies favouring former international students. However, since 2009 the number of new visas issued for higher education students has declined.³² Changes to migration policy, a high dollar, and negative international publicity on student safety contributed to this reversal.

³¹ Meadows (2011)

³² DIC (2011)

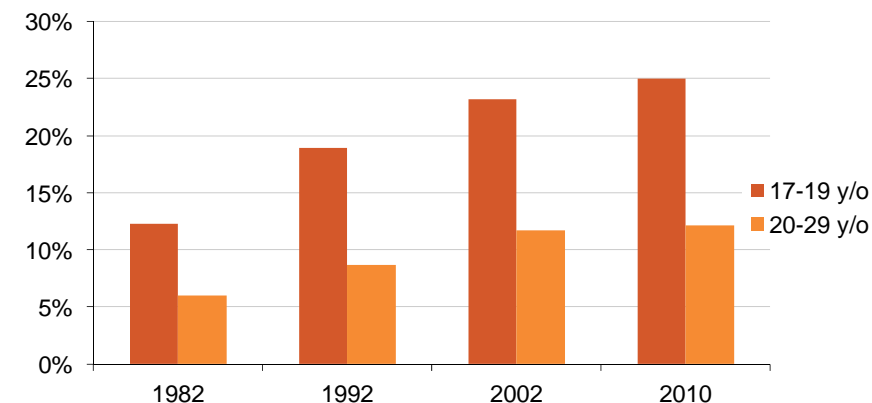
Figure 3 – Domestic/international split of enrolled students

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

Sources: DEEWR (2000a); DEEWR (2001-2010)

Domestic growth has been more subdued, though overall domestic enrolments have increased by 50% in the last 15 years. Most Australian students are Commonwealth-supported undergraduates, and so government decisions have a large influence on how many places will be available. Some funded places were abolished as part of budget cuts announced in 1996; another drop in places in 2004 occurred after the then federal government threatened universities with financial penalties for so-called 'over-enrolment' (enrolment above the target number set by the federal government).

The funding cutbacks of the 1990s meant that the previously rapid growth in higher education participation slowed down. Between 1982 and 1992, the proportion of 17-19 year olds in higher

Figure 4 – Participation in higher education, 17-19 and 20-29 year olds

Source: Based upon DEET (1993); DEEWR (2000-2010); ABS (2008a); ABS (2008b)

education increased by eight percentage points. But in the next decade of 1992 to 2002, participation in this age group increased by only three percentage points (figure 4). In recent years, government policy has swung back into an expansionary phase. In 2010, for the first time since 1988, domestic student numbers grew more quickly than international student numbers.

Where previously numbers have been capped, from 2012, the federal government will fund as many domestic undergraduate places as the public universities can fill (see section 5.3.1 for more on this policy). Combined with a slow international student market, this policy change makes it possible that domestic enrolments will outpace international enrolments for the next few years.

Growth in domestic student numbers in the 1990s and early 2000s would have been weaker still except for policies promoting growth in fee-paying places. Between 1987 and 1994, domestic postgraduate coursework (as opposed to research) places were largely deregulated, so that universities could offer as many places as they could fill at fees they set. As with international students, this regulatory change prompted big increases in student numbers. The greater proportional increase in enrolments among 20-29 year olds compared to 17-19 year olds between 1992 and 2002 (as seen in figure 4) partly reflects this change.

From 1997, public universities could offer limited numbers of undergraduate domestic full-fee places in courses where they had filled all their government-subsidised ('HECS') places. This policy was controversial, with the Rudd Labor government prohibiting any new such enrolments after 2008. From 2005, an income-contingent loan scheme called FEE-HELP was extended to any higher education provider that met accreditation and some other prudential and administrative requirements (for more on FEE-HELP see section 4.2.2).³³ We believe that FEE-HELP prompted significant domestic enrolment growth, especially outside the public universities. For example, the private Bond University's domestic undergraduate commencing student numbers have tripled in the years since FEE-HELP began. In 2010, 97,000 students took out a FEE-HELP loan, including more than 34,000 students enrolled outside the public university sector.³⁴

A market-driven higher education system has never been a clear government aim. But by 2010, around 40% of student places

were unsubsidised: the federal government had little or no influence over what the students studied, where they studied, or how much they paid.³⁵ In 2012, many of the non-price controls on Commonwealth-supported undergraduate places will be relaxed. At least in theory, it will be a 'demand-driven' system, with universities changing the courses they offer according to student demand (see section 5.3.1 for more detail). The government will retain full control over only a small percentage of higher education places. Over the last 20 years, the relationship between universities and the Commonwealth government has become less important, and the relationship between universities and students has become more important.

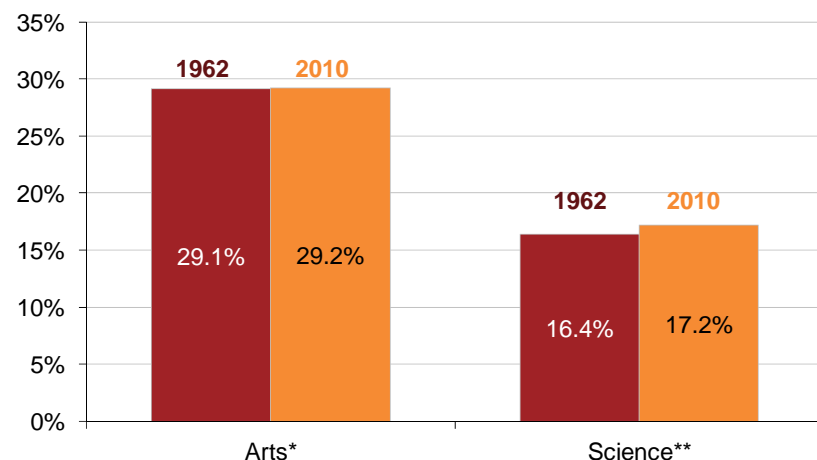
2.2 What is being studied?

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 enrolment share. Precise comparisons over time are complicated by changes in the way higher education statistics are collected, but figure 5 shows stability in arts and science 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.

³³ A list of NUHEPs eligible for FEE-HELP is in Appendix A.

³⁴ Grattan Institute calculations from table 5.4 in DEEWR (2010c).

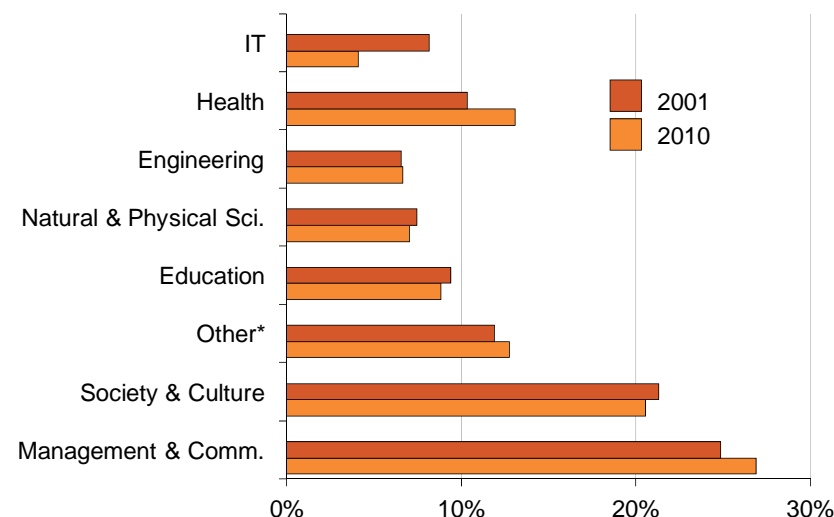
³⁵ This includes international students, domestic postgraduate students, various domestic full-fee undergraduate units at public universities in exception to the general prohibition, Open Universities Australia students, and students at NUHEPs offering FEE-HELP loans.

Figure 5 – Domestic undergraduate student enrolment share for arts and science

Notes: *2010 Arts includes the ABS categories 'Society and Culture' (minus sub-categories law and economics); and 'Creative Arts', **The 2010 Science number includes IT (which makes up 3% of students)

Sources: Macmillan (1968), Watson (2000); DEEWR (2010c) table 4.5: Actual Student Load (EFTSL)

It is the more vocationally oriented courses that change most over time. Figure 6 shows that between 2001 and 2010 information technology lost much of its enrolment share, while health courses added enrolment share. Both changes reflected shifts in the labour market. Among domestic students, business courses lost enrolment share, reversing some of their 1990s gains. However, numbers were boosted by international students. Nearly half of all international students are enrolled in management and commerce courses. While domestic student enrolments are spread across a wide range of courses, international student enrolments are quite

Figure 6 – Enrolment share by discipline

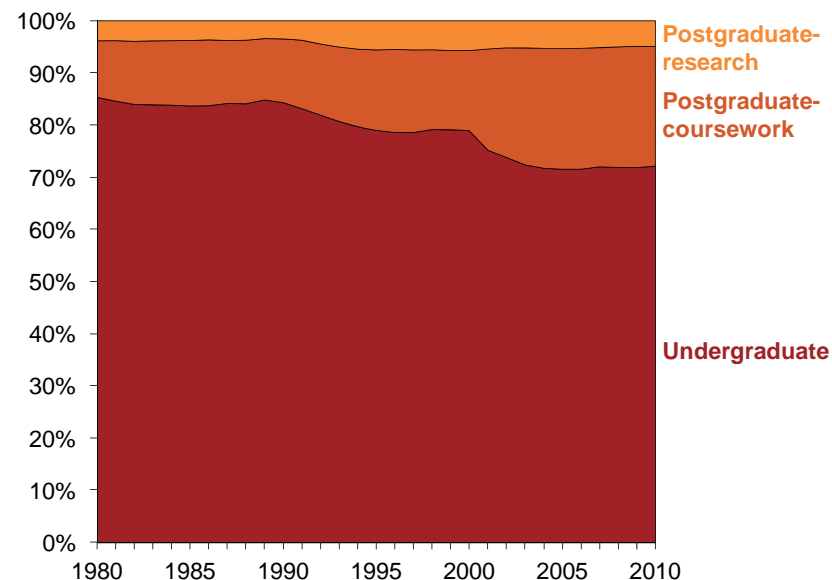
Note: Includes international and domestic students

**Other* includes 'Architecture and Building', 'Agriculture, Environmental and Related Studies', 'Creative Arts', 'Food, Hospitality and Personal Services', 'Mixed Field Programs' and 'Non-Award Courses'.

Sources: DEEWR (2001-2010)

concentrated. Engineering and information technology are also popular with international students.

Enrolment shares over time have also been affected by the expansion of postgraduate study (figure 7). At least at the sub-doctoral level, postgraduate study is more vocational than undergraduate study. This reflects people upgrading their professional qualifications.

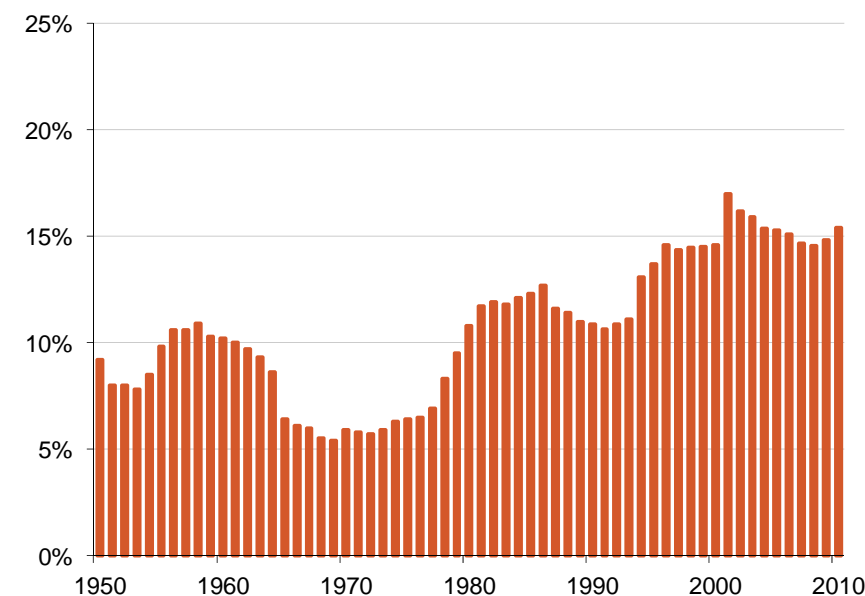
Figure 7 – Undergrad/postgraduate enrolment split

Note: Doctorate by coursework is classified as postgraduate coursework.

Sources: DEEWR (2000a); DEEWR (2001-2010)

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% of total enrolments. As figure 8 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). If 'multi-modal' education is included – students who mix on and off-campus study – more than one in five students studies off-campus, or over 270,000 people.

Figure 8 – Percentage of students studying off campus

Notes: Multimodal students not included; dip from mid-1960 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% to reduce effect of possible double counting of OUA students.

Sources: DEEWR (2000a); DEEWR (2001-2010)

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

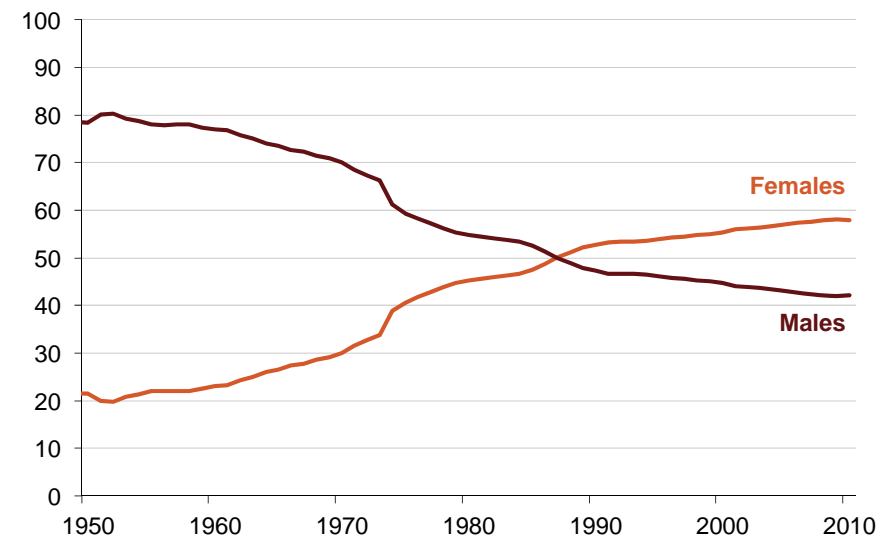
significant work and family responsibilities. Not having to travel to campus makes study easier for this group, and among domestic students at public universities postgraduates have driven growth in the last decade. As in other areas of higher education over the last 20 years, the profit motive has also promoted expansion. Most notable in this regard is Open Universities Australia (OUA). Though owned by seven public universities, it is run as a for-profit business, selling online units offered by its shareholder universities and other higher education providers. Through aggressive marketing, OUA has quadrupled its student numbers since 2004, to more than 43,000 in 2010.

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 9).

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 until 2010.

Figure 9 – Enrolment split between females and males (domestic students)



Sources: DEEWR (2000a); DEEWR (2001-2010)

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 with low socio-economic status (SES).

In policy terms, low SES is the most important equity category. Each university has been given a low SES enrolment target, taking into account its opportunity to increase its low SES intake, with financial rewards if the target is met. These institutional

targets are designed to reach a national target of 20% of domestic undergraduate students from low SES backgrounds by 2020.³⁶ Though the target was set in 2009, debate about how low SES should be defined is on-going. While based mainly on census information about educational and occupational levels where students live, the government currently has three SES definitions. Depending on the definition, in 2010 low SES students were between 15.4% and 16.5% of domestic undergraduates.³⁷

However, the government is yet to address some significant criticisms of its SES definition. Its efforts have focused on more accurately identifying the geographic areas that contain the lowest 25% of the population by SES. They have not examined whether the lowest 25% is an appropriate cut-off point. This cut-off misses a large share of the educationally disadvantaged population.³⁸

A further difficulty is that the current measure, low SES enrolments as a percentage of the total student population, is a potentially misleading indicator of low SES opportunity. Opportunity is measured by low SES students or as a proportion of the low SES population. 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% of the children of machinery operators, drivers and labourers are in higher education or have a degree. By contrast, 49% 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 which measure is used is shown in table 3. For example, the children of technicians and trade workers with higher education are only 9% of the higher education population, but 23% 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.

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 and 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 upon ABS (2011c)

³⁶ DEEWR (2009b), pp 12 to 14.

³⁷ DEEWR (2010c), appendix 2, table 2.6; DEEWR (2011d)

³⁸ Coelli (2010)

Table 3 – Two methods of measuring 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 ed. (or who have a degree) whose parents are managers and professionals (71%);
 ** e.g. the proportion of children of managers and professionals who participate in higher education or have a degree (49%).

Source: Based upon ABS (2011c)

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.³⁹ Rising demand for higher education has been experienced by all SES groups.

2.5 How are students chosen?

Every child has a right to a place at a public school. But universities have never accepted everyone who wants to attend.

³⁹ Marks and Macmillan (2007)

Successful school completion is generally the minimum requirement. In the early 1950s, any school completer who applied to a university was accepted.⁴⁰ As the number of potential students grew more quickly than university funding, however, university places had to be restricted. Since then, university admission has primarily been based on relative academic performance. The better an applicant's past academic performance, the better their chance of being awarded a place.

The most frequently used source of information on past academic performance is school results. Unlike in the United States, standardised admissions tests are not widely used for school leavers, though specialised aptitude tests such as UMAT (Undergraduate Medicine and Health Sciences Admission Test) are common in some fields. There is an undergraduate general admission test for school leavers, UniTest, but it supplements rather than replaces school result-based admission systems at some universities. Mature-age applicants can sit the Specialised Tertiary Admissions Test (STAT).

Most domestic school leavers are admitted to university principally on their Australian Tertiary Admission Rank (ATAR).⁴¹ An examination of 2012 Victorian undergraduate courses indicated that ATAR was the principal entry requirement for around 85% of courses.⁴² The ATAR ranks school leavers in their

⁴⁰ Poynter and Rasmussen (1996), pp 184-185.

⁴¹ 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.

⁴² 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

age cohort between 0 and 99.95. For example, an ATAR of 80 means that the student did better in year 12 than 80% of their age cohort, including people who did not finish school. For international students, as well as English language tests, universities set admission requirements based on home country school systems or international qualifications such as the International Baccalaureate.⁴³ International students must also sit tests of English language proficiency.⁴⁴

Though school leavers are the largest group of applicants for undergraduate courses, many applicants have previous post-school education. Significant numbers apply based on complete or incomplete higher education. These include students who attended 'pathway' colleges (section 1.2), students switching courses or universities, or students returning for a second degree.⁴⁵ Some applicants apply based on their vocational education qualifications or experience.

More than 80% of potential students apply through centralised state tertiary admissions centres, with the remainder applying directly to higher education providers.⁴⁶ Tertiary admission centre

would use ATAR, as one of several factors. The courses with a range of criteria tend to be in the creative arts or health fields.

⁴³ International students also enter university from Australian schools or after other preparatory study.

⁴⁴ In the International English Language Testing System (IELTS), students need ratings described as 'competent user' or 'good user'.

⁴⁵ 23% of the 271,117 applicants through tertiary admissions centres, and 21% of the 68,880 direct applicants to higher education providers: DEEWR (2011f), pages 10 and 60. The numbers are reported separately because some people apply using both methods.

⁴⁶ DEEWR (2011f), p. 66

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 2011, half of all applicants received a first-preference offer.⁴⁷

Allocating higher education places on prior academic performance has wide public acceptance. However, ATAR is at best moderately predictive of future academic performance. Below 80, ATARs have little predictive value for future grades.⁴⁸ Also, for a given ATAR students from non-selective government schools tend to get better university grades.⁴⁹ This suggests that ATAR under-states the academic potential of some applicants. However, there is a stronger link between ATAR and eventual completion of a course.⁵⁰

ATAR is also 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 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

⁴⁷ DEEWR (2011f), table A10.1

⁴⁸ James, *et al.* (2009), chapter 3. 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.

⁴⁹ James, *et al.* (2009), especially chapter 3.

⁵⁰ James, *et al.* (2009), chapter 3; Lomax-Smith, *et al.* (2011), pp 79 to 80.

desired non-academic attributes. In other countries, interviews and personal essays are also widely used to assess applicants in a more broad-ranging way.

The standard criticisms of ATAR 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' above which every applicant receives an offer. However, many applicants are admitted below this rank, especially where they can demonstrate disadvantage. This is likely to occur more frequently as universities seek to increase their low SES student intake (section 2.4).

At least 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. Any alternative selection tool would need to prove that it more reliably predicts other relevant aspects of future performance in a cost-effective way. To switch, higher education providers would also need to persuade potential applicants that the new method was worthwhile, since it would add to the time, cost and stress of moving to higher education.

However, for applicants with a lower ATAR its lack of predictive power is more significant. Universities do not need to be so concerned as in the past about allocating a limited number of student places fairly and efficiently. With an uncapped system (see section 5.3.1) there are places for everyone. The issue is more that potential students need better advice about their prospects. Analysis of students starting in 2005 showed that fewer than half of those who commenced on an ATAR between

30 and 59 had completed a course by 2010, though more than 10% were still enrolled.⁵¹ We should not assume that higher education is the best choice for everyone.

⁵¹ Lomax-Smith, *et al.* (2011), p 80.

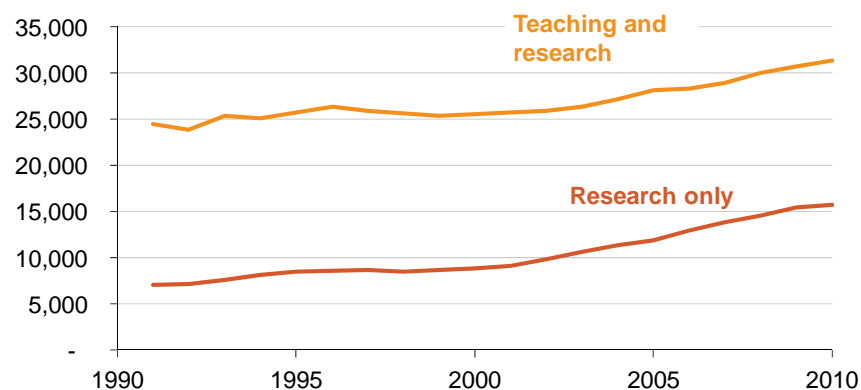
3. Research in Australian higher education

Research is a key activity of universities. Without it, they could not use the ‘university’ title (section 1.3.1). Improving research output and performance has been a high university and public policy priority. The results of this effort are surveyed in this section.

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 20% of the academic workforce in 1991, increasing to 32% by 2010. In that year, about 47,000 academics had a research or teaching and research function (these are shown in figure 10).

Figure 10 – FTE Teaching and research and research only staff

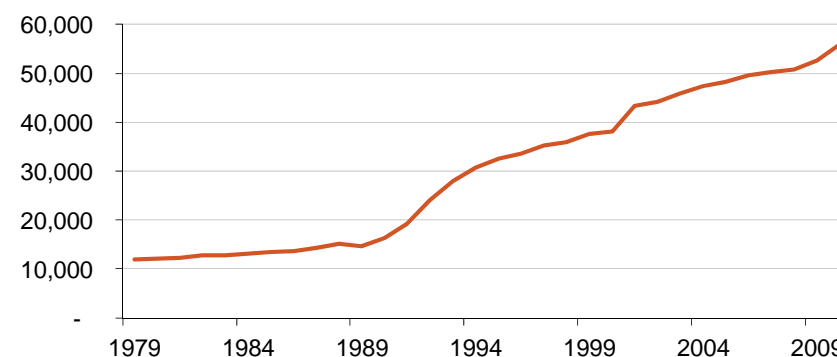


Sources: DEEWR (2000b); DEEWR (2010b)

Additional dedicated research funding during this period has created a demand for specialised research staff.

The same time period has seen a substantial increase in research students (figure 11), who in effect make up a large proportion of the research workforce. Including overseas students, there were about 56,000 research students in 2010. Attrition is high in some doctoral programs, but Australia now produces around 6,000 PhD graduates each year, along with more than 1,000 graduates with masters by research qualifications.

Figure 11 – Number of students enrolled in PhD by research or Masters by research, 1979-2010



Sources: DEEWR (2000a); DEEWR (2001-2010)

3.2 What is being researched?

Research spending is strongly skewed towards scientific disciplines, and medical science in particular (table 4). Medical and health research accounted for 34% of higher education research spending in 2008, with other sciences together responsible for a similar share of expenditure. About 10% of research spending is on the humanities and social sciences.

The sciences are also strong in research student enrolments, with nearly 20% of students enrolled in the natural and physical sciences (table 4). Compared to the undergraduate student population, there is a much lower proportion of research students enrolled in management and commerce. However, for humanities and social science students PhD and Master's by research enrolment shares are similar to undergraduate levels.

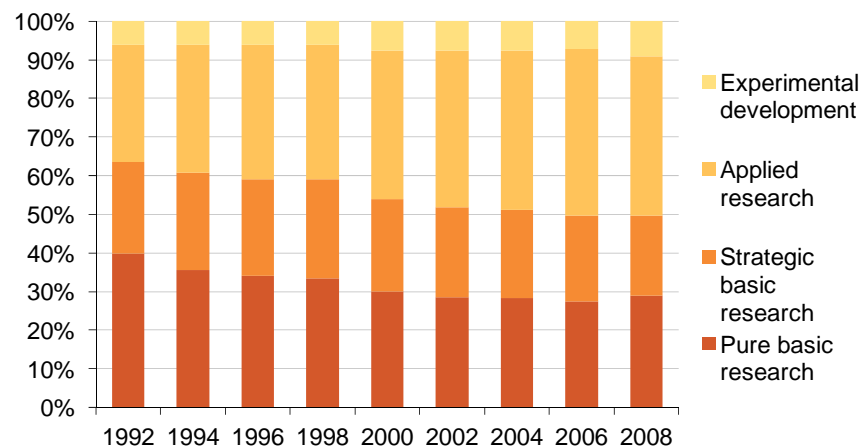
Research is classified according to its approach to knowledge as well as its field, using OECD categories. As figure 12 shows, 'pure basic research', which is the pursuit of knowledge without looking for long-term benefits other than advancing knowledge, has declined as a proportion of all research spending since 1992. In sixteen years it went from nearly 40% of all research expenditure to less than 30%.

The shift was to applied research, a category covering research aimed at finding possible uses for basic research or new ways of achieving specific and predetermined objectives (see section 4.2.4 for detail on research funding policy).

Table 4 – Research spending and research and teaching student enrolments by broad field of study

Discipline	Research spending (2008)	Research student enrolments (2010)	Teaching student enrolments (2010)
Natural and physical sciences	26%	19%	12%
Information technology	3%	4%	4%
Engineering and related technologies	11%	12%	6%
Architecture and building	1%	2%	2%
Agriculture, environmental and related studies	3%	5%	1%
Health	34%	14%	14%
Education	3%	8%	8%
Management and commerce	8%	7%	26%
Society and culture	10%	24%	24%
Creative arts	2%	6%	3%

Source: Based upon ABS (2009d); DEEWR (2010c)

Figure 12 – Research spending by type, 1992-2008

Source: Based upon ABS (2009c)

3.3 What do academics produce?

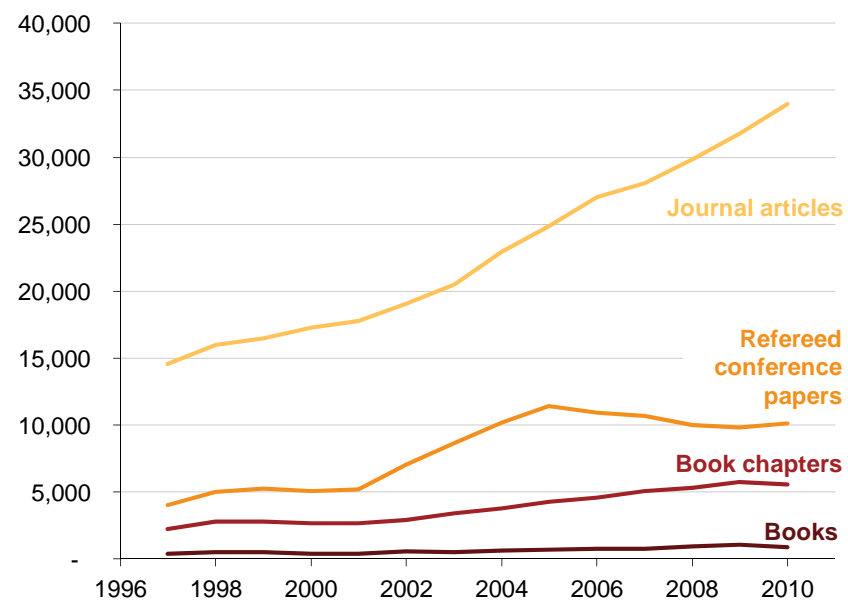
The growth in applied research activity shows in statistics on commercialisation activities by universities. ‘Invention disclosures’ – a notification of a novel and useful device, material or method to a university’s technology transfer office – increased 170% between 2000 and 2009 to nearly 1,200. Legally 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 per year over the last decade,

and contract revenue from industry is around \$250 million per year.⁵²

Despite the funding shift towards applied research, what universities remain good at is producing published research findings. As figure 13 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 10) and particularly research-only staff account for some of the increase, there has also been an increase in research paper productivity (see 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.

⁵² Larkins (2011) p 218; DIISR (2011); DIISR (various years)

Figure 13 – Research publications, 1997-2010



Source: *Universities Australia* (1995-2008); *DIISR* (2009-2010)

4. Higher education finance – the macro picture

In this section we discuss 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 2010, public universities had revenue of \$22 billion.⁵³ This figure does not count the two private universities, Bond and Notre Dame. Nor does it count the non-university higher education providers (NUHEPs) that enrol at least 7.2% of all higher education students in Australia. So counting public universities alone under-states the size of Australia's higher education industry.

There are no existing estimates of the total financial size of the Australian higher education industry. Only a small number of NUHEPs publish financial information. When they do, Australian higher education income is typically included in aggregated figures which include other education levels, or operations in other countries. The Grattan Institute used enrolment data released by DEEWR (supplemented in one case with data from a NUHEP) and fees published by the NUHEPs to estimate their higher education income for 2010. Combined with some other data sources, we estimate that there is at least \$840 million in higher education income more than the revenue received by the

public universities. This is collected on a narrower basis than DEEWR's public university figures, which includes all university activities.⁵⁴ It also omits a large number of NUHEPs for which there is no published enrolment data, though of those omitted Kaplan is the only organisation that we believe is large. The higher education sector was at least 1.8% of the Australian economy in 2010.⁵⁵

Over the last twenty years, higher education has become a significant export industry. Fee income from international students in 2010 was around \$3.7 billion. International students also spend money on living expenses while in Australia, though the amount is difficult to quantify.⁵⁶

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

⁵⁴ Notre Dame and Batchelor Institute of Indigenous Education are in the DEEWR spreadsheet, but for the purposes of this comparison we used income generated from students only.

⁵⁵ Using chain volume GDP for calendar 2010.

⁵⁶ 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).

⁵³ DEEWR (2011c)

4.2 Public spending on higher education

Public spending on higher education takes four main forms:

- Direct grants primarily for teaching;
- 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.

An overview of these funding streams is provided in table 5.

How public spending on higher education is defined has a substantial effect on how significant the Commonwealth's government support appears. As much of the money lent to students will be recovered, it is not a public subsidy. But it is public money that goes to universities. There are also tax expenditures that benefit higher education providers and students. An overview of the main recurrent public subsidies to higher education is in table 5. We have omitted one-off capital grants of around \$550 million in 2010.

Table 5 – Overview of public higher education subsidies, 2010-11

Category	Sub-category	Description	\$ Millions
Teaching grants (~\$5.1bn)	Commonwealth Grants Scheme	Funding based on the number of supported domestic student places. Program uncapped from 2012. See section 4.2.1 for more detail	\$5,065 ⁺
Loan costs (~\$1.2bn) (Distinct from new loans of ~\$3.4 billion)	Carrying cost	The cost of providing a real-interest-free loan. See section 4.2.24.2.1. Calculations based on difference between government 10 year bond rate and CPI	\$511 ⁺⁺⁺
	Addition to doubtful debt	A proportion of loans are expected to never be repaid. See section 4.2.2. Calculations based on difference between 2010-11 and 2009-10 doubtful debt	\$524 ⁺⁺
	Up-front discount	Discount paid by government on behalf of students who pay up-front	\$107 ⁺⁺
	Early repayment bonus	Bonus for students who repay their debt ahead of schedule	\$20 ⁺⁺
	Aus. Postgrad. Awards	Living expense support for postgraduate students. See section 4.2.3	\$183 ⁺
Income support for students (~\$1.8bn)	Youth Allowance	Living expense support for students aged 16-25. See section 4.2.3	\$1,330 [±]
	Austudy	Living expense support for students over 25. See section 4.2.3	\$226 [±]
	Abstudy	Support for living expenses for Indigenous students. See section 4.2.3	\$27 [±]
Research grants (\$2.5bn, not including "other recurrent grants")	Competitive research grants	ARC – see section 4.2.4 NHMRC – see section 4.2.4	\$709 ⁺ \$536 ⁺⁺
	Performance-based block research grants	Research training and general research funding. Funding is based on research activity. See section 4.2.4	\$1,278 ⁺
	Other recurrent grants	For example, equity, national institutes	\$383 ⁺
Total			\$10,581

Notes: ⁺2010-11; ⁺⁺Calendar 2010; [^]2009-10; ^{^^}2009. Figures are in current dollars. Table does not include tax deductions for self-education or donations, nor does the table include State and Local Government spending.

Sources: ⁺DEEWR (2011a); ⁺⁺DEEWR (2009a); ⁺⁺⁺DEEWR (2011b); ⁺DIISR (2011-12); ⁺⁺NHMRC (2011); [±]Youth Allowance figures are a special data request from DEEWR, Austudy and Abstudy figures are derived from DEEWR (2011a), and weighted by the split in recipients between higher and vocational education.

Some entitlements to public spending are based on reasonably objective criteria. FEE-HELP loans (discussed in 4.2.2) and student income support (discussed in 4.2.3) fall into this category. Students attending institutions which meet basic criteria are entitled to FEE-HELP loans and student income support. 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 the public universities plus the Batchelor Institute of Indigenous Education. Table B contains Bond University, the University of Notre Dame, and the Melbourne College of Divinity (now renamed 'MCD University of Divinity'). Access to Tables A or B is a matter of history and lobbying. Registration as a university or as a higher education provider does not in itself create any public funding entitlements. Table C exists because of restrictions on access to FEE-HELP that otherwise apply to higher education institutions operating in Australia but controlled from overseas. It contains Carnegie Mellon University and University College London (despite their names, they are registered as NUHEPs in Australia; see section 1.2). There is no set process for being added to any of the tables. An overview of the different entitlements to public support is in table 6.

The system of public spending entitlements is based on institutions rather than public policy principles. There are no obvious attributes of the courses or students at Table A higher education providers that make them exclusively worthy of public funding. Though the Table A higher education providers are often described as 'public' universities, there is no clear public/private divide. As described in section 1.3, universities have always

enjoyed much greater independence from government than other public educational

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	✓	✓	✓	✓	✓
Deductibility of self-education expenses	✓	✓	✓	✓	✓

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

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

Table 7 – What makes ‘public’ higher education providers different?

Possible public/private criteria	Exception(s)
Public universities are created by government.	Australian Catholic University (a public university) is a not-for-profit private company.
Public higher education providers are those which offer Commonwealth-supported places.	University of Notre Dame, Avondale College, Christian Heritage College, Tabor Adelaide, Tabor College Victoria – all private higher education providers with Commonwealth-supported places.
Public higher education providers serve equity students.	In 2009, 21 private higher education providers and 2 TAFEs offering higher education had a higher % of low SES students than the public university average.
Public universities get most of their revenue from government.	Macquarie University, Central Queensland University, Curtin University.
Institutions are public if they are created by legislation	All Table B private institutions have their own state legislation.

institutions. Table A universities self-accredit their own courses (section 1.3.3), so in academic matters they are less regulated than ‘private’ institutions. Table 7 shows a series of exceptions to public/private distinctions that might otherwise help explain the differences in funding entitlements.

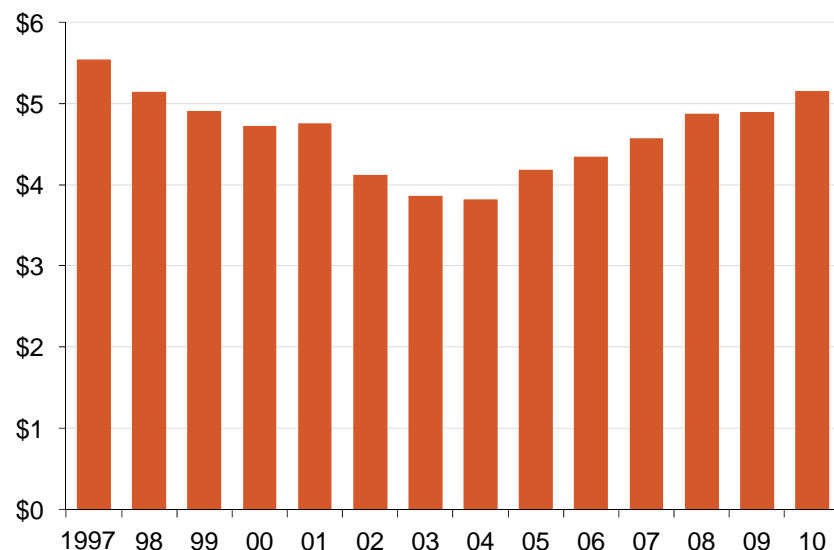
4.2.1 Teaching grants for higher education institutions

The single largest source of public funds for higher education is the Commonwealth Grants Scheme (CGS). More than \$5 billion was distributed through the CGS in 2010. As can be seen from table 6, the public universities and their students have the main entitlements to CGS funding. The CGS is mainly calculated according to the number of Commonwealth-supported places allocated to higher education providers. 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 the disciplines are divided into eight funding ‘clusters’, each of which has its own Commonwealth funding rate (the separate student contribution is 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 of 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.

Figure 14 – Commonwealth Grant Scheme

Billions of (2010) dollars



Note: Operating grant figures used prior to 2005. 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 upon DEEWR (1998-2011); ABS (various years-a); ABS (various years-c)

The number of student places is therefore a key driver of total spending, in total and on each eligible higher education provider. Since the CGS came into operation in 2005, Commonwealth-supported places have been allocated through funding agreements between the government and each eligible higher

education provider. These funding agreements set out the number of places in total and in each funding cluster. Though the funding agreements had some flexibility, financial disincentives to substantial under- or over-enrolment relative to the funding agreement gave certainty to both the government and higher education providers.⁵⁷

From 2012, numbers of student places and therefore funding will be less certain. With a few exceptions, the federal government is lifting controls on the number of undergraduate Commonwealth-supported places in Table A higher education providers. As a transitional measure, in 2010 and 2011 the government agreed to provide CGS funds up to 10% more than in the original agreement. Most universities responded by significantly increasing their student intakes. The government calls the new system starting in 2012 'demand-driven'. Student preferences for particular courses or providers will shape funding much more than in the past. However, universities are not obliged to offer places simply because there is demand for them.

Uncapping Commonwealth-supported places is forecast to have a significant effect on total CGS spending. The Budget forward estimates predict a 30% increase between 2010-11 and 2014-5, or about \$1.5 billion.

These increases represent a substantial reversal of recent government policy. Between 1997 and 2004 operating grant funding (the CGS predecessor) dropped in real terms almost every year (figure 14).

⁵⁷ When the term 'over-enrolment' is used in the higher education media, it is an implicit reference to the funding agreements, and not necessarily to the institution's capacity to take students.

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.

4.2.2 Lending to students

Since 1989, the Australian government has lent higher education students money on an income-contingent basis. Students who take out an income-contingent loan but do not get the assumed financial benefits of higher education – defined as an income above \$47,196 in 2011-12 – will not pay. Students or former students who earn more than this income threshold pay a share of their income through the tax system each year until the debt is fully paid off. The share is between 4% and 8% of their income, depending on how much they earn.

Initially, the scheme was 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. From 2012, SA-HELP will finance a re-introduced 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 loans 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.

As figure 15 shows, the amount of HELP debt outstanding has increased more than a hundred-fold since 1989. This reflects both an increasing number of debtors, and higher average debt as tuition costs increase. At 30 June 2011, the HELP debt’s nominal value was more than \$23 billion. Over the last few years, the Department of Education, Employment and Workplace Relations *Annual Report* has published what it calls the HELP debt’s ‘fair’

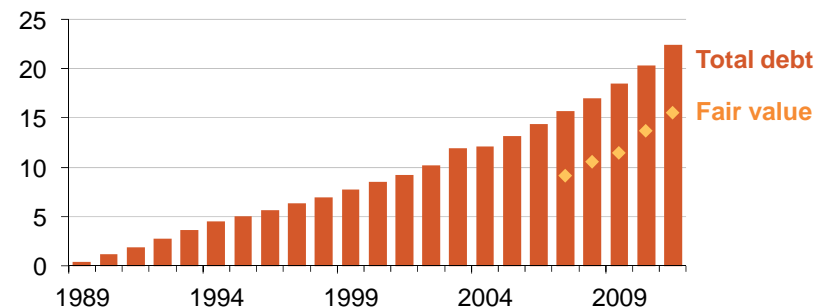
value (also shown in figure 15). This is an estimate of the HELP debt's market value. At 30 June 2011 the HELP debt's fair value was \$15.5 billion, about \$7.6 billion less than its nominal value.

One reason that the HELP debt's fair value is less than the nominal value is that HELP debtors are not charged a real interest rate. The government borrows money in the bond markets, and re-lends it to students at the CPI inflation rate. The gap between the two numbers is 2-3%; using a mid-point estimate the net interest bill on the HELP debt is nearly \$600 million a year. The market value of the HELP debt incorporates a write-down of about \$2.4 billion, reflecting the future interest costs before debt is repaid.

A significantly larger cost is the debt not expected to be repaid, estimated at \$5.2 billion at 30 June 2011. 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 actuarial estimates of future repayments.

Figure 15 – HELP debt outstanding (and fair value)

Billions of dollars (FY\$2010)



Note: Deflated using CPI

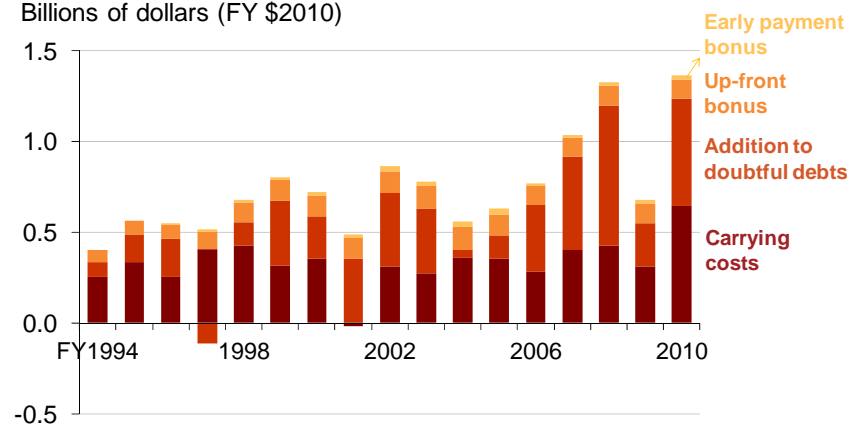
Source: Based upon DEEWR (2010a); ABS (various years-a); DEEWR (various years)

Though the government has only reported on the 'fair' value of the total HELP debt in the last few years, Grattan Institute has constructed a time series of the annual cost of HECS and then HELP back to 1994 (figure 16). Given the history of volatility in actuarial analysis, the annual figures for doubtful debt are less reliable than the interest cost for the debt. The actual amounts being written off each year are still quite small. But the indicative total costs are high and rising. As student numbers and fees increase, this will become a more important issue.

In future work, the Grattan Institute will examine whether these costs can be reduced without undermining the policy objectives of the income-contingent loan scheme.

Figure 16 – Annual cost to government of HELP

Billions of dollars (FY \$2010)



Note: Addition to doubtful debt calculations vary according to the actuarial assumptions of the Department. Carrying cost is calculated as the spread between the 10 year Commonwealth bond rate and CPI, multiplied by the level of outstanding debt. Deflated using CPI.

Source: Based upon DEEWR (1998-2011); ABS (various years-a); DEEWR (various years)

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% 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% discount for paying up-front, which converts to an 11% charge for deferring.⁵⁸ The government compensates universities

⁵⁸ 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

for the discount. In 2010 this cost \$107 million, though the discount was 20% at the time. The total cost will be lower from 2012.

Full-fee postgraduates and students at Open Universities Australia (OUA) do not pay any loan fee. Yet all HELP debtors are entitled to a 'bonus' for early repayment. 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. In recent years the bonus has been 10%, but it was lowered to 5% in 2012. At the 5% level, for a HELP repayment of \$10,000 the ATO will reduce outstanding debt by \$10,500. As HELP debt can be held for more than a year without being indexed, the government will also pay around 5% interest on the outstanding money. Not counting the interest cost, the early repayment bonus cost \$20 million in 2010.

FEE-HELP borrowers have a lifetime limit on how much they can borrow (for 2012, \$112,134 for medicine, dentistry and veterinary science; \$89,706 for all other courses). Yet in 2011 the government effectively uncapped 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.

this is that the 'real' price is \$9,000, and that anyone who defers pays an extra \$1,000, or 11% more.

The new SA-HELP loan scheme for student amenities has a maximum annual loan of \$263 a year (the price limit on the student 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 \$263 will also need to borrow for their tuition fee. Rather than creating a new layer of HELP bureaucracy, the student amenities fee could have been added to whichever tuition loan scheme the student is using.

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 are for students, but 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. As of mid-2011, about 160,000 higher education students were receiving Youth Allowance, at a cost to the budget of around \$1.3 billion. The total cost of Youth Allowance has been increasing in recent years (figure 17), due to increasing numbers of students, changes to eligibility, and other reforms.

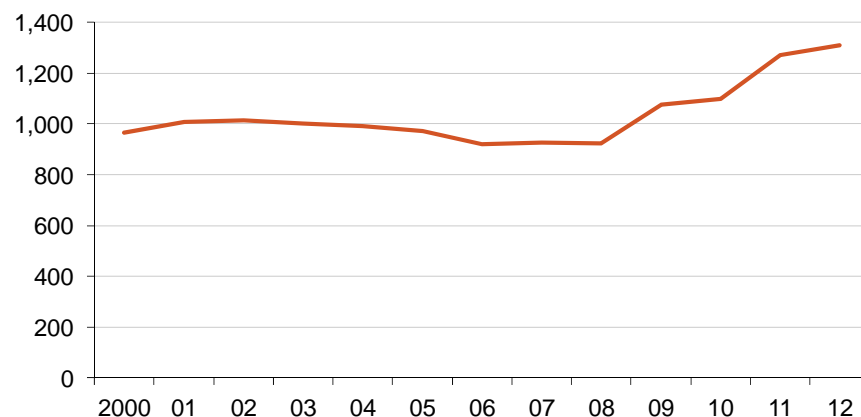
A little under half of Youth Allowance recipients receive it based on household need, assessed by a parental income test. Students whose parents earn \$46,000 a year or less are entitled to the full at-home Youth Allowance rate of \$265 a fortnight. The fortnightly payment reduces as parents earn more than \$46,000, or if the student earns more than \$236 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. Independence is mainly secured via work history or age. The government is lowering the age at which students are no longer subject to a parental income test. It dropped to 22 from January 2012, from 25 when the government came to office. Given that higher education students are generally from a high socioeconomic background (section 2.4), this age-based entitlement dilutes the household needs basis of Youth Allowance. 'Independent' Youth Allowance recipients may still be living with their parents.

Along with Youth Allowance, there are two other smaller income support programs. Austudy is for students aged 25 or older, and in 2011-12 will cost an estimated \$233 million for 21,000 students. Abstudy is for Indigenous students, and in 2011-12 will cost an estimated \$30 million for 3,700 students.

In addition to 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 \$219 million in 2011-12), but allocated by universities.

Figure 17 – Spending on Youth Allowance, FY2000-2012 (\$2011 millions)

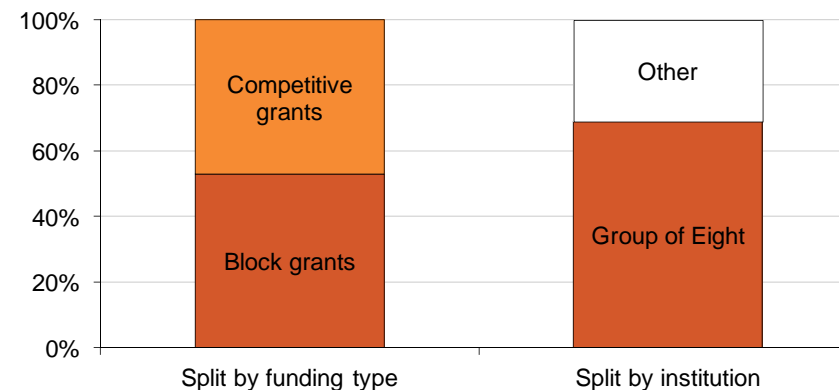


Source: Evans (2011a), and information provided to the Grattan Institute by DEEWR on request

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 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, the 'Group of Eight' or sandstone universities receive most research funding (see Appendix A for an institutional list).

Figure 18 – Breakdown of research funding, by type of fund and type of institution



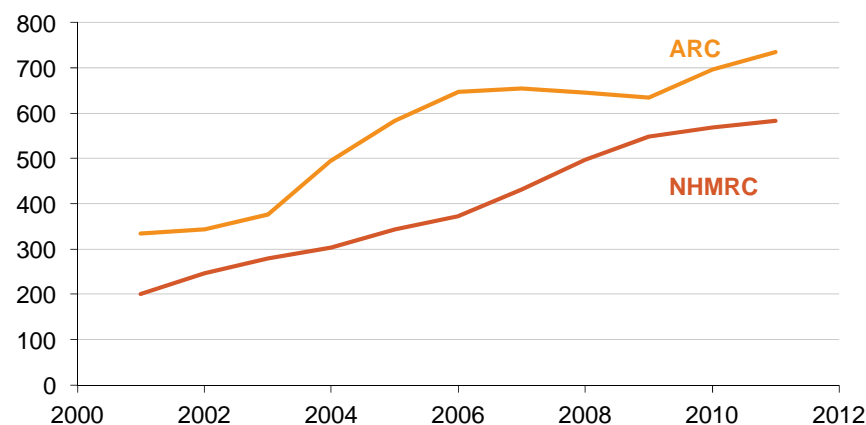
Source: DIISR (2010b); DIISR (2010a)

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. 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

Figure 19 – ARC and NHMRC grants to universities, 2001-2011 (\$2011 millions)



Source: DEST (2003-04); DIISR (2011-12); NHMRC (various years)

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.

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 grants, aimed at supporting excellent basic and applied research, less than 22% of the 3,544 applications in 2012 were funded. Success rates in 2012 were similar to previous years. Funded projects receive between \$30,000 and \$500,000 a year. 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, whether it will advance knowledge, whether it will provide benefits to Australia, and whether it is related to 'National Research Priorities'. These priorities include environmental sustainability for Australia, frontier technologies for Australian industries, promoting good health, and safeguarding Australia.

These national priorities also apply to the other main type of ARC grant, Linkage projects. These are aimed at encouraging 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 per year) than Discovery grants. Linkage grants have a higher success rate than Discovery grants – around 40% in recent years.

As with the ARC, NHMRC grants are very competitive. For project grants, the largest pool of money administered by the NHMRC, the 2009 success rate was 27%, slightly higher 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 2011, 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'. Success rates for program funding are volatile; the 21% in 2009 was much lower than in earlier years.

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 funding 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 funding helps sustain the 'research fabric' behind the competitive grant system. It provides indirect support for competitive grants, by helping to fund general research 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% 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 innovation. 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 \$332 million in 2011-12. It can be used to support any activity related to research. Its performance drivers are research student load, publications and research income, but excluding money from competitive grants. The exclusion of competitive grant income favours the research activities of universities outside the Group of Eight universities which enjoy the greatest success in ARC and NHMRC applications.

The Sustainable Research Excellence (SRE) program supports the indirect research costs associated with competitive grants. In 2011-12, it will provide \$165 million. In its initial years, after replacing a previous block grant, SRE funding was based on success in competitive grants, in part moderated by adjustment for research staff numbers. However, so that SRE is a driver for research excellence, the government plans to incorporate into its funding formula results in the Excellence in Research for Australia (ERA) exercise. This was the most comprehensive analysis of the quality of Australian research yet conducted. Each discipline at each university meeting a minimum output threshold was evaluated. Ratings ranged from one, meaning that performance in the discipline was well below world standard, to five, meaning that

performance in the discipline was well above world standard (there is more detail on ERA outcomes at section 8.2).

Research infrastructure is supported by the Research Infrastructure Block Grant scheme, which will receive \$224 million in 2011-12. 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 2011-12, it will provide \$632 million to support domestic students enrolled in doctorates and masters degrees by research. The major performance driver of institutional funding (50%) 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.

Non-performance based research funding

Until the Commonwealth Grant Scheme, some teaching-driven funding was for research. The legislation stated that the core operating grant was for teaching and research, and government documents claimed some of this grant as part of its contribution to research. The CGS is paid on student numbers, but the legislation does not specify how the money is to be used. The government no longer claims any teaching-driven funding as part of its contribution to research. However, a study of university costs

carried out as part of a recent review of base university funding found that a small proportion of the CGS is being spent on research.⁵⁹ University practice is to fund research in part out of teaching-derived income streams.

Non-performance based research grants are an important issue in Australian higher education policy design. Research is a legally-required part of being a university (section 1.3.1). Under a demand-driven funding system (sections 4.2.1, 5.3.1) academic staffing will reflect student choices by institution and field of study. The academics employed to teach them will need to be teachers and researchers. Yet the main research funding schemes are awarded on criteria that have nothing to do with undergraduate student numbers. So registration as a university requires an integrated teaching-research model, while funding policy drives teaching and research in different and potentially opposite directions.

One response to the teaching-research funding split has been extensive use of casual teaching staff. It is difficult to get precise numbers, but reports of forthcoming research based on university staff superannuation records suggest that less than half the academic workforce has a permanent academic appointment.⁶⁰ 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,

⁵⁹ Lomax-Smith, *et al.* (2011), pp 48 to 54

⁶⁰ Bexley, *et al.* (2011)

such as insecure jobs and fluctuating income; and for students, because staff turnover due to poor career opportunities loses 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. Future Grattan Institute papers will explore these options in more detail. 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% of teaching-driven funding should be 'associated' with maintaining research capability.⁶¹

4.2.5 Tax expenditures by government

Most of government's support for higher education comes via direct grants to higher education providers and students. However it also supports investment in higher education via tax deductions, which reduce the total amount of tax that the government would otherwise receive. The main categories of deductible higher education expenditure are education expenses linked to a taxpayer's current work and donations to higher education providers.

The Australian Taxation Office does not disaggregate its statistics on these deductions, so we cannot identify the higher education component. Total work-related deductions were around \$1 billion

in 2008-09.⁶² University finance reports record donations and bequests received by universities, which totalled \$218 million in 2010.⁶³ As not all this money would have been received from individuals or organisations liable for Australian income tax, it sets an upper estimate of how much could have been deducted.

If we assumed \$700 million in deductions on a marginal tax rate of 30%, tax expenditure would be \$210 million. Tax expenditure can only ever be estimated because there is an unknown counterfactual of what the taxpayer would have done without the tax incentive. While we cannot give a precise number for higher education tax expenditure, it is clearly a small expense in the context of overall public spending on higher education.

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 and student contribution payments by students, mainly from international students, were 13% of total university revenue in 1997 (\$12.5 billion), but 23% in 2010 (out of a total of \$22.2 billion).⁶⁴ For the public universities, payments on behalf of students through the HELP scheme were 12% of university revenue in 1997, but 14% in 2010. In 2010 dollar terms, HELP income doubled over the period 1997-2010, to \$3.1 billion. As explained in section 4.2.2, subsidies to the loan scheme mean that not all HELP lending should be counted as private

⁶¹ Lomax-Smith, *et al.* (2011)

⁶² ATO (2008-09), table 2.9

⁶³ DEEWR (2011c), table 1

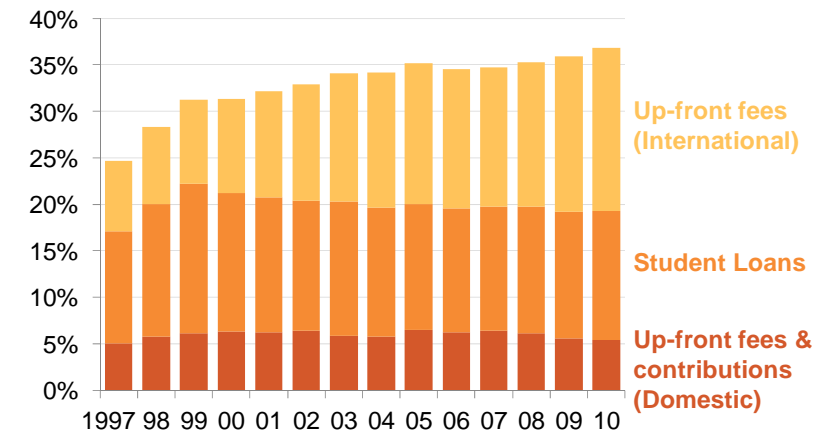
⁶⁴ Totals are in 2010 dollars. For the method of deflation, see the note to Figure 14.

expenditure. However, the overall trend is clearly towards more private higher education investment.

The increase in student contribution revenue and HECS-HELP payments, while an important public policy development, was not highly significant for how universities were managed. Though students were paying more, it did not give them additional market power. With the Commonwealth still effectively setting student contributions (universities could charge less than the maximum amount, but rarely did), there was no price competition in the Commonwealth-supported market. Other forms of competition were limited by the funding agreements between universities and the federal government. The move to a demand-driven system is the key structural change affecting Commonwealth-supported students, not the fact of private investment.

The increase in revenue from 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 among Australian universities, but between 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.

Figure 20 – Percent of universities' revenue paid by students



Note: Does not include 'other fees and charges'

Source: DEEWR (1998-2011)

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.

5. Higher education finance – the micro picture

Here we investigate the financing arrangements at the micro level. We discuss the public policy rationale for, and the impact of history on, the existing arrangements for Commonwealth-supported and full-fee student places. These are in a state of transition from a central-allocation to a demand-driven model.

5.1 Funding per student

5.1.1 Commonwealth-supported students

For Commonwealth-supported students, the total external funding per place is a combination of Commonwealth contributions (paid out of the Commonwealth Grant Scheme – section 4.2.1) and student contributions (which can be paid directly to universities by the student or borrowed under the HECS-HELP scheme – section 4.2.2). Both types of contribution are organised around the concept of the unit of study, or subject, rather than the concept of a course. Each subject is coded to a field of study, which determines its funding level. So the amount of money a university receives, and the amount that students pay, depend on which subjects students take. For example, if an Arts student enrolls in a business subject it will cost them the business rate, not the rate applying for humanities or social sciences. Because there are only four student contribution amounts compared to ten Commonwealth contribution amounts, student payments vary much less than the full price received by higher education

providers. Table 8 lists a range of subject areas and their funding levels, expressed as the rate for a full year of study.⁶⁵

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. Though these funding relativities were intended to be a transitional measure, they were brought back in 2005 when the Commonwealth Grant Scheme came into effect. 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 some disciplines received increased government funding in 2008.

Total funding rates per discipline, and the relativities between them, were also affected by changes in the student payment system. Before 2005, HECS was a government charge. So increases in HECS improved the government’s finances, but made no difference to universities. From 2005, HECS was converted into ‘student contributions’ paid to universities.

⁶⁵ The government has announced that from 2013 new students in science and math units will pay the \$8,050 student contribution rate: Treasury (2011).

Table 8 – Maximum contributions for a 2012 Commonwealth supported place (student taking out HELP loan)

	Contribution per EFTSL			% paid by student
	Student	Govt.	Total	
Humanities	\$5,648	\$5,168	\$10,816	52%
Law, accounting, administration, economics, commerce	\$9,425	\$1,861	\$11,286	84%
Mathematics, statistics	\$4,520	\$9,142	\$13,662	33%
Behavioural science, social studies,	\$5,648	\$9,142	\$14,790	38%
Education	\$5,648	\$9,512	\$15,160	37%
Clinical psychology, allied health, foreign languages, visual and performing arts	\$5,648	\$11,243	\$16,891	33%
Computing, built environment, other health	\$8,050	\$9,142	\$17,192	47%
Nursing	\$5,648	\$12,552	\$18,200	31%
Science	\$4,520	\$15,983	\$20,503	22%
Engineering, surveying	\$8,050	\$15,983	\$24,033	33%
Agriculture	\$8,050	\$20,284	\$28,334	28%
Medicine, dentistry, veterinary science	\$9,425	\$20,284	\$29,709	32%

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

The universities were also given the power to set student contributions, up to a legislated maximum. For most disciplines, the maximum was 25% 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.

This 25% increase was better news for some disciplines than others. Table 8 can help explain why. If most of the income for a student place comes from students, as it does for business and law places, a 25% increase to that component represents a substantial overall increase in income per place. But if only a small proportion of total income per place comes from students, as it does for science or nursing, a 25% increase in that component of total funding leads to only a modest overall increase. This means that flat percentage increases (or decreases) in student contributions have very different overall funding effects between disciplines.

As noted in section 4.2.1, the purchasing power of higher education funding was reduced by the federal government's indexation system. Though most public criticism of indexation rates concentrated on government grants, the same system applied to student contributions. So the pattern for students has been occasional large increases in what they pay for their higher education, followed by years of small annual real reductions in costs.

For Commonwealth-supported student places, we have an odd pricing system. 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 by is not considered. What students might want to purchase, such as smaller class sizes or better facilities, is irrelevant.⁶⁶ The maximum fee is set by legislation; as noted above it reflects a Senate compromise, not any course delivery consideration. The pricing system reflects historical and political, rather than current higher education, considerations.

Given the problems with the current system, the base funding review commissioned by the federal government, which reported in late 2011, offered a rather limited alternative. Based on a study of current costs carried about by Deloitte Access Economics, it recommended increases for some clusters.⁶⁷ However, it did not propose a method for future re-adjustment of funding levels. Given the importance of prices in a demand-driven system (see section 5.3.1), a more dynamic system of setting prices would better suit the overall policy framework.

Of the total price received by higher education providers 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 HECS 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 salaries. So the concept of private benefit is directly used in the higher education funding system, while public benefit is not.

The base funding review proposes that the public benefit should be used to set Commonwealth and student contribution levels. It defines public benefits as the 'fiscal dividend' government receives from taxing the earnings of graduates, plus various non-financial benefits such as more informed public debate (see section 8). It is not entirely clear whether the base funding review panel believes that public subsidies produce public benefits, or whether public subsidies are some kind of reward for producing them. In any case, they recommend that total costs be divided between students and government, on a 40%/60% basis.⁶⁸ This means that student contributions that currently exceed 40% of total costs (table 8 above), such for law and business courses, would be reduced. Conversely, student contribution currently set

⁶⁶ They can however pay for a faster service, with universities able to charge full fees for summer or winter school units.

⁶⁷ Lomax-Smith, *et al.* (2011), pp 55 to 62

⁶⁸ Lomax-Smith, *et al.* (2011), pp 102 to 103, and 108 to 113

below 40% of current costs, such as health and education courses, would be increased.

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 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.

There is not much research into fee-setting by Australian universities. One published study, using 2010 fee data, showed large differences between cheapest and most expensive universities in the fees charged for international undergraduate students.⁶⁹ 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.⁷⁰

⁶⁹ Beaton-Wells and Thompson (2011), appendix 4

⁷⁰ Subsequent research showed that average costs for science and engineering are below the Commonwealth supported rate: Lomax-Smith, *et al.* (2011), p 49. In science especially, the low rate is likely to also reflect weak demand from international students, who mostly choose courses with clear careers.

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. It may be that on average research-intensive universities spend more on teaching.⁷¹ But this correlation also suggests that part of what international students are buying from the more expensive universities is their prestige, which is linked to research performance. Indirectly, they get what they pay for.

If teaching revenue is diverted to research on a large scale, it has implications for higher education and research funding policy. It suggests that research can at least partly be funded by profits from teaching, providing an economic rationale for the joint production of the two activities (see section 1.3.1 for more on the teaching-research relationship). However, 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.

5.2 Spending per student

Though we can identify most revenue coming to public universities from teaching (sections 4.2.1, 4.2.2, 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 between

⁷¹ Regression analysis in Lomax-Smith, *et al.* (2011) (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.

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 funding. They found that median undergraduate teaching and scholarship costs were below funding 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.⁷²

The observed behaviour of public universities suggests that average funding for Commonwealth-supported places is sufficient, at least on a teaching-only cost basis. If it was inadequate, we would expect public universities not to take any more Commonwealth-supported students than was necessary under their funding agreements. However, we observe significant 'over-enrolment' – students enrolled in excess of 2011 university funding agreements. Collectively, universities are forecast to over-enrol by around 13% in 2011, and some universities are more than 20% above their funding agreement target. This suggests that it is financially viable to take more students on current funding rates.

⁷² Lomax-Smith, *et al.* (2011), pp 48 to 50. Research costs were research not funded by a specific source of research funding, such as the grants described in section 4.2.4.

University behaviour is consistent with the base funding review's cost figures. 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 very common in academia. Half or more of the academics students encounter may not have permanent academic jobs. 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 over-enrolment may be low marginal costs. The marginal cost is the cost of adding another student. This could be quite low where students can be placed in existing infrastructure and classes that are being offered in any case. Where enrolment is only moderately above the funded level it is possible that the additional students are profitable. However, the marginal cost can be high when the additional student requires significant new infrastructure.

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 public university course), so the underlying teaching costs may be lower.

A future Grattan Institute project will investigate costs and fees in the non-university higher education sector.

Universities always claim to be under-funded, but it is difficult to evaluate whether or not this is true, and if so to what extent they are under-funded. 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? No government will sign a blank cheque for inefficient or extravagant university spending.

5.2.1 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 8 above are not recommended internal funding rates. At least to date (see section 5.3.1 below), these rates have more been a way to calculate a block grant. 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 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.

5.3 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 places accordingly. The priorities could be for particular disciplines, particular higher education providers, or particular types of students. While students cannot be coerced into taking the places created by government-priority setting, the system limits their opportunities. Holding the total number of places below demand helps this system work. People who want to go to university eventually have to take what is available. Priority-setting can be supported by shaping student incentives, by changing fee levels or offering scholarships.

In a market distribution model, the interaction of higher education providers and students dictates what courses are offered. There are no formal limits on the number of higher education institutions or students. Rather than being allocated places, higher education institutions have to compete for students. While in the central allocation model student preferences need not be a major input

into decision-making, in the market distribution model student preferences are a critical driver. As in other markets, higher education suppliers help shape preferences through the courses they offer, the prices they charge, and their advertising. But they have few protections if they do not respond to student demand. 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 (see chapter 2 for student numbers). A 'voucher' scheme is a hybrid market model, with the government influencing student choices through affecting the cost of education, but otherwise using a market to distribute student places. Such schemes may have literal vouchers – documents sent to prospective students that they can redeem at higher education providers. However, a literal voucher is not necessary if higher education providers can identify eligible students through alternative means, such as citizenship or prior academic results.

5.3.1 Distributing Commonwealth-supported places

Australia's system of distributing Commonwealth-supported places is in a state of transition. It is moving from a version of the central allocation model to a voucher version of the market distribution model. In each case, the actual policy is an impure version of the theoretical models described above.

The Australian government has always restricted which institutions are eligible for Commonwealth-supported places. As described in section 4.2, full eligibility is restricted to the public universities. A limited number of places have been allocated on an ad hoc basis to other higher education providers. This restricted eligibility is a continuing feature of the 'demand-driven'

system introduced in 2012. One important element of a fully competitive market will be absent.

For the allocation of Commonwealth-supported places to disciplines, the key steering mechanism has been the funding agreements universities sign with the federal government. The agreements set out the number of funded places in each of eight funding clusters, with allocations at undergraduate and postgraduate levels. In theory, the funding agreements gave the federal government significant power to steer the provision of places. In practice, they rarely did so on a large scale. The government's main mechanism for influencing what places were offered was through funding new higher education places. When they did so, they were often very prescriptive. The funding agreements specified particular courses and campuses.

Under the funding agreement system, the vast majority of higher education places were allocated on an historical basis. The most useful information in predicting the content of next year's funding agreement was the content of last year's funding agreement. There were no direct penalties for departing from the overall disciplinary mix in the funding agreement. However, at various times there have been penalties or disincentives for under- or over-shooting the agreed total number of places or the agreed total amount of funding.

This was not a dynamic system. Apart from the new places – and often there were no new places – it was not centrally planned. There were no in-built mechanisms for responding to labour market or student demand. It relied on employer complaints or other political pressure combined with available funding to get new places allocated in useful ways. Though the universities had

some ability to alter their course mix according to their own priorities or student demand, the system did not facilitate this. For example, if a university shifted places from a low-subsidy cluster to a high-subsidy cluster it could not be paid more than their maximum available funding. And with demand exceeding supply for Commonwealth-supported places, universities did not always need to respond to student demand, even if they could within their funding agreement.

Figure 21 shows that responsiveness to demand varies significantly by discipline. It shows the percentage of 2011 applicants who received an offer for their first preference by field of study. For the elite health courses such as medicine and dentistry, demand greatly exceeded supply.⁷³ However, in many other fields of study an applicant had an 80% or higher chance of receiving an offer (though not necessarily from their first-preference university). In the natural and physical sciences, the offer rate exceeds 100%. This occurs due to universities offering science places to applicants who did not have science as their first preference. Many field of study imbalances between supply and demand are long-standing features of the Australian higher education system.

The charts in figure 22 show supply and demand trends since 2001 for engineering and health, two fields of study that saw increased demand during the decade, compared to all other courses. 'Supply' is commencing undergraduate places, and 'demand' is first preference applications. The absolute numbers have been converted to an index with a base of 100 in 2001, to

make it easier to see the trend. In absolute terms, demand always exceeds supply.

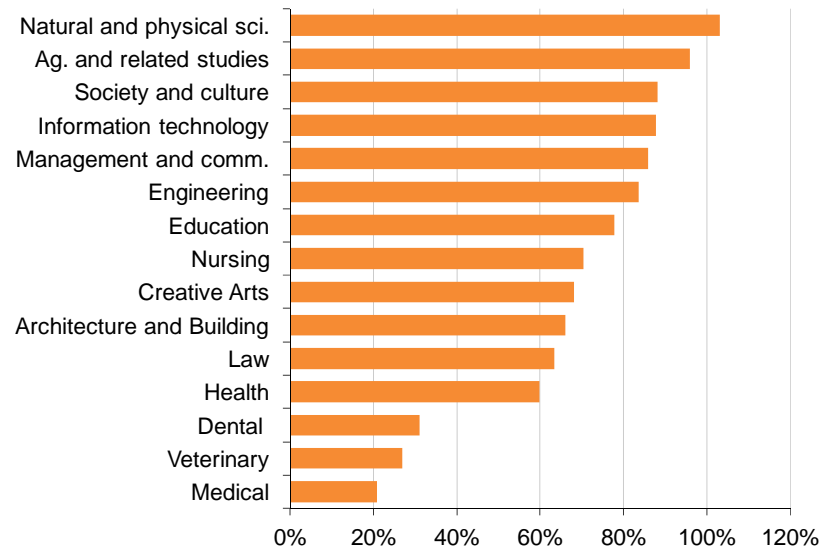
In the early 2000s the universities were cutting back on commencing students, responding to a policy change that penalised them for over-enrolment. The figures show that courses other than engineering and health took the brunt of the cutbacks, but that the universities did not re-orient existing student places to meet strong demand for health places. It took new places, which began being allocated in significant numbers in the middle of the decade, to get universities to respond. Where university places are allocated by government, an activist central planner is needed to steer the supply of places towards student and labour market demand. The absence of an activist central planner was a critical weakness in the old funding agreement system.

In 2012, the government will lift most funding agreement constraints on Commonwealth-supported places. It took this decision to increase higher education attainment in Australia. It aims for 40% of 25 to 34 year olds to have a bachelor degree of higher by 2025.⁷⁴ The figure was 35% in 2011.⁷⁵ The government believed that the higher education system as it was in 2009 would not produce enough graduates to meet Australia's 'economic needs'. A demand-driven system was not essential to meeting the 40% attainment goal. The government could have negotiated with or required universities or other higher education providers to take additional students.

⁷³ This is due to restrictions on clinical training places for hospitals as well as constraints in the higher education system.

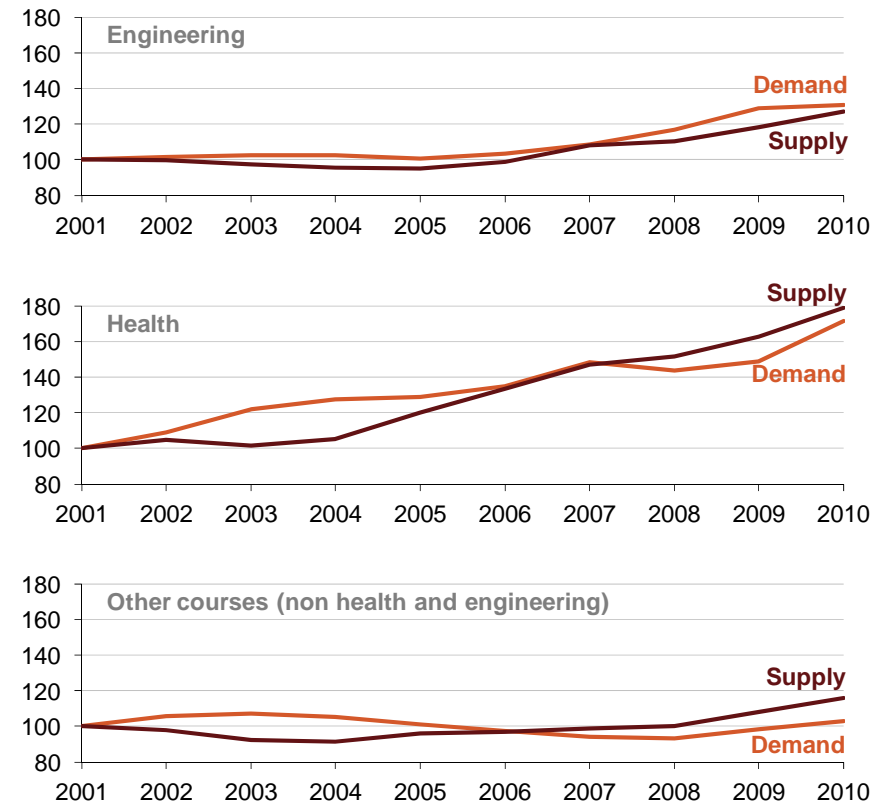
⁷⁴ DEEWR (2009b), p.12

⁷⁵ ABS (2011a), table 8

Figure 21 – Applicant offer rate by discipline

Source: DEEWR (2011f)

Not everybody believes that a 'demand-driven' system is a good idea. The core criticism is that teenage university applicants are not the people who should decide what courses universities offer. Even student leaders aren't sure that they should have so much influence. In 2009, then National Union of Students president David Barrow warned of student faddishness. 'When Grey's Anatomy is on, everyone wants to be a surgeon. When CSI Miami and NCIS came on TV, forensics tripled,' he told the *Campus Review* newspaper.

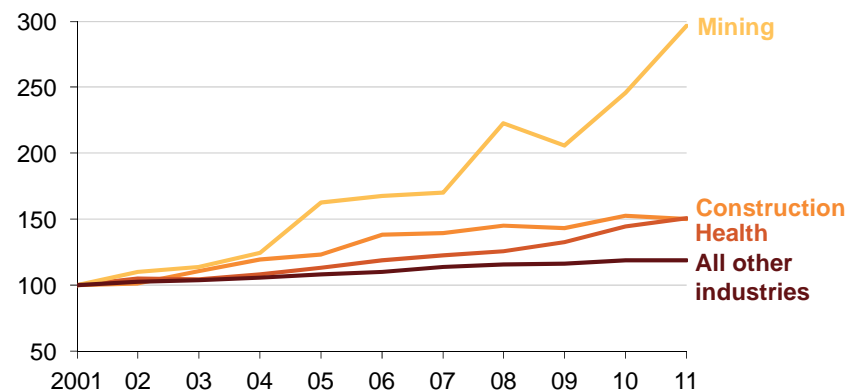
Figure 22 – Index of demand and supply by discipline (2001=100)

Source: DEEWR (2001-2010); DEEWR (2011f)

Wariness of teenage judgments makes intuitive sense. But over the last decade teenagers spotted and responded to skills shortages more quickly than the government. Demand increased for engineering and health, presumably because employment in the construction, mining and health industries was growing more quickly than in other industries. Figure 23 shows the trends (see also the discussion of skills shortages in section 8.1).

Over-supply of certain kinds of graduates occurs with the current system too (see section 7.3 for more detail on graduate employment outcomes). Some mismatch is an inherent feature of education and training – while some choices are better-informed than others, nobody can perfectly predict future labour market needs. The promise of higher education is that it provides adaptable cognitive skills, not that it always provides the job-specific skills graduates will need in their future employment.

Figure 23 – Index of employment growth by industry (2001=100)



Source: Based upon ABS (2011b)

Faddish teenagers are not the main weakness in Australia's demand-driven system. The more serious concern is that the incentive for universities to respond to demand is the price they receive, but the price system has not been reformed (section 5.1.1). While on average universities seem to have teaching costs and revenues in rough alignment (section 5.2), the *Higher Education Base Funding Review: Final Report* showed that this was not true for all fields of study or all institutions. In theory, universities could respond to discipline-level losses by cutting supply, regardless of demand. In the pre-2012 centrally-controlled system, the funding agreements put a brake on such movements.

Enrolment growth in anticipation of the demand-driven system shows no sign of unanticipated cuts, at least at the broad field of study level. All fields are showing growth in student places. But hybrid market-central control systems, with supply deregulated but prices regulated, are vulnerable to these drivers pulling in opposite directions. For example, demand for health courses and graduates has grown strongly in recent years. Yet the base funding review suggests that at least some health courses are priced below cost for universities. Lifting the funding agreement controls gives universities more scope to follow the financial incentives, and reduce the supply of health places to save money.

The demand-driven system and the centrally-controlled system it replaces share a weakness: they require political action to adjust a key steering mechanism. In the old system, the government was needed to allocate or re-allocate places. In the new system, the government is needed to change the price incentives higher education providers receive. Higher education, however, is rarely a top political priority. This leaves the mechanisms for distributing student places susceptible to political neglect.

6. Higher education policymaking

The policymaking institutions in the higher education sector are complex, and in a state of flux. We review them here, with a brief comment on the implications of change for the sector.

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. They still have a legal right to be consulted about new higher education providers in their jurisdictions. They are expected to still 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, and having to meet other Commonwealth policy objectives. At least in the short term, the private higher education sector supports the new arrangements. They often found the State regulators unsatisfactory, and multi-state institutions faced much regulatory duplication. There are efficiencies from a single regulator, 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

In late 2011, the Prime Minister announced a reconfiguration of the ministries funding higher education institutions. Core tuition funding, student loans and income support aspects of Australian higher education policy had been handled by the Department of Education, Employment and Workplace Relations (DEEWR). Research funding had primarily been the responsibility of the Department of Innovation, Industry, Science and Research

(DIISR). The two policy areas are being brought together in a new 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. In higher education, he has been working on a policy agenda largely set by Julia Gillard when she was education minister. The previous DIISR minister, Senator Kim Carr, had put in place a significant research policy agenda, including the Excellence in Research for Australia exercise. It seems unlikely that Senator Evans will depart significantly from the agenda set by Carr.

In DEEWR, neither Julia Gillard nor Chris Evans had a background in education policy. The government has used external reviews to drive policy, though it is difficult for outsiders to know how influenced the reviews are by the minister and the DEEWR public servants who staff their secretariats. The broad shape of current policy was set by a review headed by former vice-chancellor Denise Bradley. The Bradley review reported in December 2008, and most of its recommendations were accepted in the *Transforming Australia's Higher Education System* policy statement of May 2009.⁷⁶ These included the demand-driven funding system and TEQSA. The government has not yet responded to the *Higher Education Base Funding Review: Final Report*, which was delivered in late 2011.

Senator Carr had a longstanding interest in research policy and service as the relevant shadow minister. He made less use of external reviews of core policy areas than the DEEWR ministers. However, he did commission a review on the 'national innovation

⁷⁶ DEEWR (2009b)

system' that covered aspects of higher education research policy.⁷⁷

Within the old DEEWR, the most senior bureaucrat working exclusively on higher education policy was the higher education group manager. There has been high turnover in this position, with fourth person to hold this job in three years starting work in October 2011. There has also been significant turnover in DEEWR deputy secretaries responsible for tertiary education. The creation of DIISRTE will lead to further personnel changes. The higher education group has a new DIISRTE departmental secretary, the former DIISR secretary Don Russell (who started his job in June 2011). In DEEWR, the department secretary, Lisa Paul, had been the only long-term senior bureaucratic figure responsible for higher education. Despite job turnover, however, DEEWR did deliver the major reforms promised in 2009 on schedule for early 2012.

Long delays in releasing data collected by DEEWR hamper analysis of how well the higher education system is performing. For example, applications, offers and acceptances data will be an important indicator of what is happening in the demand-driven funding system (section 5.3). It can show institutions or fields of study experiencing unusual shifts in demand and track changes in institutional behaviour, such as expanding or contracting in particular fields of study. The full 2011 data were not released until December 2011, months too late to make major changes for 2012.

⁷⁷ The *Venturous Australia* report suggested increases in research funding and changed policies for distributing the funding: DIISR (2008).

DEEWR also had an international group, covering all forms of international education. It has a role in government policy on visa conditions for international students coming to Australia, and migration possibilities on completion of their courses. Given the higher education sector's financial reliance on international students, policies on temporary and permanent migration have a significant impact. As with core higher education policy, the government has used external reviews to assist its policymaking. The international group has also gone to DIISRTE.

6.2.2 Tertiary Education Quality and Standards Agency

The Tertiary Education Quality and Standards Agency (TEQSA) is in the process of being established and commencing operations. Its first Chief Commissioner is Dr Carol Nicoll. The main task of TEQSA is to apply and enforce the TEQSA legislation and the standards created under the TEQSA legislation. TEQSA has substantial operational independence from the relevant ministers, for tertiary education and for research (in 2012, they will be the same person).

The education minister performs the key policymaking function under the TEQSA legislation, which is setting the standards applying to higher education providers. 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 education minister advises on the content of the standards. Before making a standard, the minister needs to consult with state education ministers, TEQSA, and other federal minister (the research minister has responsibility for the research standard only).

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

There are occasional criticisms of the research grant agencies. The media sometimes question funded projects with seemingly obscure or trivial topics. Academics sometimes claim that the peer view process results in 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, a lot of

resources are wasted preparing and assessing applications that are rejected. Some projects are deemed 'fundable' – of high quality and worthy of funding – but not funded, given overall limits on resources. However, this is a by-product of the overall funding and policy framework. It is not something the ARC or NHMRC can do much about.

6.2.4 Other influential departments

Higher education and research have their own policy frameworks, ministries and agencies. But they of course do not work in isolation from the rest of government. The government's overall budgetary position has a major influence on the amount of money available for higher education. This is determined by the departments of Finance and Treasury. As noted in section 6.2.1, above the visa conditions for international students and their migration possibilities on completion are important for universities. Consequently, the Immigration department is also influential for the finances of higher education institutions.

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

This section 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’.⁷⁸ 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.⁷⁹ Some graduates report that challenging students to achieve high academic standards is an area in which universities could do better.⁸⁰

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

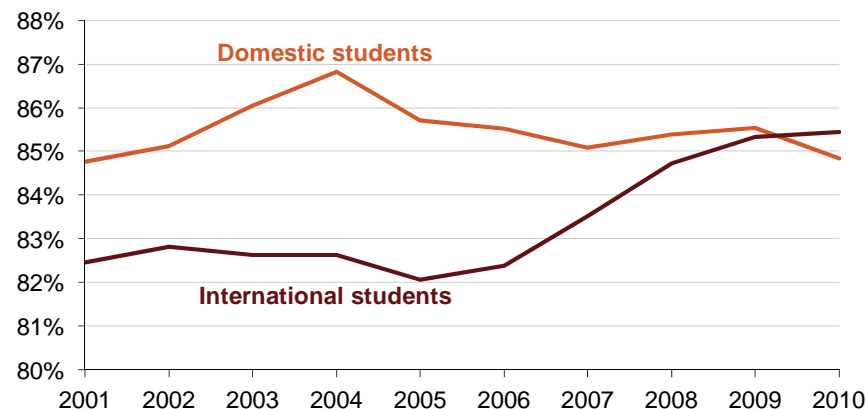
decentralised than school education, leaving us without key information needed to assess trends in academic standards, or to compare them between institutions. There is an international project, led from Australia, that may partly remedy this situation. The OECD-backed Assessment of Higher Education Learning Outcomes (AHELO) project will compare engineering and economics students in 16 countries. The feasibility study will be completed in 2012. If successful and implemented on a larger scale, 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 the academic standards issue. Figure 24 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.

⁷⁸ Bexley, *et al.* (2011), p 30

⁷⁹ For example, Economic Society of Australia (2004); The Economic Society of Australia (2004)

⁸⁰ Coates and Edwards (2009), p 52

Figure 24 – Pass rates for commencing domestic and international students

Source: DEEWR (2010c)

For domestic students, pass rates are quite stable. Each year, around 85% of units attempted are passed. The small fluctuations seem associated with the size of the commencing student intake. When commencing student numbers fell between 2001 and 2004, the pass rate went up. As commencing enrolments recovered, 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.⁸¹ 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 the entry scores required for admission. These

⁸¹ Over 2001-10, there is a correlation of -0.56 between the number of commencing domestic undergraduate students and the pass rate.

weaker students are more likely to fail, and so push down the pass rate.⁸²

While the domestic commencing student pass rates provide no evidence that courses are getting easier or marking is getting softer, figure 24 shows a steady increase in pass rates for international students after 2005. 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.⁸³ 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.⁸⁴ 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.

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

⁸² Though it does not examine the cause of students dropping out, Lomax-Smith, *et al.* (2011) show that there is a clear relationship between year 12 results and completion rates (pp 75 to 80).

⁸³ Edwards (2008)

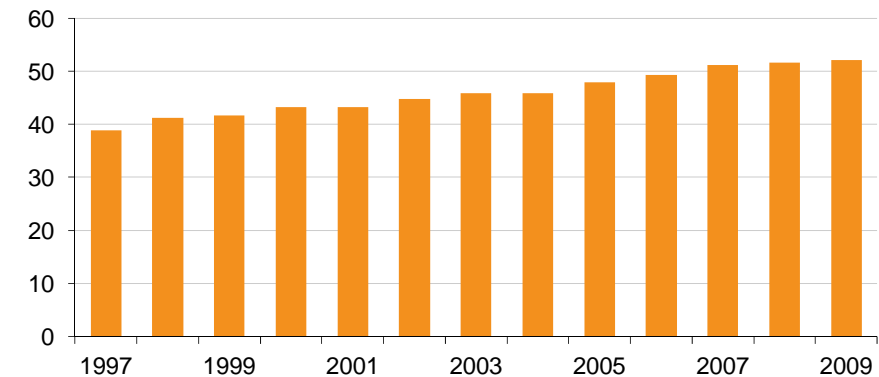
⁸⁴ DEEWR (2010c)

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 relatively 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 25 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% to 65%, though a change in the response options is likely to be a major factor explaining this increase.⁸⁵

⁸⁵ 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 25 – Mean student satisfaction with teaching



Source: GCA (1997-2010).

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% in the late 2000s, and was 81% in 2010.

The CEQ contacts graduates shortly after course completion. The 2008 Graduate Pathways Survey records 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 61.⁸⁶ 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.

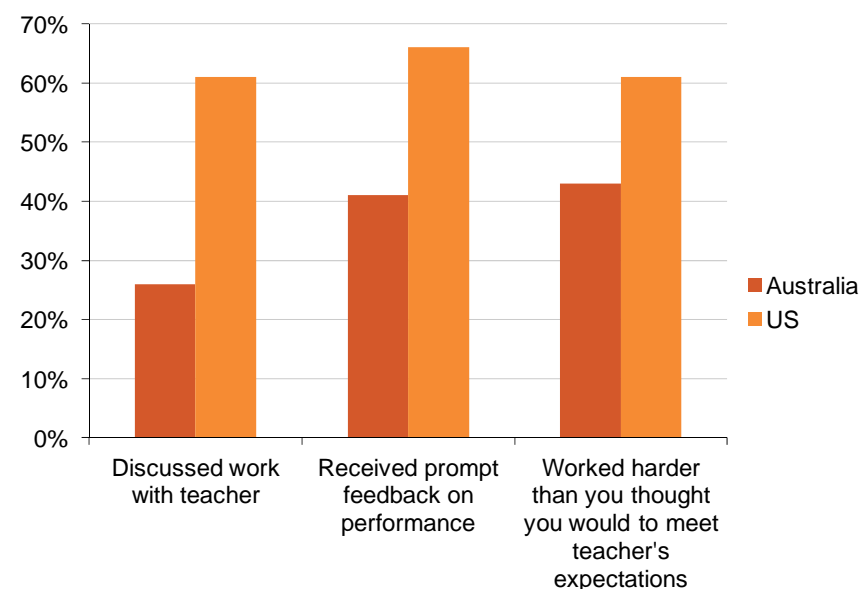
In recent years, the Australasian Survey of Student Engagement (AUSSE) has collected the views of first and later-year students. AUSSE is a rich source of information about the student experience at Australian and New Zealand higher education institutions. It shares questions with the American National 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. In the questions shown in figure 26, 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. Australian students are also 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.⁸⁷

⁸⁶ Coates and Edwards (2009), p 45

⁸⁷ Arum and Roksa (2011), p 93

Figure 26 – AUSSE/NSSE student survey results (2010), students responding 'often' or 'very often'



Source: ACER (2010)

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.

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.⁸⁸ 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.⁸⁹ 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.

⁸⁸ University of Melbourne (2011), pp 9 to 10

⁸⁹ Coates, *et al.* (2009), esp. pp 21-22

From early 2012, a *My University* website, modelled on the *My School* website, will provide 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 guide to possible trends. 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.⁹⁰ 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. In 2011, graduate rates of unemployment were better than for the rest of the population (2.5%/4.5%). Fewer graduates than others were out of the workforce (12%/24%).⁹¹ When unemployed, graduates tend to find work more quickly than other job-searchers (41%/36% unemployed eight weeks or less, 13%/19% unemployed a year or

⁹⁰ ABS (2009b), table 5

⁹¹ ABS (2011a), table 10. The Education and Work publication records slightly lower overall unemployment figures than other ABS labour surveys.

more).⁹² However, upper-level vocational qualifications (certificate III/IV in the Australian Qualifications Framework, see section 1.1) also provide good employment outcomes: 3.6% unemployed, 12.7% not in labour force; see table 9 for salaries.

Given the financial and other benefits of employment, being able to get any job is a good outcome. 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'.⁹³ In 2011, 74% of university graduates in work had jobs classified as managerial or professional.⁹⁴ The 2008 Graduate Pathways Survey suggests that it takes some graduates time to find these jobs. The rate of professional or managerial employment increased from 51% in graduates' first year out of university, to 63% five years out.⁹⁵

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% of all employed persons had university

degrees, and 77% of them were in jobs described as 'professional, technical etc' or 'administrative, executive and managerial'.⁹⁶ Despite the share of the workforce with university qualifications having more than tripled to 27% by 2011, the proportion of graduates in 'matched' jobs has not changed much in 30 years.

7.3.2 Income

On average, graduates earn more than other workers. However, graduates are not a random group in the workforce. Universities typically select students based on prior academic achievement. One reason graduates receive above-average salaries is that they have above-average ability levels, which the labour market would have rewarded whether they went to university or not. Many studies moderate their estimates of higher education's financial advantages to take account of 'ability bias'.⁹⁷ In the numbers that follow graduate incomes are not adjusted, but this factor should be taken into account.

Table 9 shows the 'graduate premium' compared to other qualification levels, using median weekly earnings. Compared to someone whose highest qualification is year 12 completion, a bachelor-degree graduate earns 1.7 times as much per week. Someone with a postgraduate qualification earns 2.1 times as much. Particularly for men, however, the upper-level vocational qualifications provide another comparison point. While relatively few women pursue these qualifications, for many young men their post-school choice is between vocational education, higher

⁹² ABS (2010b) table 8

⁹³ ABS (2009a)

⁹⁴ ABS (2011a)

⁹⁵ Coates and Edwards (2009), p 75. A 2010 survey of graduates three years finds the same pattern of improvement over time, but significantly higher rates of professional and managerial employment: GCA (2011a), p 3.

⁹⁶ ABS (1982)

⁹⁷ See the useful discussion of ability bias in Leigh (2008).

Table 9 – Median earnings by highest qualification level, 2009

	Median weekly earnings	Graduate compared to Year 12	Graduate compared to Cert III/IV
Graduate Diploma/Graduate Certificate or above	\$1,438	2.14	1.64
Bachelor Degree	\$1,151	1.72	1.31
Advanced Diploma/Diploma	\$920	1.37	1.05
Certificate III/IV	\$877	1.31	1
Certificate I/II	\$500	0.75	0.57
Year 12	\$671	1	0.77
Year 11	\$640	0.95	0.73
Year 10 or below	\$671	1	0.77

Source: Based upon ABS (2010a)

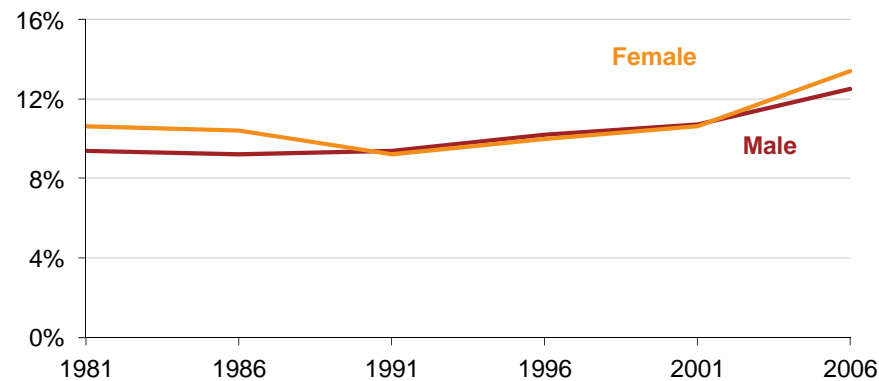
education, and immediate job searching. Upper-level vocational courses are shorter, cheaper and less academically-demanding than university courses. They offer similar protections against unemployment as bachelor degrees. However, the earnings premium over year 12-only is less than half as much as a bachelor degree. The main reason for this is that earnings for workers with vocational qualifications tend to plateau in their late 20s, while graduates' earnings tend to plateau in their 40s.

The graduate premium is the easiest and most intuitive way of expressing the earnings advantage of a higher education qualification. However it does not take into account of the costs of

higher education. These include direct costs such as tuition charges (see section 5.1.1) and textbooks, and indirect costs such as time spent out of the workforce. These need to be deducted to identify the net financial benefits of higher education. Taking costs into account, economists can also calculate 'rates of return' on higher education investment. Roughly speaking, the higher education rate of return is the annual earnings premium as a percentage of the original costs incurred. Rates of return can be used to compare higher education with other investments, and the benefits of higher education at different times.

The Australian Bureau of Statistics has used census data to calculate rates of return on higher education investment over time. Figure 27 shows the post-tax returns on a bachelor degree compared to someone whose highest qualification was to complete secondary school. The main cost is being out of the labour force while studying. In later years, the costs of HECS and student contributions are included. The return is the after-tax premium earned by a graduate compared to someone who did not go on to further education after year 12 (the same concept as table 9, but with tax taken out). For each census year, the average person is aged through that census. For example, it was assumed that someone who was 18 in 1981 would at age 23 earn what on average a 23 year old earned in 1981. Despite increases in direct costs of higher education, the rate of return was largely stable over the twenty years 1981-2001, with an increase in 2006. There is no sign here that employers have become less willing to pay for the skills of graduates.

Figure 27 – 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 upon ABS (2010c)

Indeed, using a different methodology and ageing the average person through census years – for example, assuming that someone aged 18 in 1981 would at age 23 earn what an average 23 year old earned in the 1986 census – the rates of return were higher than shown in figure 27. In other words, the labour market changed in ways that made it more financially advantageous to be a graduate.

7.3.3 Job satisfaction

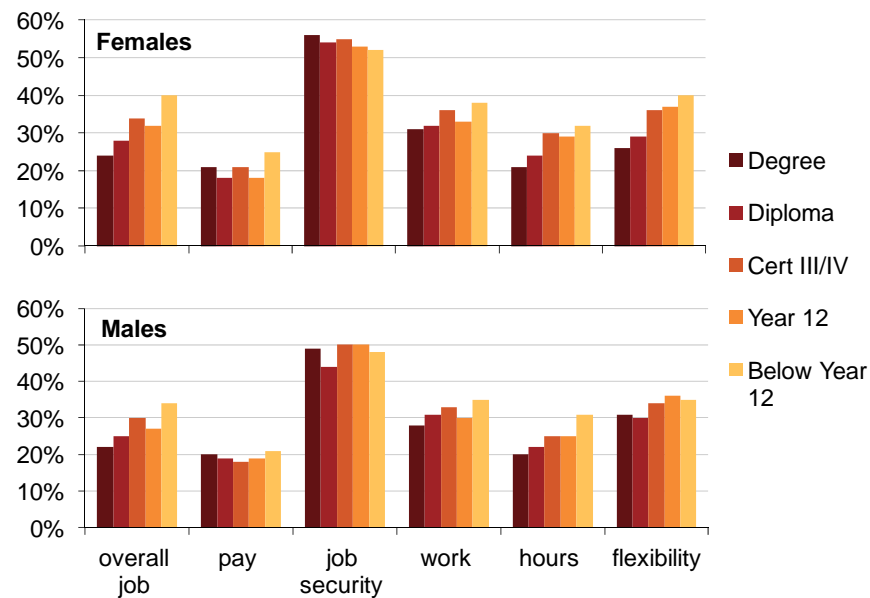
By objective standards, most graduates get good jobs that pay well. But their subjective reaction to those jobs is not so positive. While most graduates (like most workers) are broadly satisfied with their jobs, graduates are less likely to express high levels of

satisfaction than people with other qualification levels. Figure 28 shows high-level job satisfaction by education level, defined as a self-rating of nine or ten on a zero to ten scale. On more specific questions, the gap between education levels was greatest for questions about hours worked and flexibility. Professional and managerial jobs tend to have longer hours than other workers, which may account for some of the differences.

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.⁹⁸

⁹⁸ Coates and Edwards (2009), pp 84 to 86

**Figure 28 – Job satisfaction by highest level of education
(percentage satisfied 9 or 10 out of 10)**



Source: *Household Income and Labour Dynamics Australia survey data, as reported in Mavromaras (2011)*

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

After discussing how well the higher education is meeting the needs of students, we now look at how well it meets the needs of the country. Are employers' skills needs met? Is the 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 skills needs. However, as explained in section 5.3.1, skills have not been a systematic focus of higher education policy. New Commonwealth-supported places were only sometimes allocated in response to employer complaints about shortages in particular skills areas. Prices of Commonwealth-supported places have sometimes been set to promote demand – for example nursing and teaching 2005-2009, and science and maths 2009-2012. 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 judgment on the higher education system's performance in responding to skills needs requires some qualification. As noted in section 5.3.1, predicting future skills needs is inherently difficult. Labour market demand predictions by economic modellers can be hopelessly wrong.⁹⁹ 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 which 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 cannot be held responsible for the inability or unwillingness of employers to offer jobs or 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 the supply of graduates has been sufficient.

However, in 24 mostly professional occupations DEEWR's skills shortages list identifies persistent employer difficulties in finding appropriate staff. Table 10 shows occupations that have appeared on the skills shortages list in at least five of the last ten years.

⁹⁹ For examples, see Norton (2009), p 22.

Table 10 – Skills shortages by occupation

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

● indicates that the industry reported shortages in general

X indicates that the industry reported shortages and that more than 95% of graduates in the discipline were being employed

Notes: [^]No graduate employment data were available; *an internship year may overstate the employment outcomes for new pharmacists; **excludes petroleum

Sources: GCA (2011b), DEEWR (2011e)

DEEWR's information has been modified in table 10 to include results of the Graduate Destination Survey, which asks students who recently completed their courses whether they have found full-time work. This is necessary context when examining skills shortages and education, as recent graduates cannot fill roles requiring experience. In the health-related occupations that make up over half of the list, graduate employment markets are generally tight, with more than 90% of recent graduates looking for full-time work having found it a few months after course completion. In some occupations, the graduate labour market is very tight with more than 95% in work, marked with a 'X' in table 10. This suggests that demand is strong for the inexperienced workers higher education can provide. For other occupations, skills shortages exist alongside a pool of relevantly-qualified graduates struggling to find full-time work. In childcare and school occupations, inadequate salaries are likely to be a larger issue than any dysfunction in the education system. In the case of accounting, although graduates have reasonably good job prospects, employers often look for more than just a qualification. This seems to disadvantage some prospective accountants.

Each year, Graduate Careers Australia surveys graduate employers about their recruitment intentions and the quality of graduate applicants. In 2010, around a quarter of employers reported that they would have recruited more graduates had a larger number of better candidates been available. This figure was more than 40% in 'accounting/finance' related jobs. In these surveys, 'poor or inappropriate academic qualifications or results' consistently ranks fairly lowly as a reason (in 2010, sixth out 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, drive and motivation and arrogance or selfishness.¹⁰⁰ Universities often have lists of 'graduate attributes' that include positive non-academic personal traits attractive to employers. However, it is not clear how well integrated these are into coursework and other aspects of university life.

8.2 Research performance

It is difficult to quantify the contribution of Australian research to Australian society and the Australian environment. Though government policy has focused on the contribution of university research to an Australian 'innovation system', clearly the research itself has much broader goals. A substantial proportion of research is curiosity-driven (section 3.2). Given the medical and scientific emphasis of Australian research, its findings are likely to be of global interest and use. Consequently, this section focuses on overall performance indicators without trying to isolate benefits specific to Australia.

As shown in section 3.3, the absolute quantity of research outputs, especially publications, from Australian universities has increased over time. As a measure of research productivity, we calculated 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 2005.¹⁰¹ However, this is not a measure of research quality or significance. Because the number of publications contributes to the promotion prospects of

academics and to university research funding, some people claim that the system encourages quantity over quality.

In early 2011, the results of the first 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 the standing of the journal in which research was published, 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 11. On this measure, most research-active departments in Australian universities appear to be of at least an adequate standard, at a rating of 3 or more, and therefore in a position to advance knowledge in ways that are useful or interesting. However, a substantial minority of research-active departments were rated as below world standard.

The ERA could also identify nineteen areas of national excellence, with four or more institutions receiving a rating of five. These included seven fields of research related to the human body and its health, and more than one field in each of physics,

¹⁰⁰ GCA (2011c)

¹⁰¹ Teaching and research staff were weighted as .4 of a full-time staff member to account for teaching work, while research staff were weighted as 1.

biology, and chemistry. Only one field from the humanities and social sciences, historical studies, reached this level of widespread excellence. A second ERA will be conducted in 2012.

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 12. Four Australian universities are in the top 100 universities in the world. This is a considerable improvement on two in the first year of the Shanghai Jiao Tong ranking, 2003. American universities dominate the top fifty.

Table 11 – Excellence in Research for Australia, 2010

Rating	Units of evaluation	Percentage
1 +2 (low)	843	35%
3	776	32%
4	508	21%
5 (high)	308	13%
Total	2435	100%

Source: ARC (2011)

Table 12 – Shanghai Jiao Tong university rankings 2011

University of Melbourne	60
Australian National University	70
University of Queensland Australia	86
University of Sydney	96
University of Western Australia	102-150
Monash University	151-200
University of New South Wales	151-200
University of Adelaide	201-300
Macquarie University	201-300
University of Newcastle	301-400

Source: ARWU (2011)

8.3 Other public benefits

The recent review of higher education funding listed a range of ‘public benefits’ associated with higher education, including increased tax revenues, reduced crime, improved health,¹⁰² more informed political debate, and a better ‘civil society’.¹⁰³

¹⁰² Note that except for contagious diseases improved health is in the first instance primarily a private benefit, but in publicly funded health systems it can translate into lower social expenditures.

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

The higher tax revenues are a by-product of the graduate incomes discussed in section 7.3.2. Some additional earnings reflect the fact that people who go to university on average have higher cognitive ability than people who do not go to university. However, the additional skills gained at university generate increased taxable income. This is the main quantifiable public benefit used in the funding review's analysis. The amount of additional taxation raised is likely to depend more on the marginal tax rates on high-income earners than trends in the quality of the higher education system.

Non-tax public benefits require more complex arguments about cause and effect, and are more difficult to quantify. Unfortunately non-tax public benefits are usually assumed rather than demonstrated. For example, the connections between higher education and crime levels, if any, are unclear. One theory is that some individuals turn to crime due to a lack of better alternatives. People who did not finish school lack work opportunities relative to others, and are vastly over-represented in prison.¹⁰⁴ However, it does not follow that enrolling more people who finish school in higher education would lower crime rates. Employment rates for upper-level vocational qualifications and university qualifications are very similar (section 7.3.1). Higher education is just one of many constructive alternatives to a criminal career.

American research shows a strong statistical connection between increased higher education and health outcomes.¹⁰⁵ Australian graduates have considerably better self-reported health status

than people with other educational levels.¹⁰⁶ However, we are not aware of Australian research that identifies a higher education effect independently of possibly confounding variables such as childhood health, higher intellectual ability, greater future-orientation, safer occupations, and higher income. Nor are we aware of any research which quantifies the savings for public health expenditure. Graduates may be healthier in part because they use the health system more extensively.

Compared to other education levels, graduates show higher levels of interest in politics. In 2010, just over half said they had a 'great deal' of interest in politics, compared to 38% for people with other post-school qualifications, and 32% for people with no post-school qualifications. Consistent with higher levels of interest, more graduates than people with other qualification levels had in the last five years done at least one of contacted an official, signed a petition, attended a protest or march, or worked with others to express a view about something the government should or should not be doing. In the same survey, respondents were asked a series of basic questions about Australian political institutions. Graduates were more likely than non-graduates to answer correctly, but a plurality of graduates wrongly believe that the maximum time between federal elections is four years.¹⁰⁷ While graduates are more politically involved, this public benefit of higher education should be kept in perspective. Graduates tend to be only moderately more interested, informed and involved than people with upper-level vocational qualifications. And Australia developed a well-functioning democracy despite low levels of higher education attainment.

¹⁰⁴ 17% of non-Indigenous prisoners in 2009 had completed school: AIHW (2010), p 22. This compares to about 70% of the general population: ABS (2009b).

¹⁰⁵ McMahon (2009) pp 133-142

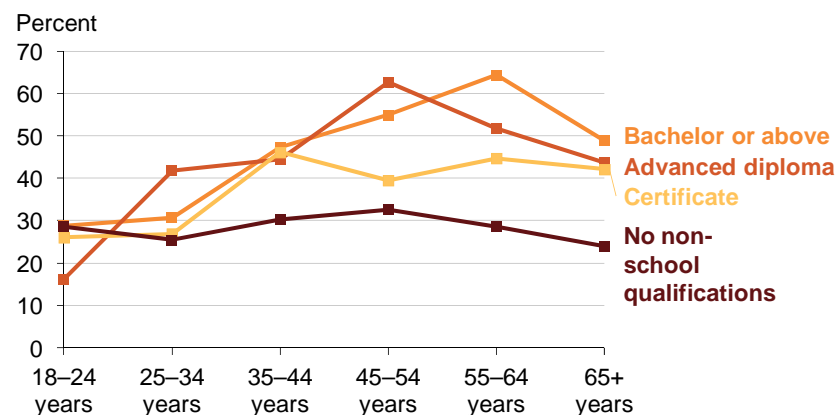
¹⁰⁶ Menzies Centre for Health Policy (2010), p 7

¹⁰⁷ All survey results from McAllister, *et al.* (2011)

Most survey research has found greater general civic involvement by graduates than others. However, the most recent Australian survey evidence on volunteering suggests that this is less true than in the past. While people with no post-school education have low rates of volunteering, figure 29 shows convergence in volunteering rates among younger age groups with post-school education. More research is needed to see why this might be the case.

Overall, the links between the higher education system and these other public benefits are unclear. Therefore the data is reported without any commentary on how it reflects on Australian higher education.

Figure 29 – Volunteering rates by age bracket

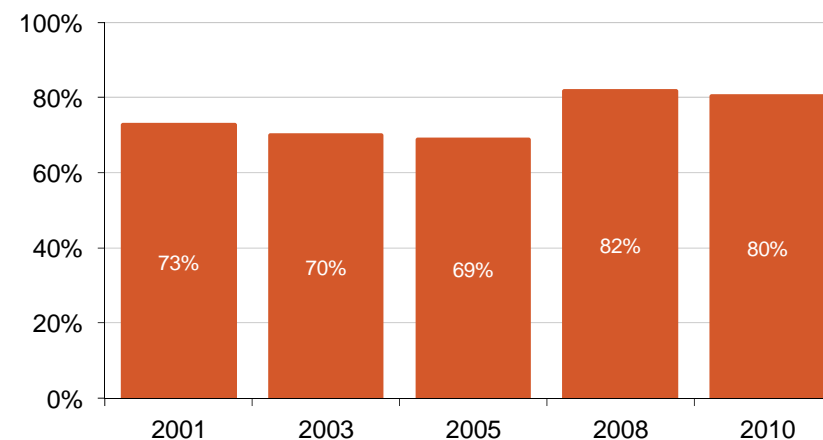


Source: Based upon ABS (2011d)

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 2010, 80% of respondents who expressed a view said that they had either a 'great deal' of confidence in universities (14%), or 'quite a lot of confidence' (66%). Of the fourteen institutions covered in the 2010 survey, only the military enjoyed higher levels of confidence. Graduates had slightly 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 30).

Figure 30 – % 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); Wilson et al. (2005); McAllister (2008)

Asking a slightly different question, a 2008 poll found that 71% 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 13). The same poll found that the public generally accepts the civics arguments made on behalf of universities.

Table 13 – Public approval (by institutions)

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

Source: McAllister (2008)

Glossary

ABS	Australian Bureau of Statistics	CPI	Consumer Price Index
ACER	Australian Council for Educational Research	DE	Australian Department of Education
ACPET	Australian Council for Private Education and Training	DEET	Australian Department of Employment, Education and Training
AIHW	Australian Institute for Health and Welfare	DEEWR	Australian Department of Education, Employment and Workplace Relations
AQF	Australian Qualifications Framework	DEST	Australian Department of Education, Science and Training
ARC	Australian Research Council	DIC	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
ATO	Australian Taxation Office		
AUSSE	Australasian Survey of Student Engagement		
Carrying cost	The cost to the government of providing real interest-free loans	Doubtful debt	The total HELP debt not expected to be repaid
CGS	Commonwealth Grants Scheme	EFTSL	Equivalent full-time student load
Commonwealth contribution	The federal government's tuition subsidy	ERA	Excellence in Research for Australia

FEE-HELP	HELP for full-fee students	NUHEP	Non-university higher education provider
FTE	Full-time equivalent		
GCA	Graduate Careers Australia	OUA	Open Universities Australia
Group of Eight	Coalition of Australia's 'sandstone' universities	Pathway college	Institution specialising in diploma level courses aimed at facilitating entry to university courses
HECS	Higher Education Contribution Scheme	SA-HELP	HELP for the student amenities fee
HECS-HELP	HELP for Commonwealth-supported students	SES	Socio-economic status
HELP	Higher Education Loan Program	Student contribution	The amount paid by a student in a Commonwealth-supported place
HEP	Higher Education Provider	TAFE	Technical and further education
NCVER	National Centre for Vocational Education Research	TEQSA	Tertiary Education Quality and Standards Agency
NHMRC	National Health and Medical Research Council	VTAC	Victorian Tertiary Admissions Centre

Appendix A

Universities (including newly registered 'MCD University of Divinity')		NUHEPs eligible for FEE-HELP [*]
Group of Eight Australian National University [^] Monash University [^] University of Adelaide [^] University of New South Wales [^] University of Melbourne [^] University of Sydney [^] University of Queensland [^] University of Western Australia	Regional Universities Network Central Queensland University* Southern Cross University* University of Ballarat* 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*	Academy of Information Technology Australian Academy of Design Australian Guild of Music Education Australian Institute of Music 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 Institute of Management SA Australian Institute of Professional Counsellors Australian Lutheran College Avondale College Batchelor Institute of Indigenous Education [°] Blue Mountains International Hotel Management School Box Hill Institute Bradford College Cairnmillar Institute Campion Institute Canberra Institute of Technology Carnegie Mellon University Carrick Higher Education
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 University of Newcastle [^]		

* Established as a result of the John Dawkins education reforms

^{*} Granted university status as a result of the John Dawkins education reforms

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

[°] Self-accrediting NUHEP

NUHEPs (continued)		
Chifley Business School	Macleay College	SAE Institute
Chisholm Institute	Marcus Oldham College	South Australian Institute of Business and Technology
Christian Heritage College	Melbourne Institute for Experiential and Creative Arts Therapy	Southbank Institute of Technology
College of Law	Melbourne Institute of Business and Technology	Stotts Colleges
Curtin College	Melbourne Institute of Technology	Study Group Australia
Educational Enterprises Aust	Monash College	Sydney College of Divinity
Endeavour College of Natural Health	Moore Theological College ^o	Sydney Institute of Business and Technology
Gestalt Therapy Brisbane	Morling College	Tabor College (VIC, NSW, SA, TAS)
Group Colleges Australia	National Institute of Dramatic Art ^o	TAFE NSW
Harvest Bible College	Navitas College of Public Safety	Think College
Harvest West Bible College	Northern Melbourne Institute of TAFE	TOP Education Group
Holmes Institute	Oceania Polytechnic Institute of Education	University College London
Holmesglen Institute of TAFE	Perth Bible College	UOW College
International College of Hotel Management	Perth Institute of Business and Techonolgy	Wesley Institute
Insearch	Phoenix Institute of Australia	Whitehouse Institute
International College of Management	Polytechnic West	William Angliss Institute of TAFE
International Conservatorium of Music	Queensland Institute of Business and Technology	
Jansen Newman Institute	Raffles College	
Jazzworx		
JMC Academy		
Leo Cussen Institute		

⁺ Includes higher education providers approved under section 16-25 of the *Higher Education Support Act 2003*

The Australian Technology Network (ATN) universities teach over 180,000 students and emphasise research in collaboration with industry.

Innovative Research Universities of Australia (IRU) teach over 170,000 students. It is mostly comprised of research universities founded in the 1960s and 1970s.

The Goup of Eight (Go8) teaches over 300,000 students. Its members are the leading research universities in Australia.

The Regional Universities Network was founded in 2011 to promote the common interests of its members.

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