HIGHER EDUCATION
BASE FUNDING REVIEW

FINAL REPORT

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Senator the Hon Chris Evans
Minister for Tertiary Education, Skills, Jobs and Workplace Relations
Parliament House
Canberra ACT 2600

28 October 2011

Dear Minister

On behalf of the Higher Education Base Funding Review Panel I have pleasure in submitting our report which you commissioned in October last year.

The report defines enduring principles to underpin the long-term funding of Australian higher education as well as specific recommendations and options for a reformed funding model.

This Review was commissioned and completed while the world was experiencing the effects and uncertainties of the global financial crisis. The Australian Government had responded to the Bradley Review of Australian Higher Education by setting in train a significant reform agenda, much of which is already in place and will continue to be implemented next year. The Panel acknowledges this context and has framed its advice to take into account, as far as possible, the likely impact of these reforms.

The higher education sector in Australia and overseas is undergoing profound change in response to rising student demand and new expectations regarding the quality and relevance of university degrees. The expert Panel was keen to ensure that its advice would assist the Government to steer higher education policy in a direction that would strengthen the sector's capacity to respond to these evolving trends, both locally and internationally.

The Panel has drawn on commissioned research, expert advice and input from universities and other stakeholders in writing this report. Overall we are confident that the sector is performing well and deserves to be a source of national pride. The Panel formed the view that Australia should aspire to having the best universities that we can. We believe that pursuit of this aspiration requires a commitment over coming years to address specific local issues as well as global changes. Otherwise Australian universities may struggle to maintain their current level of contribution to society in terms of excellence, expanded opportunity and economic productivity.

In conducting our review, we observed a near-universal respect for Australia's income-contingent loan scheme which is widely considered to be a fair and efficient mechanism for minimising potential financial disincentives to study. We were also told by many stakeholders that the assumptions underpinning the current relative funding model were out of date and that the relativities between disciplines did not acknowledge the demands of delivering teaching and learning to the standards expected of universities in the 21st century.

The Panel was independent and comprised a fine balance of expertise. I am most grateful for the commitment and diligence of my colleagues Emeritus Professor Dennis Gibson, Professor Louise Watson and Professor Elizabeth Webster, as well as the support of the Secretariat.

To our regret, Professor Gibson retired from the Panel on 15 August 2011. He played an integral part in all the major stages of the Review, particularly in the consultation phase. He also participated in the discussions leading to all the key decisions that formed the basis of the first draft of our report. Although his retirement precluded him from endorsing the final report, we are all grateful for his wisdom and decisiveness and know that the report we present to you is better for his contribution.

We recognise that you will need to consider our findings and intend to consult further with the sector about how our recommendations might be taken forward. We hope that the proposed principles will be useful in informing future funding decisions. We believe that if our recommendations are implemented, either separately or together in a balanced package over the coming years, the Government will successfully address the issues raised in our report. Such a response would ensure that the Australian higher education system has the capacity to increase its current levels of quality, access and diversity as well as the flexibility to respond appropriately to any unforeseen risks and opportunities that may arise in the future.

Yours sincerely

Jane Lomax-Smith

Executive summary

Australia's future social and economic development depends on having an educated and highly skilled community, delivering creativity, innovation and improved productivity. Australian universities contribute to society by leading public debate, enhancing civic and cultural life and enriching our self-awareness by the expansion of knowledge. In addition, universities contribute to the economy by supporting the development of effective graduates, driving regional economies and improving the national accounts by virtue of their research and development as well as their onshore and offshore education activities. Their regional success and global impact enhances our national standing and assists in globalising the national economy.

An effective and highly performing university sector is essential to achieving these goals and base funding to universities from the Australian Government and student contributions provides the largest source of revenue to universities.

Australian universities are institutions with highly complex goals and operations. They demonstrate strong international links but are also responsive to national and regional priorities. The sector is diverse but needs to operate in a legislatively controlled framework; it must focus on excellence yet also have a wide reach. Australian universities are accountable to Government but receive much of their funding from non-government sources and are autonomous institutions.

To ensure they contribute to innovation, productivity and a civil society, our universities undertake teaching that is informed by scholarship, as well as research which is collaborative and global in its significance and often capable of commercialisation.

The evidence available to the Higher Education Base Funding Review Panel (the Panel) showed that the Australian university sector was well managed and had adapted to changing circumstances to become more efficient and productive, such that it is now able to use any additional funding effectively. The trust of the community and government investment over many decades has been and continues to be justified. Australia's higher education system has been responsive to government initiatives and has diversified its income sources. The diverse system includes areas of research excellence, high-quality and innovative teaching, and a widespread focus on equity. Our national system is well regarded at home, respected internationally and a source of national pride. Nevertheless, specific local issues, changing policy settings and rapid global changes have the potential to pose significant risks to the quality and effectiveness of Australian universities.

The Government has acted swiftly in response to the Knight Review of the Student Visa Program to support international enrolments in universities. However, the Panel noted ongoing concern in the sector about the potential for emerging international issues to erode Australia's competitive advantage in the international higher education market. There are pressures on operating costs and infrastructure, reflecting the dramatic changes in the sector over the last two decades; a period marked by far more than just expansion. Across the sector the stresses were seen to be largely similar, reflecting changes in student and employer expectations, technological change, teaching reforms including online delivery and an increasing emphasis on work-integrated learning.

Put simply, despite productivity gains and allowing for institutional decisions about priorities, the costs have not just risen, but also the nature of the institutions has changed during the decades on either side of the millennium.

The scope of the Review

The Higher Education Base Funding Review (the Review) commenced in late 2010 with broad terms of reference to establish enduring principles to underpin public investment in higher education. These principles were to address the appropriate balance between public and private contributions towards the cost of undergraduate and postgraduate education. In addition, the Panel was asked to identify international benchmarks and trends for coursework education and the level of base funding required for Australian universities to deliver competitively.

The Panel examined the purpose and scope of base funding, and having determined the current costs of delivering those functions, sought to identify and recommend the best and most effective future funding model. Such a model needed to allocate funds appropriately across disciplines, at a reasonable level and in a manner that would give universities the incentives to deliver the Government's ambitions for growth, equity and excellence, including delivering increased teaching quality.

Central to the Government's reform agenda are targets for lifting higher education attainment rates, as well as enrolment rates of those from disadvantaged backgrounds. The Government has set the targets of 40 per cent of 25 to 34 year olds holding a Bachelors degree by 2025, and 20 per cent of undergraduate students enrolled in universities being from the lowest socioeconomic quartile of the population by 2020.

In conducting this review of base funding, the Panel has sought to consult widely and obtain the best available data regarding the interim effects of the Government's recent reforms, and to appreciate the evolving trends both in Australia and internationally. The Panel was also aware that the Review had been commissioned at a time when many economies were suffering from the global financial crisis and some comparable higher education systems overseas were experiencing major change and financial stress, in contrast to Australia where the Australian Government had increased investment in higher education.

The enduring principles and the purpose of base funding

In approaching the task of identifying enduring principles that should underpin public investment in higher education, the Panel sought to articulate those principles that have been implicit in Australia's higher education funding system and does not expect them to be controversial.

Importantly the Panel confirms the principle that base funding is provided to support universities in their fundamental role of providing teaching and learning informed by scholarship and a base capability in research, within appropriately resourced facilities. Funding should be sufficient to support these purposes. Base research capability to support teaching and learning is less than the entire level of research activity in universities that is supported by general revenue.

The principles reiterate the notion that government and students should continue to fund university education, in proportions that are broadly consistent with their respective benefits, and that the overall funding levels should reflect real costs. As a matter of principle, fees should not be a barrier to participation. In addition, universities should be supported in meeting the additional costs of teaching able but underprepared or disadvantaged students, and base funding should be supplemented by targeted programs to promote social inclusion.

The higher education base funding system should be fair, simple and transparent with universities remaining autonomous yet accountable for the expenditure of public money. It should not constrain

the capacity of higher education institutions to diversify their income sources, for example, through internationalisation or by seeking sponsorship and philanthropy, and it should support and encourage universities to develop innovation in teaching.

The Panel's recommendations begin by asking the Australian Government to endorse the principles and in so doing acknowledge the purposes for which base funding is provided. Acceptance of these principles will regularise the status quo and address any lingering uncertainty about the fundamental purpose of base funding.

The efficiency of base funding in a student demand driven system

The change in the funding of Australian universities for undergraduate student places, from a capped allocation system to one where institutions are responsible for the number of places they offer within disciplines, fundamentally changes the basis for the distribution of base funding. Previously some level of institutional cross-subsidisation between courses was inevitable and acceptable, provided that the aggregate funds were sufficient. However, in a student demand driven environment it is more important that the costs of course delivery match funding otherwise it is conceivable that there may be pressure to reduce or abolish underfunded disciplines.

Similarly, in the context of ambitious participation and access targets, there is the risk that universities may enrol less well prepared students and attrition may rise. This tendency can be reduced by maintaining funding support for this cohort of students and focusing policies on retention and completions to prevent costly attrition. Attrition brings a personal cost to students but in addition, increased levels could undermine the Government's attainment targets and be inefficient in terms of public policy.

Minimising the need for cross-subsidisation by having base funding for disciplines more closely match costs and focusing on student retention and completion are important new goals for the base funding model in order to maintain the efficiency and effectiveness of the demand driven system.

Global competitiveness

While the Australian university system is of a high quality by international standards, indicators relating to student–staff ratios, student satisfaction, student engagement and employer perception suggest that improvements are possible and desirable.

The Panel acknowledges that some international ranking schemes appear more reflective of research investment than the amount spent on teaching, but believes that an increased level of investment per student would be required to improve the quality of higher education teaching on international indicators and maximise the sector's potential to contribute to national productivity and economic growth.

Importantly, additional funding is not the only requirement; there must be a commitment to using funding to improve teaching quality. The Panel believes that in aiming for the best standard of higher education that we can afford, the nation would need to commit to improving performance on a suite of targets or benchmarks rather than aim simply to invest more funds.

While measurement and data collection do not mean inevitable improvement, collecting a suite of relevant and available indicators will allow the Government to appreciate the impact of their reforms in a global environment. For this reason the Panel recommends that, following consultation with the sector, a triennial 'State of the Higher Education System' report should be produced. This should allow an ongoing focus on the effect of the current reform agenda and those areas that improvements and investment should focus on.

Determining reasonable costs

The Panel commissioned research to determine the cost of delivering the purposes for which base funding is provided. This data was supplemented by additional evidence from other reports and published material.

Addressing areas of underfunding

Based on data from a commissioned study, the Panel reached the conclusion that the current funding clusters no longer reflect the costs of delivery of teaching, scholarship and base research capability in all disciplines. The research assisted in identifying some areas of underfunding for particular disciplines and also indicated the prevalence of internal cross-subsidisation.

The study, together with additional data from other reports and submitted information, convinced the Panel that there are areas of underfunding in the current base funding model.

This report identifies three groups of disciplines of concern:

- accounting, administration, economics and commerce
- medicine, dentistry, agriculture, veterinary science, and visual and performing arts
- law and humanities.

The Panel's view is that the evidence supports the conclusion that the first two groups are underfunded and require additional funding, while the third group needs careful consideration for additional support.

The third category is identified as a vulnerable group of disciplines where the Panel suspects that the costs have been depressed as a result of institutional decisions in areas without prescriptions from professional bodies.

On the information presented to the Panel, there was no conclusive evidence that any disciplines were overfunded.

Simplified funding clusters

The Panel proposes that the base funding relativities between disciplines should be simplified to better reflect costs and to resolve areas of underfunding as well as acknowledge the convergence of costs in some fields. The 'clusters' of disciplines used in the funding model should be reduced in number. Consistent with the lack of conclusive evidence that any clusters were overfunded, the Panel suggests that these changes should be implemented in a way that ensures that no discipline experiences a reduction in per student funding. This is suggested as a means of protecting faculties and vulnerable disciplines against cost efficiency measures which might affect teaching quality.

Postgraduate coursework education

The Panel acknowledges the higher costs that can be associated with the delivery of postgraduate education and that are related to smaller class sizes and more senior staff. However, the Panel is concerned that some postgraduate professional degrees appear indistinguishable from 'rebadged' undergraduate courses. Furthermore, these high-cost degrees appear to be more common in institutions which have access to a more diverse range of private sources of revenue. The Panel was not persuaded of the benefit of longer courses, or of any justification for increased base funding covering the higher costs of protracted professional entry qualifications. Given that universities may offer postgraduate courses on a full fee–paying basis, or draw on resources from general revenue to support higher cost postgraduate courses, the Panel concluded that where the Australian Government approves a postgraduate course for funding it should be at the same rate and students should be charged the same contribution as an equivalent undergraduate course.

Aligning base funding with other funding programs

The Panel considered base funding in the context of other government funding and other sources of revenue. While not every objective should be supported by base funding, it is important that the goals of the different funding programs are aligned.

Performance Funding for retention and completion

The need to maintain and improve the quality of teaching and learning is of central importance to the Panel in recommending a funding model. The Australian Government now has available robust data on retention and completions based on unique student identification numbers. The Government should, following consultation, include in its Performance Funding framework a measure based on this reliable retention and completion data, in a manner that acknowledges the provider of each year of attainment. This means that the role played, for example, by regional universities in providing the first experience of higher education to students who then re-enrol with another provider could be recognised.

Supporting excellence: flagship courses

The Panel received representations from the sector suggesting that the present funding model did not support the development of particular areas of innovation and excellence. The Panel therefore recommends that the Government should allow institutions to develop 'flagship' courses for up to 5 per cent of their Commonwealth supported places. These flagship courses should be funded at up to 50 per cent more than the base funding rate of other units and should involve a level of excellence and innovation significantly above other course offerings.

The distribution of funding for scholarship and base capability in research

The Panel acknowledges the requirement that Australian universities teach in an environment informed by scholarship and research and defines the level of research activity required to support

this role as base research capability. The Panel does not believe that support for scholarship should be separately identified but considers that notionally 6–10 per cent of base funding could be identified as supporting a reasonable level of base research capability. This portion of research activity is less than that which is often described as 'unfunded' research and is supported by general university revenue.

While it would be desirable to continue to allocate this funding within the base according to student load, the Government could, if it wished to make explicit the nexus between teaching and research, consider distributing some of this portion of base funding on the basis of an institution's research output.

Funding for non-university providers

The Panel recognises that the Australian Government provides funding through the Commonwealth Grant Scheme to support the delivery of approved higher education courses outside the university system. This is often an effective way to alleviate skills shortages in critical areas such as nursing or early childhood education. It would therefore appear reasonable that the Australian Government should fund these courses at a discounted rate of up to ten per cent in respect of both government and student contributions to acknowledge that these institutions are not required to engage in research.

Contemporary learning spaces

The sector presented compelling evidence that the nature of teaching environments has changed and both domestic and international students expect flexible learning hubs with widespread wi-fi, extended operating hours and the capacity for group learning. There is evidence that despite considerable investment in refurbishment, much of the present higher education infrastructure is still unfit for purpose in the 21st century. In addition, teaching environments are increasingly costly to develop and maintain, with simulation suites and laboratories in particular having shorter equipment life cycles.

The Panel urges the Government to support the development of contemporary learning spaces through refurbishment and assist universities to make their building stock fit for purpose in the 21st century. The Panel recommends that the Australian Government invest the equivalent of an additional 2 per cent of base funding, to be allocated on the basis of weighted student load without the uncertainty of contestable funding rounds and in a manner that provides predictability and the capacity for forward planning by the sector.

Clinical placements and education practicums

The Panel noted the escalating costs associated with sourcing, supporting and funding clinical placements and teaching practicums which appear to be increasingly unsustainable. The costs involved in these programs are not transparent and the diversity of responsibilities of different stakeholders needs clarification. For this reason the Panel suggests that a detailed assessment of the reasonable costs and sources of funding of these activities should be undertaken. This should be conducted in consultation with state and territory governments, professional bodies, Health Workforce Australia and the Council of Australian Governments. The Panel believes that as the

largest employers of graduates from the disciplines of teaching and nursing, states and territories should play a greater role in workforce maintenance and in identifying ways to avoid cost escalation and cost shifting in this area.

Philanthropy

Philanthropy plays a far smaller role in Australian universities than in many overseas institutions. While the older universities receive substantial support from alumni, businesses and donors, other institutions have far less focus in this area of endeavour. The Government has previously received a recommendation from the Bradley Review of Australian Higher Education to develop a pool of funds as an inducement to match gifts from new donors. The Panel suggests performance in this area could be improved if some universities had access to a small seed funding scheme to help build institutional capacity.

Sharing the investment

The Panel believes that Australia should maintain its current income-contingent loan system and that its repayment threshold should continue to be set at a level which does not deter participation. The Panel noted that evidence from England and in Australia suggests that when caps on student contribution are lifted, fees tend to rise to the maximum rapidly, in an environment where price is sometimes seen as a proxy for quality. The Panel therefore recommends that the system of maximum student contributions remain in place.

The Panel was concerned that the current pattern of student contributions appears to have developed incrementally without a consistent underlying rationale. Student contributions range between 19 and 84 per cent of the base funding amount for different disciplines, with fees varying from $4,355 to $9,080 per year. Some students with little prospect of high graduate incomes pay 52 per cent of the base funding amount, while those in some high-cost disciplines with high potential graduate salaries pay 32 per cent. Other students in lower cost disciplines pay 84 per cent.

The Panel regards the pattern of student contributions in the current system as inequitable.

Research evidence on the public and private benefits of higher education in Australia led the Panel to conclude that it would be appropriate for students to contribute 40 per cent of base funding for their study with the balance of 60 per cent provided by government. Overall, students currently contribute a total of 40 per cent of base funding but the Panel believes that the 40:60 ratio should apply consistently across all disciplines.

This reform would involve dramatic changes for students in many disciplines and this should be taken into account in phasing in the new arrangements. For example, the Government should 'grandfather' fee increases to ensure that current students continue to be charged the contribution levels they committed to on enrolment. In disciplines where the student contributions are a very low percentage, the changes may need to be introduced in a sequence of smaller steps with ongoing monitoring for impact on demand. In disciplines where the student contribution is currently above 40 per cent of the total base funding amount, it should be frozen until indexation brings the government contribution in line with the targeted 60 per cent.

Skills shortages

The Panel found no compelling evidence that lowering student contributions for the purpose of increasing enrolments in areas of skills shortages has any significant impact. Fee reductions for this purpose should therefore be removed. As low student enrolments in some courses are related to lack of attainment in prerequisite Year 12 subjects, the Panel believes that some of the funds saved from removing this subsidy might be redirected towards initiatives focused on potential higher education students in secondary education.

More targeted measures to address skill shortages, in some cases, could involve partnerships with employers and state governments to provide information and incentives for students to undertake courses in priority areas and seek employment in relevant industries on graduation.

Ensuring equity and access

The Panel notes that the proportion of low socioeconomic status (SES) students in higher education has remained low over the last decade but is likely to rise in response to the Government's target of 20 per cent of undergraduate enrolments in higher education to be low SES students by 2020. The Panel notes the possibility that the present cohort of low SES students attending university may not be representative of the wider cohort that may be recruited with increased participation. As this wider cohort of students may require higher levels of support, universities should be supported to meet the additional educational needs of these students as their numbers increase.

The Panel is concerned that the per capita value of the presently available student loadings for equity and access tend to decrease over time because the appropriations are not demand driven or per capita based. Having a fixed, albeit indexed, appropriation means that an increase in uptake on the part of universities is accompanied by a decrease in per capita funding. The Panel therefore considers that if participation of low SES students continues to grow, the funding in courses supported by the Enabling Loading and the participation component of the Higher Education Participation and Partnerships Program (HEPPP) should be demand driven and allocated on a fixed per capita basis.

Improving the evidence base

The Panel found that universities do not cost their activities in a consistent way and that providing detailed costing information for the Review was challenging and time consuming for institutions.

Following consultation, the Australian Government should develop an agreed instrument to allow ongoing costing data to be collected in order for future funding policy to be based on robust evidence and to be responsive to future needs.

The Panel noted the convergence of costs between clusters and considered that a funding model based on the mode of teaching may better reflect the real costs faced by institutions in the future. Before considering such a reform, additional evidence would be required. In addition, the Panel was aware of the spread of work-integrated learning widely throughout disciplines and considered that the funding model should assist universities to support the associated costs. However, it is unclear how this might be done in a way that reflected costs and avoided unexpected consequences.

Instead of multiple complex data collection projects to deal with evolving discipline costs, mode of teaching differentials and the costs of work-integrated learning, the Panel believes these data issues should be addressed at the same time, and should be appropriately supported financially.

Reforming the base funding model

The Panel recognises that the Australian Government has substantially increased funding to the sector in the last four years and acknowledges that the current fiscal climate is tight, and has therefore prioritised the recommendations associated with increased funding. The recommendations developed by the Panel comprise a package of reforms that could begin to be introduced in the next four years. However, the recommendations include long-term proposals to maintain the efficacy and quality of the system.

There are data-related issues that will require further consultation and agreement with the sector in terms of developing agreed instruments to improve the capacity of institutions to report on expenditure for future costing and funding exercises. Such work would support ongoing reform, allow assessment of mode of teaching as a basis for a future funding model, and allow further investigation of the costs of work-integrated learning. This work should commence as soon as possible to support a sustainable long-term funding system which can continue to respond to changes within universities.

The Panel places a high priority on increasing the funding to those disciplines that are demonstrably underfunded. The Panel believes that in the context of a student demand driven system it is essential to have funding more closely aligned with costs. The current funding differentials are inaccurate and require too much cross-subsidisation. Unless this is resolved, as a matter of some urgency, the demand driven system will be inefficient and lead to unintended consequences.

Having identified a convergence of cluster costs, the Panel suggests in the longer term that the Government could further deal with underfunded disciplines by incorporating suitable changes to the base funding differentials in a move to a smaller number of funding clusters and at the same time increase the average base funding per place to improve Australia's international competitiveness.

Ongoing support for the Government's participation targets will require changes to the Enabling Loading scheme and the participation component of the HEPPP to allow them both to be uncapped and demand driven. While the former is quite a small program, the participation component of the HEPPP is a more substantial financial commitment, but because of its current funding profile and enrolment numbers, would only require extra funding to be in place from 2014.

The Panel believes that increasing the funding for the development of contemporary learning spaces is a priority and should be in place in about the same timeframe. Developing a Performance Funding framework based on accurate retention and completion data would support quality, access and efficacy of the funding model and might be implemented in a similar timeframe or supported sooner through the current Compact system.

The change in the balance of public and private payments contributing to base funding within disciplines should begin with the aim of eventually reaching a more equitable 40:60 split of base funding between students and government in all disciplines. The Panel has suggested that the changes involved in bringing all students' contribution amounts to the 40 per cent level should be introduced incrementally. In the transition period some student fees will continue to exceed the 40 per cent target, and the Panel recommends that the Government maintain those students' contributions in dollar terms, until the standard ratio is achieved through the increases in the government contribution.

In considering these recommendations the Government will have many competing demands on its resources but the Panel emphasises the need to continue to give priority to our university system as a way of investing in human capital and national productivity.

The report

The Final Report of the Higher Education Base Funding Review is based on material from publications, submissions, consultations and commissioned research. This was complemented by expert advice and some data from the Australian Government.

Following the release of a discussion paper in December 2010, the Panel undertook wide consultation and received over 160 written submissions. The evidence and material presented was extensive and the Panel is grateful to all those who gave their time to assist in these deliberations. Four reports were commissioned. This included a large costing study involving eight universities, and the Panel acknowledges the diligence shown by these institutions in responding to the demands of the data collection process.

The report describes the context of the Review and the purpose of base funding (Chapter 1), then explores the available data on the international competitiveness of the Australian higher education system and the case for improvement (Chapter 2). It then seeks to determine the reasonable costs of the purposes for which base funding is provided, examines cost pressures and recommends how the model could be modified to be more effective in a demand driven system (Chapter 3). The report further examines specific issues related to the core funding model to discuss how base funding and related programs should operate together in an optimal way (Chapter 4).

Finally the report describes how the costs should be shared (Chapter 5) and how funding should support equity and access (Chapter 6).

Enduring principles to underpin base funding

Principle 1

Base funding is provided for universities to fulfil their fundamental role of providing teaching in an environment informed by scholarship, and maintaining a base research capability, in order to contribute to Australia's economic and social development.

Principle 2

The total quantum of base funding should support universities in the delivery of globally competitive teaching and learning in appropriately resourced facilities by adequately funding the direct and indirect costs of teaching, scholarship and base capability in research.

Principle 3

Investment in universities through base funding enhances national productivity by developing the skills and attributes of graduates.

Principle 4

The base funding model should be simple and transparent.

Principle 5

Base funding should be allocated in a manner that provides institutions with the autonomy to allocate their resources internally according to their strategic priorities.

Principle 6

While the base funding model should uphold the principle of institutional autonomy, institutions should be accountable for how they allocate the funding.

Principle 7

The base funding model should reflect the relative costs for different disciplines or modes of teaching.

Principle 8

The provision of base funding should be consistent with diversification of funding sources by institutions.

Principle 9

The Government should pursue targeted policy objectives through specific programs outside of base funding where the provision of supplementary funding is linked to transparent performance measures.

Principle 10

Base funding should enable institutions to pursue innovative methods of teaching and learning.

Principle 11

Base funding should be sourced from a balance of student and public contributions broadly consistent with the private and public benefits from higher education.

Principle 12

Base funding should be supplemented through targeted programs to support social inclusion and equity of access for eligible students.

Principle 13

The base funding model should be accompanied by appropriate measures so that student contributions are not a financial barrier to participation in higher education.

Recommendations

The purpose of base funding (Chapter 1)

Recommendation 1:The purpose of base funding

The Australian Government should endorse the principles set out by the Panel.

Strengthening Australian higher education (Chapter 2)

Recommendation 2: The need for more investment

The average level of base funding per place should be increased to improve the quality of higher education teaching and to maximise the sector's potential to contribute to national productivity and economic growth.

Recommendation 3: Improving international competitiveness

The Australian Government should produce a triennial 'State of the Higher Education System' report which monitors Australian teaching quality and resourcing based on a suite of relevant and available indicators, relative to comparable international systems or institutions with which Australia should establish a benchmarking relationship.

Meeting reasonable costs (Chapter 3)

Recommendation 4: Address areas of underfunding

The Australian Government should address the identified areas of underfunding in the disciplines of accounting, administration, economics, commerce, medicine, veterinary science, agriculture, dentistry, and visual and performing arts, and should consider increasing the funding level for humanities and law.

Recommendation 5: Adjust relativities to better reflect costs

The Australian Government should reduce the number of base funding clusters to reflect the convergence of costs of delivery between courses and adjust the relativities accordingly.

Recommendation 6: Maintain per student funding levels

In modifying the clusters and relativities, no discipline should experience a reduction in per student funding in real terms.

Recommendation 7: Funding for postgraduate coursework study

Where the Australian Government approves Commonwealth supported places in postgraduate courses, the level of funding should be at the same rate as funding for undergraduate courses.

Recommendation 8: Improving the evidence base

To inform future funding policy and after consultation with universities, the Australian Government should develop an agreed ongoing cost measurement system that collects data on:

- functional expenditure
- the costs of delivery, including information on the costs of modes of teaching
- the internal and external costs of work-integrated learning.

Recommendation 9: Funding to meet costs of changed data requirements

The Australian Government should provide appropriate funding support to institutions to develop the enhanced data base recommended in this report.

Supporting quality teaching and learning (Chapter 4)

Recommendation 10: Performance Funding

Performance objectives to promote quality teaching should be funded separately from base funding using transparent indicators and assessment processes.

Recommendation 11: Funding for quality teaching

The Australian Government should continue to advance quality teaching in Australian universities through performance agreements such as the current Compacts using credible, consistent and agreed quality measures.

Recommendation 12: Measures of retention and completions in Performance Funding

The Australian Government should include measures relating to student retention and completions in its Performance Funding framework for universities in a manner that acknowledges the provider of each year of student attainment.

Recommendation 13: Funding for flagship programs

The Australian Government should encourage institutions to develop outstanding programs that would be funded up to 50 per cent more than the standard base funding rate, by both government and student contributions according to the 40:60 ratio, to a limit of 5 per cent of each institution's total Commonwealth supported load.

Recommendation 14: Ongoing evaluation of flagships

In cooperation with the higher education sector, the Australian Government should evaluate institutions' flagship programs on a continuing basis to monitor their effectiveness in encouraging excellence and innovation as well as their impact on student participation and achievement.

Recommendation 15: Funding for base research capability

In determining the ongoing allocation of the proportion of base funding provided to universities to support base research capability, the Australian Government could choose to continue to allocate this proportion on the current basis using student load; or to distribute this proportion of base funding on a basis that reflects variations between the institutions' research outputs.

Recommendation 16: Adjusted funding for non-university providers

Base funding should be adjusted by an amount of up to 10 per cent for non-university provision of higher education courses in recognition that these providers are not required to undertake research.

Recommendation 17: Funding for contemporary learning spaces

Base funding should be complemented by an additional amount of approximately 2 per cent of base funding per annum distributed on the basis of weighted student load to support the provision of appropriately resourced facilities and to reflect the higher standard required of contemporary teaching and learning spaces.

Recommendation 18: Review of health and education placements

Following consultation with state and territory governments, professional bodies, Health Workforce Australia and Council of Australian Governments, the Australian Government should undertake a detailed assessment of the costs of health and education placements within the range of arrangements across Australia, to define the roles of Australian governments and employers/industry in maintaining the relevant workforces and to identify ways to avoid cost escalation.

Recommendation 19: Encourage universities to pursue philanthropy

The Australian Government should encourage universities to pursue philanthropic support by providing universities with seed funding to improve their capacity to attract donations.

Sharing the investment (Chapter 5)

Recommendation 20: Income-contingent loan scheme arrangements should remain

The current income-contingent loan system should remain in place and its repayment threshold should be set at a level that does not deter participation.

Recommendation 21: Contribution amounts to remain regulated

The Australian Government should uphold the current policy of capping student contribution amounts at maximum levels, recognising that universities have the autonomy to set lower student contribution amounts if they choose.

Recommendation 22: Measures to address skill shortages

The Australian Government should phase out existing measures that aim to increase student demand in areas of skill shortages using student contribution reductions and should consider more targeted measures to address skill shortages. In some cases, this could be in partnership with employers and state governments to provide information and incentives for students to undertake courses in priority areas and seek employment in relevant industries on graduation.

Recommendation 23: Appropriate balance of contributions

The balance of student and government contributions should be set at a fixed proportion with students contributing 40 per cent and the Government contributing 60 per cent of the funding for each Commonwealth supported place.

Recommendation 24: Phased implementation of the new balance of contributions

The new 40:60 ratio applying to student and government contributions of the total base funding should be phased in as follows:

- existing students should continue to be charged the contribution levels that currently apply until they graduate from their degree
- in disciplines where the student contributions are currently considerably lower than 40 per cent, the changes may need to be introduced in a sequence of smaller steps with ongoing monitoring for impacts on demand
- in disciplines where the student contributions are currently above 40 per cent of the base funding amount, the student contribution should be frozen at the current dollar amount until indexation of the government contribution produces the 40:60 ratio.

Ensuring access and equity (Chapter 6)

Recommendation 25: Supporting the cost of low socioeconomic status students

The Australian Government should continue to support the differential cost of students from low socioeconomic status backgrounds.

Recommendation 26: Monitoring impact on participation by low socioeconomic status students

The Australian Government should monitor the potential impact of the changes in student contribution levels recommended by the Panel on the levels of participation by low socioeconomic

status (SES) students, so that should the levels of participation in some courses fall below desirable levels, the Government could address this through appropriate targeted programs that offer incentives for institutions to enrol low SES students in particular courses of study.

Recommendation 27: Funding for the Higher Education Participation and Partnerships Program

The participation component of the Higher Education Participation and Partnerships Program (HEPPP) should be uncapped and paid on a demand driven basis to universities as a low socioeconomic status (SES) loading on base funding. In order to maintain the value at full implementation of the HEPPP in 2012 of about $1,000 per low SES student equivalent full-time student load, the funding allocation should be increased.

Recommendation 28: Expanding funding for partnerships

Following the planned review of the effectiveness of the partnerships component of the Higher Education Participation and Partnerships Program, the Australian Government should consider expanding the partnerships component of the program. Funding could be provided directly to partners such as schools, vocational education and training providers and agencies working with disadvantaged communities.

Recommendation 29: Adjustment to Enabling Loading and review of effectiveness of courses

A review should be conducted to assess the effectiveness of pathway enabling courses in comparison to other pathways to higher education, and in the interim the Enabling Loading should be set at the 2010 per capita rate (indexed for subsequent years).

Chapter 1: The purpose of base funding

1.1 Introduction

1.1.1 The scope of the Review

The Higher Education Base Funding (the Review) commenced in late 2010 with broad terms of reference to establish enduring principles to underpin public investment in higher education. These principles were to address the appropriate balance between public and private contributions towards the cost of undergraduate and postgraduate education.

The Panel was also to examine the purpose and scope of base funding, and having determined the current costs of delivering those functions, to identify and recommend a model of funding. This was to provide funds appropriately across disciplines, at a reasonable level and in a manner that would give universities the incentives to deliver the Australian Government's ambitions for growth, equity and excellence, including delivering increased teaching quality. In addition, the Panel was asked to identify international benchmarks and trends for coursework education and the level of base funding required for Australian universities to deliver competitively.

1.1.2 The key issues for the Panel

The Panel has pursued as key questions whether the level of base funding is internationally competitive and sufficient to support the level of quality expected of higher education courses; whether the support by discipline is adequate and whether the discipline funding model works. If not, which funding model might best deliver improved teaching quality; how should the costs be divided; and how would equity and access best be supported in Australia's higher education system?

1.1.3 Background

The Review was commissioned in response to a recommendation by the Review of Australian Higher Education, chaired by Professor Denise Bradley AC, that the Government commission a review of base funding levels and funding cluster relativities to ensure that they remain internationally competitive and appropriate for the sector. The Bradley Review delivered a blueprint for Australian higher education in terms of an agenda for access, equity, participation and quality but did not perform a costs-based analysis of base funding and left open the question of what should be the underlying base funding model. The Panel has embarked on that task, and this review should be seen as the next stage in implementing the Government's higher education reforms.

This Review has been conducted alongside reviews of student income support, regional funding for universities and international student visas. At the same time, as part of its broader response to the Bradley Review, the Government has been investing additional funds into universities and implementing a broad reform agenda.

The Bradley reforms to the sector are outlined in the Panel's Background Paper for the *Higher Education Base Funding Review* (2011, p. 7). During the course of the Review there have been further developments that directly or indirectly affect the issues being considered by the Panel.

The Review of Student Income Support Reforms by Professor Kwong Lee Dow (Lee Dow 2011) has led to the Government committing to broaden the range of regional students able to access income support and additional funding. While income support was outside the scope of this base funding review, the Panel notes the importance of this commitment to increasing participation by disadvantaged groups. The measures adopted by the Government in response to the recent Knight Review of the Student Visa Program (Knight 2011) will provide additional certainty to universities in relation to maintaining the level of international students and diversified sources of income.

The core feature of the Government's reform agenda is to expand participation in higher education as a means of preparing Australia for future economic conditions and to give more people the opportunities that result from completing a higher education qualification, while at the same time introducing measures that seek to improve the quality of teaching and learning provided in higher education institutions.

The Government has adopted targets for lifting overall participation rates and also increasing the participation rates of those from disadvantaged backgrounds. The Government has set the target of 40 per cent of 25 to 34 year olds holding a Bachelors degree by 2025, and 20 per cent of undergraduate students being from the lowest socioeconomic status (SES) quartile of the population by 2020. Students from the latter group are currently under-represented in higher education with their proportion of total undergraduate students around 16 per cent. The major funding elements to support the Government's objectives are the introduction of a student demand driven funding system, more favourable indexation arrangements, enhanced income support measures, additional infrastructure stimulus spending, extra Regional Loading, additional funding for the indirect costs of research, a national quality regulator and measures to encourage wider access and assist universities to support academically less prepared students. These measures have been phased in since 2009 and most will be in place by 2012.

1.2 The nature and purpose of base funding

Base funding is provided under the *Higher Education Support Act 2003* (HESA), through the Commonwealth Grant Scheme (CGS) and student contribution payments. The maximum amounts of student contributions are currently set in legislation, with universities setting their actual fees. These are either paid by students upfront, or more commonly through the Government's income-contingent loan scheme, previously called the Higher Education Contribution Scheme (HECS) and from 2005, the Higher Education Loan Program (HELP).

The purpose of providing base funding is to ensure that public universities have sufficient resources to maintain the quality of course delivery expected from the Australian higher education system. Base funding to universities provides for the employment of academic staff, and resources (such as administrative support and infrastructure). This enables universities to deliver teaching and learning programs, to engage in scholarship to inform teaching programs, and to provide institutions with a base capability to undertake research, in appropriately resourced facilities.

While base funding serves the broad purpose of resourcing teaching and learning at the higher education level, it also supports publicly funded universities in carrying out their wider role in society. The receipt of base funding strengthens universities' institutional autonomy and academic freedom, thus enabling them to contribute to society on a range of levels. Activities such as leading public debate, enhancing civic and cultural life and pursuing the systematic expansion of knowledge are important outcomes of the provision of base funding. [1]

1 These goals are articulated in the *National Protocols for Higher Education Approval Processes* approved by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) in October 2007 (MCEETYA 2007).

Higher education supports the government and community in meeting current and future economic challenges. There is a substantial body of evidence to show that by building workforce skills and stimulating growth in productivity, higher education not only addresses skill shortages that may inhibit growth, but also offsets the potential impact of a two-speed economy.[2] In many parts of the country the local university is also a major contributor to regional economic growth. The knowledge and skills students gain from their university education are also important in maintaining Australia's economic competitiveness. Taken together, this provides a compelling justification for continued government support for universities' core functions through a system of base funding.

Historically base funding has included funding for capital and research. Amounts for each of these purposes are also allocated by other means, but there remains a Capital Roll-in in the CGS and some residual resources to maintain research activity. Universities have autonomy in how they spend base funding and are free to determine the allocation of base funding to different purposes.

All Australian public universities engage in research and their status demands that their teaching is informed by scholarship and research.[3] University research activity is supported by a range of funding sources including competitive grants, sponsorships, donations and general university revenue. Traditionally research is said to be 'unfunded' when it falls outside of that funded by competitive grants. 'Unfunded' research covers those activities and facilities resourced by general university revenue from a wide range of sources. Some, but not all, of this 'unfunded' research activity relates to the maintenance of a base level of research expected of all Australian universities. The Panel regards this as an appropriate purpose to be supported from base funding, and has called it 'base research capability'.

Providing the core operating resources to support these three activities—teaching, scholarship and base research capability—in appropriately resourced facilities, is the broad purpose of base funding.

The Panel also considered additional sources of revenue, acknowledging that base funding is only one part of a broader range of support provided to universities by governments, student contributions and private interests. Judgment about the adequacy of funding per student place through base funding must be qualified by the recognition that there are other funding programs that directly or indirectly support teaching and learning. As well as the Higher Education Participation and Partnerships Program (HEPPP) and Performance Funding, there has been an increase in infrastructure funding over the last four years. This investment improves university infrastructure, much of which is used for teaching and learning. Together these non-base funding programs will be an important part of the support for teaching and learning.

1.3 The level of base funding

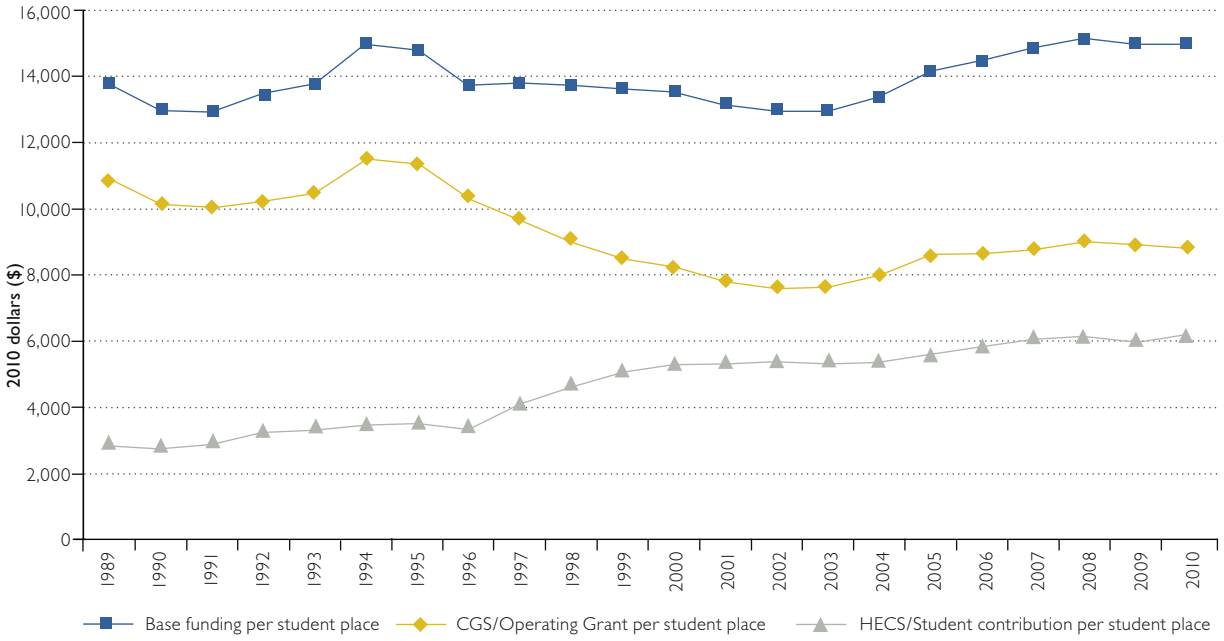
The level of base funding provided to universities per student has fluctuated over time. As shown in Figure 1.1, average base funding per student in real terms declined over a 10 year period from 1994 to 2003 but increased thereafter and was the same in real terms (based on the Consumer Price Index) in 2010 as in 1994. Average base funding per student reached its lowest point in 2003. The full introduction of improved indexation arrangements from 2012 will mean that, in the absence of other changes, the average level of base funding per student will remain more stable in real terms.

2 The relationship between higher educational attainment and productivity was discussed in the Universities Australia paper *A productive country: the contribution of Australian universities to national productivity (Universities Australia 2011)*, as well as many previous reports and research papers.

3 Protocol 3, 'Nationally agreed criteria for higher education institutions' (MCEETYA 2007).

The real value of the Commonwealth contribution per student fell sharply after the mid-1990s and, while it has increased since 2003, it remains well below the 1994 level. The overall level of base funding has been sustained through increases to the student contribution (Figure 1.1).

Figure 1.1: Income per Commonwealth supported place (2010 dollars)

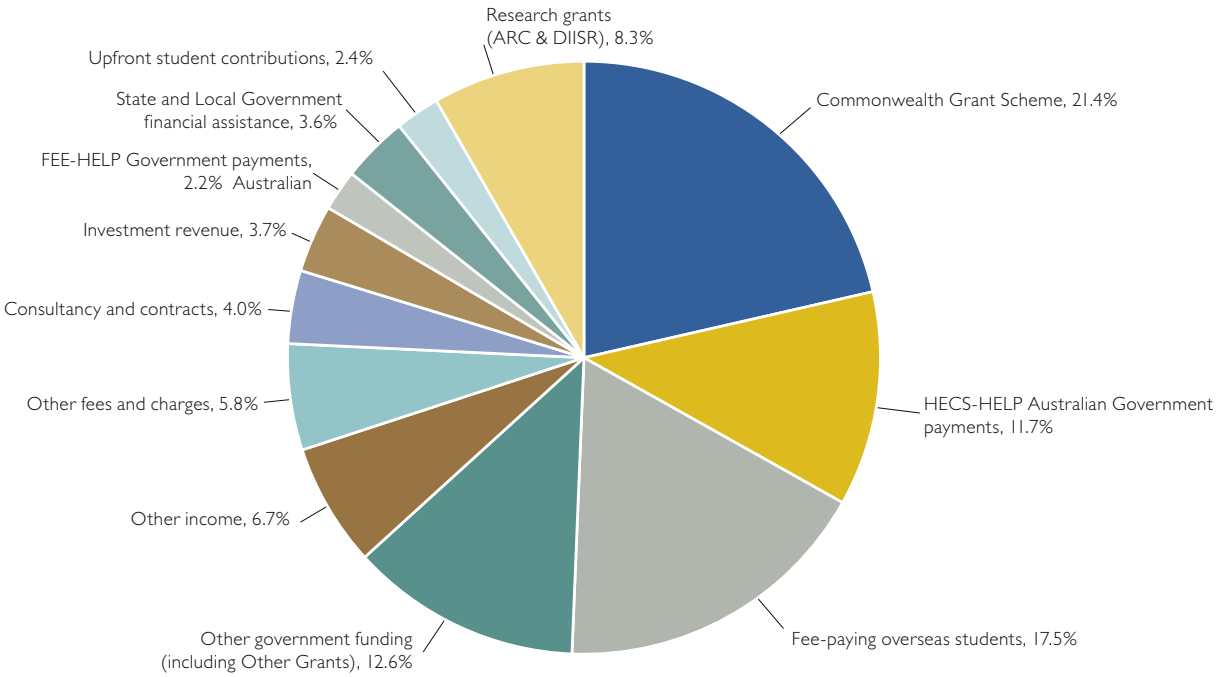


Note: From 2005 the EFTSL amounts include Commonwealth supported students only. Before 2005 the EFTSL includes HECS liable students plus some other Commonwealth subsidised students supported through the Operating Grants. Before 2001 HECS liable students included a small amount of EFTSL for research students.

Source: DEEWR administrative data.

Base funding is only one source of revenue for Australian universities. Universities derive income from a wide range of other government and non-government sources. In 2010, base funding contributed approximately 35 per cent of universities' total revenue. Other important sources of revenue for universities include income from full fee–paying domestic and international students, income for research activity (from both government and non-government sources), contracts and consultancies, property and investment income, and donations and bequests (Figure 1.2).

Figure 1.2: Total revenue, by source, 2010



Note: Other income includes scholarships and prizes, non-government grants, net gain on sales of assets, foreign exchange gains and other sources.

Source: DEEWR 2011.

Universities' expenditure on teaching, scholarship and base capability in research is dependent on both the level of base funding and the choices universities make in relation to utilising other sources of revenue. No consistent data on actual expenditure on teaching and learning over time is available; all that the Panel has is data showing changes in base funding and total revenue over time. The Panel's commissioned research on university expenditure, the costing study discussed in Chapter 3, demonstrates this point with some universities spending more on teaching and scholarship than they receive in base funding. The sources of additional revenue may be other government funding or alternative private revenue but it is a feature of the Australian system that the level of base funding is supplemented by other revenue sources.

1.4 The allocation of base funding

Higher education providers receive base funding of an amount that is calculated according to the number of full-time equivalent Commonwealth supported students enrolled in units of study. Units of study are classified under one of eight funding clusters and students are charged under one of four student contribution bands (see Table 1.1).

Some of the funding received by universities is delivered as loadings. These Regional, Enabling, Transitional and Medical Student Loading payments are on top of the CGS cluster funding allocation and are clearly for the purposes of teaching and learning. They are aligned with categories of students or specific delivery, such as at a regional campus. The Regional Loading was not considered by this Review. The Medical Loading is considered in Chapter 3. The Enabling Loading is considered along with other issues related to access and equity in Chapter 6.

Table 1.1: CGS funding clusters and maximum student contributions for an equivalent full-time student load, 2011

Funding cluster	Part of funding cluster	Maximum student contribution amounts	Australian Government contribution ($)	Total resourcing ($)	Weighting
Funding cluster 1 Law, accounting, commerce, economics, administration		9,080	1,793	10,873	1.0
Funding cluster 2 Humanities		5,442	4,979	10,421	1.0
Funding cluster 3 Mathematics, statistics, behavioural science, social studies, computing, built environment, other health	Mathematics, statistics	4,355	12,179[a]	16,534	1.6
	Computing, built environment or other health	7,756	8,808	16,564	
	Behavioural science or social studies	5,442		14,250	1.4
Funding cluster 4 Education		5,442	9,164	14,606	1.4
Funding cluster 5 Clinical psychology, allied health, foreign languages, visual and performing arts	Clinical psychology, foreign languages, or visual and performing arts	5,442	10,832	16,274	1.6
	Allied health	7,756		18,588	1.8
Funding cluster 6 Nursing		5,442	12,093	17,535	1.7
Funding cluster 7 Engineering, science, surveying	Science	4,355	18,769[a]	23,124	2.2
	Engineering or surveying	7,756	15,398	23,154	
Funding cluster 8 Dentistry, medicine, veterinary science, agriculture	Dentistry, medicine or veterinary science	9,080	19,542	28,622	2.8
	Agriculture	7,756		27,298	2.6

a Includes Transitional Loading amount for units of study in mathematics, statistics and science.

Note: Amounts assume all grandfathering arrangements are complete.

Source: DEEWR administrative data.

Under current arrangements the amount of base funding provided to each university is dependent on the number of places they are allocated (with arrangements for under- or over-enrolment). Under the demand driven system from 2012, base funding will hinge on the number of places each university chooses to offer and is able to fill. Under this reform the caps on domestic student numbers in undergraduate fields other than medicine will be removed, and universities will make their own decisions on the number of places to offer in each funding cluster. Caps on the number of places in undergraduate medical courses and Commonwealth supported places in postgraduate courses will remain. The allocation of places in these 'designated courses of study' will be set in the university's funding agreement, negotiated between the institution and the Government.

1.5 The current university funding context

Australian universities today have been shaped by the reductions in base funding that occurred from 1996 through to 2003. While universities were vocal in their opposition to the reduction in government grants during this period, they also took steps to accommodate the changes by diversifying revenue sources and reducing costs. The result is a higher education sector that, on the usual measures of financial performance, is strong, well managed and capable of dealing with change. Australia's public universities have modern governance and management structures. They generally budget to record surpluses, and have healthy financial reserves. The funding reductions and associated structural adjustments that have already occurred here over the last two decades have resulted in a more robust and better managed system.

Universities have also improved their output of research in all areas. More Australian universities are now ranked in the top 500 in the Academic Ranking of World Universities than when it was first introduced in 2003.

The improved outputs Australian universities have achieved during a period of constrained funding have resulted in strong productivity growth for the sector over recent years. Carrington, Coelli and Rao (2005) found that Australian universities are efficient and that their productivity increased at an average rate of 1.8 per cent per annum between 1996 and 2000, which was faster than the rate of growth in most other sectors of the economy. Similarly, Worthington and Lee (2006) found that the productivity of Australian universities increased at an average annual rate of 3.3 per cent between 1998 and 2003, though there were significant differences between institutions.

The sector's improved productivity indicates that universities are managing their resources well and have taken advantage of improved technology. For instance, Worthington and Lee (2006) found that the productivity growth in Australian universities between 1998 and 2003 was mainly attributable to improvements in the technology used to undertake research, with the more modest gains in teaching productivity also being largely due to the use of improved technology. The evidence provided to the Panel indicates that universities have continued to adopt improved technologies and are making better use of infrastructure through reforms such as improving the layout of new and existing buildings, increasingly offering courses over summer and moving to a trimester structure.

As will be discussed later in this report, Australian universities have reasonable rates of student retention, success and completion that are all better than or equal to earlier levels. Graduates today are more satisfied and have better graduate outcomes than 10 years ago. The percentage of students who were satisfied by their course experience increased from 38 per cent in 1994 to 51 per cent in 2009.

It could be argued that Australian universities are now positioned to use any increase in funding to the best advantage. The strength of Australian universities means that the Government, students and the public can feel assured that further investment in higher education will deliver good outcomes in an efficient manner.

1.6 International students

The changes to higher education funding in the 1990s affected more than the state of university finances. While the growth in international students began after the Australian Government gave universities permission to charge international students full fees in 1985, it increased strongly in the mid-1990s. The result has been a university sector that is engaged internationally, and particularly

with the region. The presence of international students in Australia has provided opportunities for institutions, staff and local students. Australian universities contribute to the region and the prosperity of other countries through international exchanges of staff, students and researchers. These linkages benefit our national life and economy. The development of offshore campuses has also given Australian universities valuable expertise in delivering higher education overseas, which is important in an increasingly globalised market for higher education.

The increase in numbers of international fee–paying students has enabled universities to diversify their income streams, with the benefit of less dependency on government but at the risk of greater vulnerability to global economic shifts.

1.7 Reasons for concern

While there is much that is positive in the current state of the university sector, the evidence supplied to the Panel through submissions and commissioned research suggests that there are also causes for concern. Measures of student satisfaction show improvement over time, but the level of student engagement during a course as measured through the Australasian Survey of Student Engagement is lower than comparable countries; a point also noted in the Bradley Review.

The response of the higher education sector to increasing costs has been to increase student–staff ratios and reduce face-to-face contact time, for example by reducing the number of tutorials. In general, students today are being taught in larger classes than 20 years ago. The Panel accepts that a low student–staff ratio does not necessarily deliver a higher-quality learning experience, and notes that increased attention to teaching over the past decade has improved the quality of teaching. However, there is a point at which higher student–staff ratios and related changes diminish the quality of the broader learning experience offered to students.

As well as higher student–staff ratios there has been an increased casualisation of academic teaching staff over the last 15 years. This is not all negative; it can be an efficient way to deliver tutorials and postdoctoral students can be at the forefront of the latest research in their discipline. People with valuable and relevant industry experience can be integrated into part-time teaching from the private sector. Many universities have sought to address concern about the quality of casual teaching staff by increasing the professionalism of all staff through training. Nevertheless, there remain cogent arguments that student access to casual staff is limited due to the necessarily reduced time these staff may be available and that any ongoing contact lacks continuity.

Despite productivity increases within a responsive sector, contributors to the Panel expressed a significant level of concern about the volatility of diversified income streams and the potential for international competition to erode Australia's competitive advantage. Rising costs were also cited as a threat to the sector's capacity to remain competitive.

The international competitiveness of the Australian university sector and an assessment of the costs universities face will be discussed in subsequent chapters of this report. However, before assessing the adequacy of funding it is worth noting that as a nation we need to decide whether we are satisfied with current levels of quality in our education sector and with our current standing relative to the university systems of comparable overseas countries. If we wish to strengthen the contribution of higher education to national productivity and improve the quality and performance of our universities, now is an opportune time to invest additional resources in higher education. While there may still be some room for efficiency gains, there is no doubt that the high levels of efficiency and productivity now evident across the sector provide a robust base from which the quality of the higher education system can be enhanced through additional levels of investment.

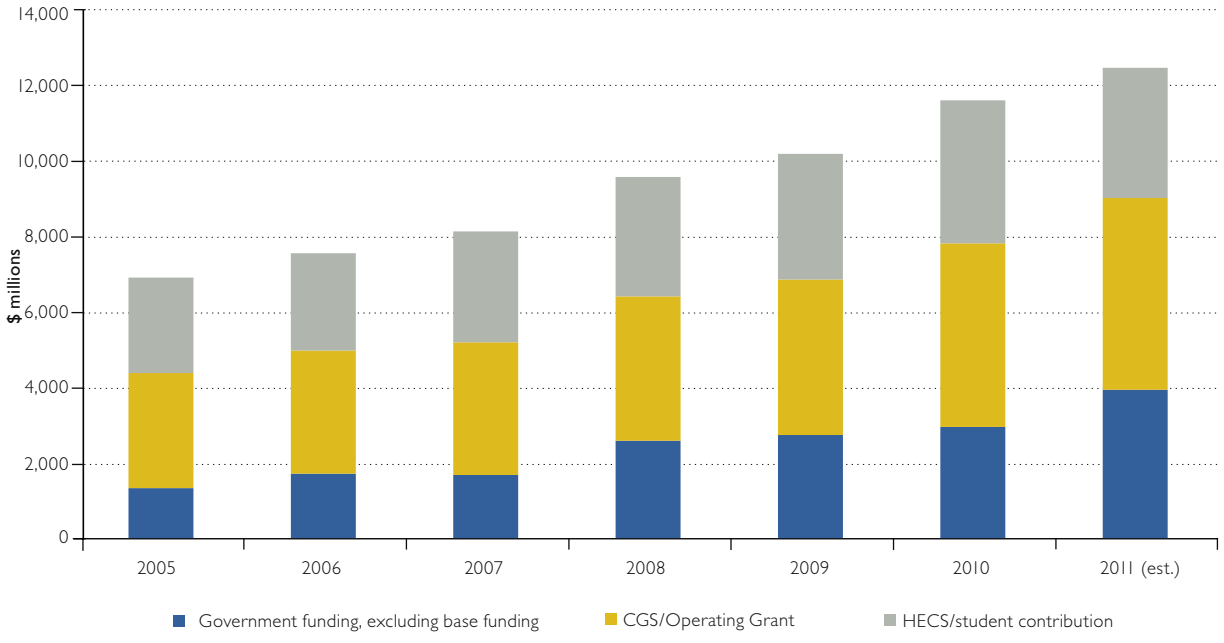
1.8 The evolving reform agenda

The changes being introduced by the Government impact on the issues examined by the Panel in several ways. The Government is increasing funding to universities, with some elements of this funding directly related to student places and others impacting on the demands on general revenue. The answer to the question of whether Government funding is adequate will be affected by this additional funding. The timing of these changes has been a challenge to the Panel as the increased funding is being phased in and the full effect will not be apparent until after 2012. Apart from the increase in funding, the changes involve policy shifts that affect the mechanisms of distributing base funding both by Government and by universities internally.

To implement its response to the Bradley Review, the Government has provided the higher education sector with a significant increase in funding since 2010 and has committed to further growth in funding over coming years.

In 2007, total government funding to the higher education sector was $8 billion, of which base funding was $6.4 billion. In 2011, total government funding had reached close to $12 billion, of which $8.5 billion is base funding (Figure 1.3). It is estimated that in 2013, total government funding will be $13.6 billion and total base funding will be $10 billion. These funding increases will amount to an additional $8.2 billion to the sector over the four year period 2010–2015 to support equity, Performance Funding, and the demand driven system as well as research excellence. A further $500 million will come from the Education Investment Fund for the tertiary sector over the next five years, although it is not yet known what proportion of these funds will be allocated to universities.

Figure 1.3: Total government funding and base funding (actual dollars)



Source: DEEWR administrative data.

1.8.1 The demand driven system for undergraduate student places

The Government's decision to introduce a demand driven system of undergraduate student places from 2012 has already resulted in a rapid expansion of places as universities have used transitional arrangements to increase enrolments before its introduction.

The increase in base funding for the demand driven system will be the main reason for the growth in government expenditure in the immediate future. This increase in funding can be expected to have a significant bearing on how Australia performs in terms of aggregate investment in higher education. It is likely that future Organisation for Economic Co-operation Development (OECD) data on the change in public investment on tertiary education over time will show an increase over these years.

Total investment, often assessed in terms of a percentage of gross domestic product (GDP), is one measure of funding levels, but the Panel has been especially concerned with the funding per student place as this is a measure of adequacy of funding for each student. The funding for the demand driven system is for expansion of numbers rather than affecting funding per student. While the Panel notes that additional places can sometimes be delivered at a marginal cost, expansion at an inadequate funding rate is a significant risk to quality. It is reasonable to expect that at least some universities have been delivering extra places in 2010 and 2011 at marginal costs as they have used existing infrastructure capacity and other existing fixed cost resources. However, there is a limit to the capacity of universities to expand enrolments without also expanding these resources.

To meet the participation targets, universities will be required to go past the point of using spare capacity. So while the current increase in funding for student places may have given an overall boost to university revenue in the short term, this cannot continue indefinitely and the adequacy of future funding must be addressed against a model of the full cost of a place. When this transition occurs will vary by institution but there may still be a window over the next one or two years in which the adequacy of funding is partly connected to marginal costs. This situation cannot be taken to be a long-term policy solution.

The demand driven system also changes the role the cluster funding model plays in allocating funding. Both the original Relative Funding Model and the CGS funding clusters were designed to allocate aggregate base funding amounts to universities that fairly reflected their respective discipline mixes. The focus in this process was the relative funding of disciplines, not the absolute amount received. That model was appropriate in a funding system where there was a fixed amount of funding available and targets were agreed for places to be offered in different disciplines.

The introduction of the demand driven system removes the cap on funding and the allocation of places. Universities will now be responsible for decisions about the number of places they offer in each discipline at the undergraduate level. It can be expected that university decisions will be strongly influenced by the extent to which discipline funding matches the costs. Over- or underfunding has the potential to create a range of inefficient incentives and disincentives. Bringing funding and costs broadly in line will be crucial for the efficient operation of the demand driven system. For this reason the Panel has sought to assess whether any disciplines are significantly over- or underfunded.

The demand driven system accompanied by the attainment and low SES student targets should see a lift in the number of university students and a change in the mix of the undergraduate student cohort. The evidence is that the expansion in the sector in 2010 and 2011 has come from reasonably qualified students previously excluded from higher education by the cap on student places. It can be expected that further growth will depend on participation by less qualified or less well prepared applicants. In this environment it will be a challenge to maintain levels of retention and completion as research indicates there is an association between university entry scores and success at university

studies. The efficiency and effectiveness of base funding will be determined by whether the sector can be expanded while maintaining and enhancing quality, including retention and completions.

The Panel considers that there is a point at which cost savings are achieved at the expense of quality. Judging the point at which this occurs is difficult but the Panel has sought to strike the balance between quality and efficiency in its deliberations.

1.8.2 Improved indexation of higher education grants

In addition to the increase in base funding for the higher number of student places, the Government has also instituted a new indexation formula that better reflects the changes in costs facing universities. The new formula was applied in 2011 for student contributions, and in 2012 for government grants under HESA, including the CGS (DEEWR 2010).

The new indexation arrangements represent a substantial increase in the funding to the sector over the next decade. The Panel supports the sector's view that improved indexation maintains rather than improves the level of funding, and in the case of base funding only maintains the level of funding per student place.

Having said that, the value of the improved indexation is much greater than if the old arrangements had continued. The additional quantum of money from the new indexation rate is estimated to be $367 million in 2012 and grows cumulatively each year. This increased indexation will provide an additional $3.15 billion over the period 2011–2015. The intention of the new indexation formula is to provide universities with an indexation rate that is more realistic in terms of their salary and other cost pressures. It is hoped that with adequate indexation, the funding in real terms would reduce the need for universities to impose cost efficiency measures on delivery models that could impact on quality.

1.8.3 Funding for participation and performance

The Panel also considered the Higher Education Participation and Partnerships Program (HEPPP) since it is relevant to equity issues within the Panel's Terms of Reference and therefore within the scope of its deliberations. The HEPPP is part of the increased funding available to the sector from 2010, and will play a part in improving the overall resourcing of universities.

In particular, the HEPPP was considered because it was designed to generate increased aspiration and participation through its partnership component, and through its participation component, improved success rates for students less likely to undertake and achieve a higher education qualification. The context and the impact of the HEPPP are discussed further in Chapter 6. The HEPPP provides $793 million over the period 2010–2011 to 2014–2015. When the participation component of the program is fully implemented in 2013 the Government estimates that it will provide approximately $1,000 for each low SES student (EFTSL).

The Panel has also been interested in Performance Funding in relation to the question of how a funding model could support higher levels of teaching quality.

Performance Funding includes $400 million over four years from 2011 for universities to develop agreed strategies for achieving teaching and learning, and equity performance targets, and reward funding of $335 million provided over four years from 2012 to universities that meet targets against a framework of performance indicators.

Together, from 2013 these programs will provide more than $328 million per year to support quality teaching and learning.

1.8.4 Funding the indirect costs of research

The Sustainable Research Excellence (SRE) program, administered by the Department of Innovation, Industry, Science and Research (DIISR), was implemented in 2009 and seeks to help universities meet the indirect costs of their Australian Competitive Grants activities. In combination with the Research Infrastructure Block Grant, also administered by DIISR, the SRE program aims to lift government funding for the indirect costs of competitive research grants from around 20 cents to 50 cents for every dollar of competitive research funding from 2013, when fully implemented. Funding for the SRE program will total $512 million for the period 2009–10 to 2012–13. From 2013, it will provide an additional $300 million (indexed) annually to help universities meet the indirect costs of research.

This additional funding addresses an area of cross-subsidisation that the Panel has sought to clarify. As will be discussed later, the Panel considers that cross-subsidies are reasonable where they are associated with the university's strategy and long-term goals, and they are an inevitable element of university autonomy. But it is not desirable that underfunding should necessitate cross-subsidisation.

In the case of cross-subsidies to assist the activities supported by competitive research grants, the source of funding has been other university revenue, including funding for teaching and scholarship, making it part of what has been referred to as 'unfunded' research. The impact of SRE program should be that less teaching and scholarship funding will be used for this purpose and that the amount of 'unfunded' research will decrease. The Panel believes that the impact of the SRE program will be a positive factor in the future sufficiency of funding for teaching and scholarship.

1.9 Summary

The Panel was asked to determine the enduring principles that should guide future funding and based its deliberations on the identified values implicit in previous decisions but not clearly articulated. In presenting these principles the Panel requests that the Government endorse these principles and in particular acknowledges that the purpose of base funding is to provide teaching informed by scholarship and base capability in research.

Recommendation 1: The purpose of base funding

The Australian Government should endorse the principles set out by the Panel.

1.10 The enduring principles to underpin investment in higher education

The purpose of providing base funding is to ensure that public universities and other eligible higher education providers have sufficient resources to maintain the quality of course delivery expected from the Australian higher education system. In providing base funding to universities, the Government should provide sufficient funds for universities to deliver high-quality teaching programs that are informed by scholarship and to maintain base capability in research and appropriately resourced facilities.

Principle 1

Base funding is provided for universities to fulfil their fundamental role of providing teaching in an environment informed by scholarship, and maintaining a base research capability, in order to contribute to Australia's economic and social development.

While acknowledging the difficulty of comparing the quality of the Australian higher education system with comparable systems overseas, the Panel nevertheless recognises that higher education is an international industry and our institutions must remain internationally competitive. It is therefore important to acknowledge, in principle, that the quantum of base funding must be adequate to enable Australian higher education institutions to remain internationally competitive, while working to improve the validity of international measures of institutional funding and quality.

Principle 2

The total quantum of base funding should support universities in the delivery of globally competitive teaching and learning in appropriately resourced facilities by adequately funding the direct and indirect costs of teaching, scholarship and base capability in research.

While the Panel acknowledges the role of base funding in supporting the general operation of universities in undertaking teaching, scholarship and research, it is important to recognise that this connects to the broader purpose of producing graduates and undertaking research that contributes to Australia's prosperity and cultural life.

Principle 3

Investment in universities through base funding enhances national productivity by developing the skills and attributes of graduates.

The Panel concluded that one of the strengths of the Australian system is that base funding is allocated using a relatively simple formula, applied consistently across all publicly funded institutions.

Principle 4

The base funding model should be simple and transparent.

Australian universities should continue to have the autonomy to allocate base funding to activities aligned with their strategic priorities.

Principle 5

Base funding should be allocated in a manner that provides institutions with the autonomy to allocate their resources internally according to their strategic priorities.

While universities retain institutional autonomy they should remain accountable and continue to report on how public resources are spent.

Principle 6

While the base funding model should uphold the principle of institutional autonomy, institutions should be accountable for how they allocate the funding.

The introduction of a student demand driven system requires that the funding for each discipline should more closely reflect the actual costs of delivery. This is required for the efficient operation of the system.

Principle 7

The base funding model should reflect the relative costs for different disciplines or modes of teaching.

Universities have been effective at diversifying their income streams and should not be inhibited from managing investments, or seeking funds from the private sector, internationalisation, or philanthropy.

Principle 8

The provision of base funding should be consistent with diversification of funding sources by institutions.

It would be inappropriate for the Government to direct institutions to allocate base funding to anything other than the broad purposes for which it is provided; therefore pursuing specific quality or other performance outcomes by altering base funding would be problematic. A more effective method of achieving these types of policy outcomes in Australian universities would be for the Government to provide targeted resources within a performance agreement where funding is awarded to universities on the basis of measurable outcomes.

Principle 9

The Government should pursue targeted policy objectives through specific programs outside of base funding where the provision of supplementary funding is linked to transparent performance measures.

Base funding is provided to universities on a uniform basis to enable them to meet the reasonable costs associated with delivering higher education courses to an agreed standard. While this is an appropriate goal of a publicly funded higher education system, universities should also be encouraged to develop innovative approaches to teaching and learning that may involve higher costs.

Principle 10

Base funding should enable institutions to pursue innovative methods of teaching and learning.

The level of private benefits from higher education courses varies considerably according to discipline; however, the Panel considers that such variations are acknowledged by the progressive repayment schedules of the income-contingent loan scheme. There are also substantial public benefits from higher education that justify a continuing public contribution to base funding. It is therefore appropriate for policymakers to use aggregate measures of public and private benefits in determining the appropriate balance of public and private contributions to the cost of higher education.

Principle 11

Base funding should be sourced from a balance of student and public contributions broadly consistent with the private and public benefits from higher education.

The terms of reference for the Review asked the Panel to take into account the Government's equity agenda of increasing access and participation of disadvantaged groups. This agenda is currently pursued through the provision of deferred, income-contingent loans that remove the barrier of upfront fees and by providing universities with financial support to enrol low socioeconomic status students. The Panel considers that it is consistent with the purposes of the base funding system for it to promote access to universities and broaden participation in higher education.

Principle 12

Base funding should be supplemented through targeted programs to support social inclusion and equity of access for eligible students.

Principle 13

The base funding model should be accompanied by appropriate measures so that student contributions are not a financial barrier to participation in higher education.

Chapter 2: Strengthening Australian higher education

In asking the Panel to identify enduring principles to underpin public investment in higher education, the Australian Government also asked for indications of the way in which these principles should be applied to ensure that the level of Government funding for undergraduate and postgraduate coursework remained internationally competitive and appropriate for the sector. The Panel was also asked to identify international benchmarks and trends for undergraduate and postgraduate coursework education and the level of base funding required for Australian universities to deliver such courses competitively. The terms of reference also suggested that the Panel examine international benchmarks for course quality and student engagement, while acknowledging the future role of the Tertiary Education Quality and Standards Agency in defining a standards framework for higher education delivery.

This chapter explores the available data on higher education funding at system and institutional levels that may be broadly comparable with base funding for Australian universities. The Panel has compared Australia's higher education system with those of other countries on measures such as the level of total base funding as expressed by measures of gross domestic product (GDP) and the level of base funding per student place. The Panel also sought to make comparisons with selected comparable universities on a range of other indicators including measures of student engagement, student satisfaction, student–staff ratios and employer perceptions.

2.1 The comparative quantum of funding as a proportion of GDP

Australia's total investment in tertiary education in 2008, the most recent year for which internationally comparable data for the OECD is available, was calculated to be 1.5 per cent of GDP, and this represented public investment of 0.7 per cent and private investment of 0.8 per cent. For the OECD as a whole, total investment was 1.5 per cent (1.0 per cent public and 0.5 per cent private). For the European Union (EU) countries, total investment was 1.3 per cent comprising 1.1 per cent public and 0.2 per cent private (OECD 2011a).

In 2010 the operating revenue for higher education in Australia's public universities totalled $22.1 billion, or 1.6 per cent of GDP. This figure includes income from all sources, including student fees, investment income, consultancies and contracts, donations and bequests. Public contributions (Australian, state and local government funding excluding HELP payments) totalled $10.1 billion, or 0.7 per cent of GDP.

In its submission to the Panel, Universities Australia argued that 'base funding should complement other funding so as to enable overall funding to reach 2 per cent of GDP for higher education in the medium to long-term' (submission no. 130, p. 30). This reflects a proposal made by the European Commission in 2006 that, by 2016, the European Union should aim to devote at least 2 per cent of GDP, comprising both public and private funding, to a modernised higher education sector (Commission of the European Communities 2006a).

Four OECD countries in 2008 invested at levels at or above the European Commission's target of 2 per cent: the United States, Canada, Korea and Chile (OECD 2011a). Public investment in the first three of those countries was 1.0 per cent, 1.5 per cent and 0.6 per cent respectively (public investment data for Chile was not available). The European Commission's arguments for its proposed 2 per cent target centred on gaps in expenditure on research and development (R&D) and higher education in Europe relative to the United States. The Commission considered that those gaps were a result of inadequate contributions by business to R&D (Commission of the European Communities 2006b) and by students to their education costs (Commission of the European Communities 2005).

By 2008, no European country had met the target proposed by the Commission of the European Communities. Denmark, Finland and Norway had the highest expenditure, at 1.7 per cent of GDP (OECD 2011a).

Since 2007, the financial situation has deteriorated in many countries in Europe, with universities, because of their 75 per cent overall reliance on public funding, being particularly vulnerable to government funding cuts. In 2011, government funding for higher education is increasing in France and Germany only. Many other countries' university sectors are experiencing funding decreases, generally in absolute terms but also in terms of reduced per student funding (Estermann and Pruvot 2011). In the United States, expenditure from state and national appropriations for public higher education was fairly constant at 0.6 per cent of GDP between 2005 and 2010 (State Higher Education Executive Officers 2011, United States Bureau of Economic Analysis 2011). However, the preservation of total funding to US universities is due to increases in federal funding to replace cuts by the states. In August 2011, 33 states were reported as having reduced their higher education funding by up to 13.5 per cent (Chronicle of Higher Education 2011).

European government debt and widespread funding cuts make achievement of the 2 per cent target unlikely, unless European countries are willing to dramatically restructure their higher education funding towards greater private contributions, in a manner similar to England's funding reforms (Department of Business, Innovation and Skills 2011). While expenditure as a percentage of GDP has some merit in allowing broad international comparison of the total expenditure on higher education teaching and research, the indicator has its limitations in terms of comparisons of either base funding or quality. In the current economic environment it is worth noting that some nations have experienced a falling GDP.

Higher education expenditure is driven at least as much by participation levels as by the level of expenditure per student and expenditure for the former will increase considerably in Australia when funding for undergraduate student load is uncapped from 2012. In search of a more useful indicator of globally competitive levels of funding for teaching and learning, the Panel has therefore explored other measures that provide international comparisons of per student funding levels within publicly funded research universities.

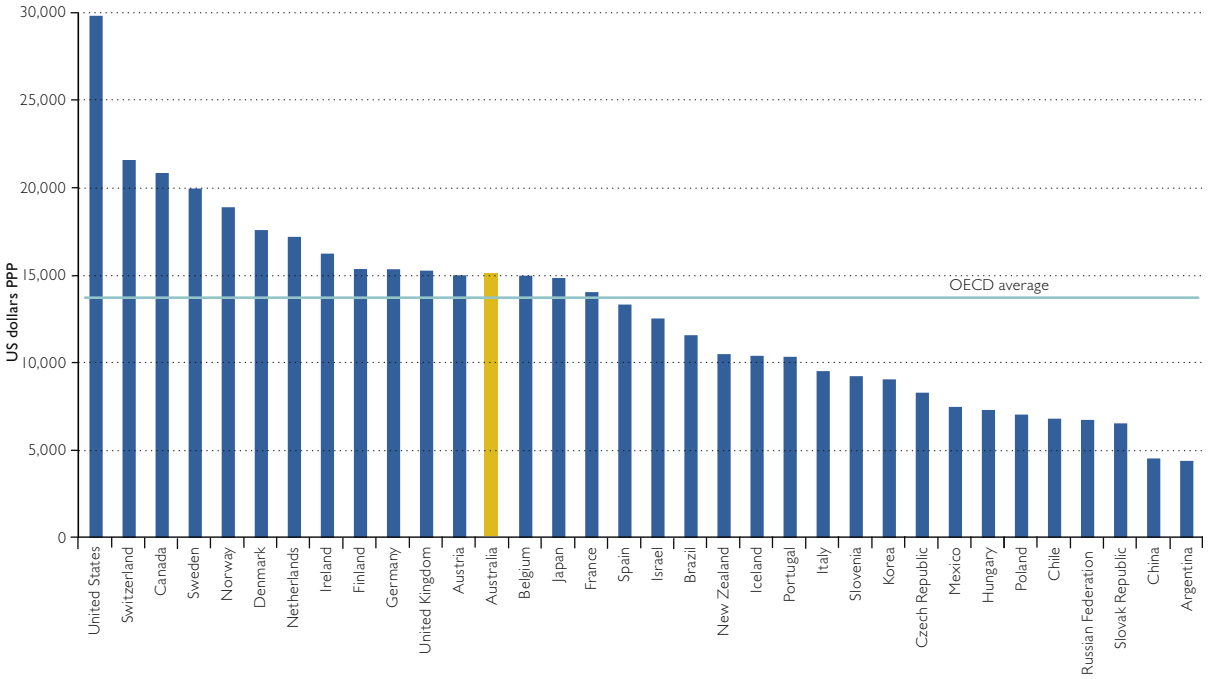
2.2 The comparative level of funding per student place

Comparisons of per student funding levels across national systems, and even at the institutional level, must be treated with caution, for several reasons. Australia is unusual in having its entire public university system composed of research universities. Almost all other countries have a mix of institutions, including teaching-only institutions that operate at a lower cost than institutions undertaking research. Countries that have prescribed funding levels based on student numbers or completions are more directly comparable but loadings, performance payments and other factors

still make those comparisons problematic. Funding per student may deliver all, some or none of the funding to support research capacity, and treatment of students from outside the funding jurisdiction varies.

National level data for 2008 compiled by the OECD shows that annual expenditure on tertiary education (which includes research and some higher level vocational education and training qualifications) per student in Australia was just above the OECD average, similar to Finland and Germany, but behind Ireland, the Netherlands, Denmark, Norway, Sweden, Canada, Switzerland and the United States (Figure 2.1).[4]

Figure 2.1: Annual expenditure on tertiary education per full-time equivalent student, 2008

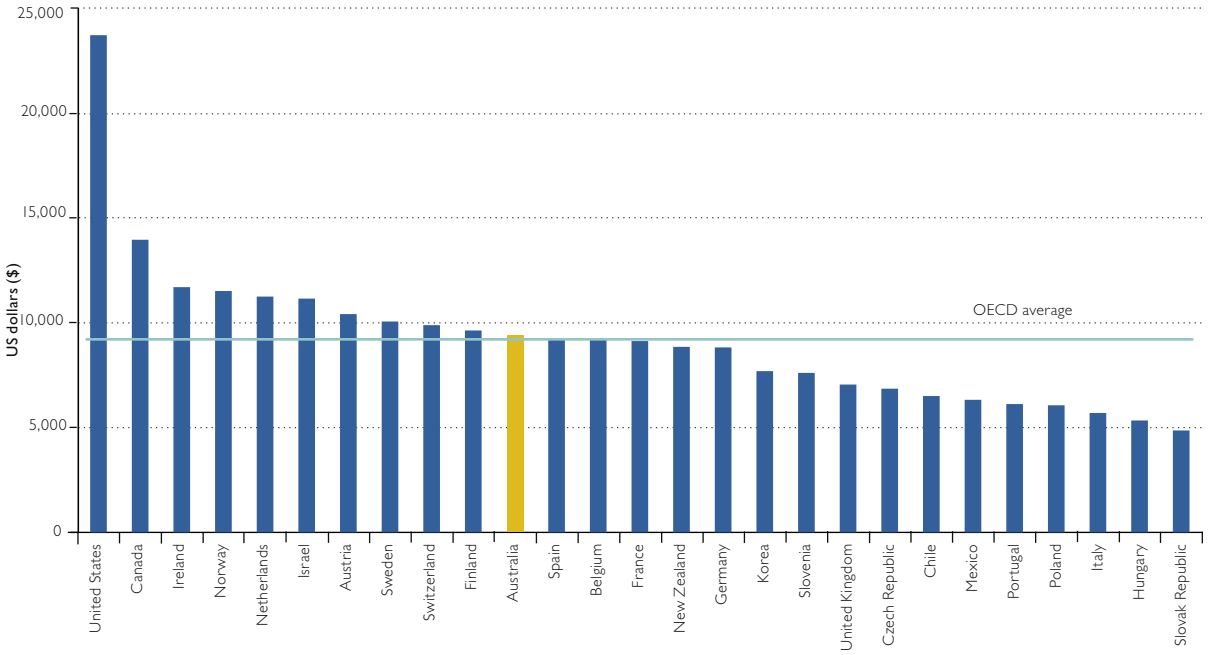


Source: OECD 2011a.

Annual expenditure excluding R&D is a better approximation of comparative levels of base expenditure for teaching and learning (Figure 2.2). It shows that on this measure in 2008 Australia was at the OECD average, similar to New Zealand, France and Spain, but behind a range of countries including Norway, the Netherlands, Austria, Switzerland, Canada and the United States. It is notable that the gap between Australia and Canada, a country with which we often compare ourselves, was very large on these indicators. Overall, while Australia stood at the OECD average, it was below the top 20 per cent of nations. On this scale, Australia would have needed a 20 per cent increase in non-R&D expenditure per student to have ranked in the top 20 per cent of OECD countries.

4 The OECD indicators for public expenditure on tertiary institutions used in this section exclude most public subsidies and grants (such as HELP in Australia) and other income and student support funding. The most recent OECD data on the funding of education is for the 2008 calendar year.

Figure 2.2: Annual expenditure excluding R&D by tertiary education institutions per full-time equivalent student, 2008



Source: OECD 2011a.

Because this data is national aggregates of a wide range of tertiary institutions, as defined by the OECD, the Panel has attempted to make more direct comparisons (Table 2.1). These 'base funding' equivalent estimates for universities are based on the stated tuition fee; however, for countries like the United States, average tuition fees paid are lower after fee waivers, scholarships and reductions are taken into account. The use of OECD Purchasing Power Parities (PPP) to convert to a common currency may not, however, adequately capture cost relativities for the different countries. Capital funding for buildings is customarily allocated separately from base funding for recurrent expenditure through arrangements that are not readily comparable with the combination of capital funding mechanisms in the Australian university system.

To the extent that direct comparisons can be made with different systems, Table 2.1 suggests that in 2009, base funding levels per place for teaching and learning in Australian universities were broadly comparable with those for England and Denmark, somewhat greater than New Zealand, and below the average for all US public higher education institutions.

Comparing the funding of Australian universities with funding for universities in the United States is problematic due to the diversity of the US higher education system. US public universities are funded through appropriations at both the state and national level that are driven by diverse factors and are subject to annual political scrutiny and approval. Not all US institutions are comparable to Australian universities. The Panel has therefore examined whether excellence in US public research universities reflects high system-wide funding levels or selective funding of specific institutions.

Table 2.1: Average base funding level per student in selected countries

Country/sector/university	Government contribution (US dollars)[a]	Student contribution (US dollars)[a]	Total (US dollars)[a]
Australia			
Australian public universities[h]	6,142	4,172	**10,314**
United States			
All US public higher education institutions[b]	4,321	6,451	**10,732**
All US public doctoral institutions[c]	n.a.	7,811	**n.a.**
Delaware public higher education	5,643	9,392	**14,952**
California public higher education	5,914	1,777	**7,718**
Representative Michigan public universities[d]			
University of Michigan Ann Arbor	12,841	12,590–17,973	**25,431–30,814**
Michigan State University	7,706	11,670–12,762	**19,376–20,468**
Eastern Michigan University	4,514	8,399–11,004	**12,913–15,518**
England[e]			
All English universities	5,258	4,016	**9,274**
University of Bristol	7,285	4,825	**12,109**
University of Cambridge	7,962	5,752	**13,714**
University of East Anglia	5,169	6,811	**11,979**
University of Exeter	5,369	5,454	**10,813**
University College London	7,944	6,196	**14,140**
Denmark			
All Danish universities[f]	10,500	n.a.	**10,500**
New Zealand			
All New Zealand universities[g]	5,559	2,927	**8,485**

Note: There are extensive caveats and conditions on this data, and it should only be interpreted in conjunction with the source notes in Appendix 1.

The data for the three Michigan state public universities (Table 2.2) suggests that the eminence of flagship universities in the United States (such as University of Michigan, Ann Arbor) is supported through selective appropriation and higher tuition fees at these institutions, rather than high, uniform per student government funding levels across the system. The Michigan funding system can be compared to the total of base funding and research block funding received by Australian universities. The differential funding levels provided to the three Michigan universities provide a basis for the institutions to attract differential levels of external funding in the form of student fees and research income. These differences in income lead to differences in expenditure on teaching and research, which are associated with performance against proxy measures of quality such as staff salaries, student–staff ratios and international rankings (Table 2.2).

Table 2.2: Expenditure per full-time equivalent student, and proxy measures of quality, selected Michigan public universities, 2008 financial year

	University of Michigan Ann Arbor	Michigan State University	Eastern Michigan University
Expenditure per FTE student (USD)[a,b]			
Instruction[b]	18,935	12,384	5,811
Research[c]	15,109	6,180	282
Total[d]	**95,588**	**33,661**	**15,634**
Proxy measures of quality			
Average academic salary (US dollars)	91,680	90,955	71,781
Student–staff ratio[a]	12:1	17:1	18:1
THE World University Ranking 2011[e]	18	96	n.a.

a FTE student base includes all enrolled students regardless of funding status (ie. includes non-resident and international students).

b 'Instruction' includes expenses of the colleges, schools, departments, and other instructional divisions of an institution and expenses for departmental research and public service that are not separately budgeted. Information technology expenses relate to instructional activities if the institution separately budgets and expenses information technology resources are included (otherwise these expenses are included in academic support). Institutions include actual or allocated costs for operation and maintenance of plant, interest and depreciation.

c 'Research' includes expenses for activities specifically organised to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organisational unit within the institution. The category includes institutes and research centres, and individual and project research.

d Total core expenses as defined by IPEDS. Includes expenses for instruction, research, public service, academic support, institutional support, student services, operation and maintenance of plant, depreciation, scholarships and fellowships, other expenses and nonoperating expenses. Excludes expenses for auxiliary enterprises, including dormitories and hospitals.

e Times Higher Education (THE) World University Rankings (see Figure 2.3 for definition).

Source: National Center for Education Statistics 2009.

It should be noted that comparisons of income, expenditure and student–staff ratios between universities in different countries are also influenced by discipline mix. For example, if one university's provision is concentrated in a high-cost discipline such as engineering or science, then differences in the average income or expenditure per student may reflect factors such as the disciplinary mix of subjects taught and the extent of postgraduate teaching and research.

2.3 The relationship between funding and performance

Government funding is provided to English universities in a manner similar to Australia, so the Panel was able to develop a limited but useful comparison of selected English and Australian universities (Figure 2.3). The Higher Education Funding Council for England (HEFCE) provides teaching funding on the basis of student load and research funding according to a performance-driven formula. The highest ranked English universities receive similar base funding for teaching as lower ranked English universities and Australian universities. The difference in the English examples is presumably due to differences in the disciplinary mix of students or the London loading in the case of University College London (UCL).

There are, however, large differences in research funding with the totals for teaching and research for the University of Cambridge and UCL being comparable with that of the similarly ranked University of Michigan, Ann Arbor.

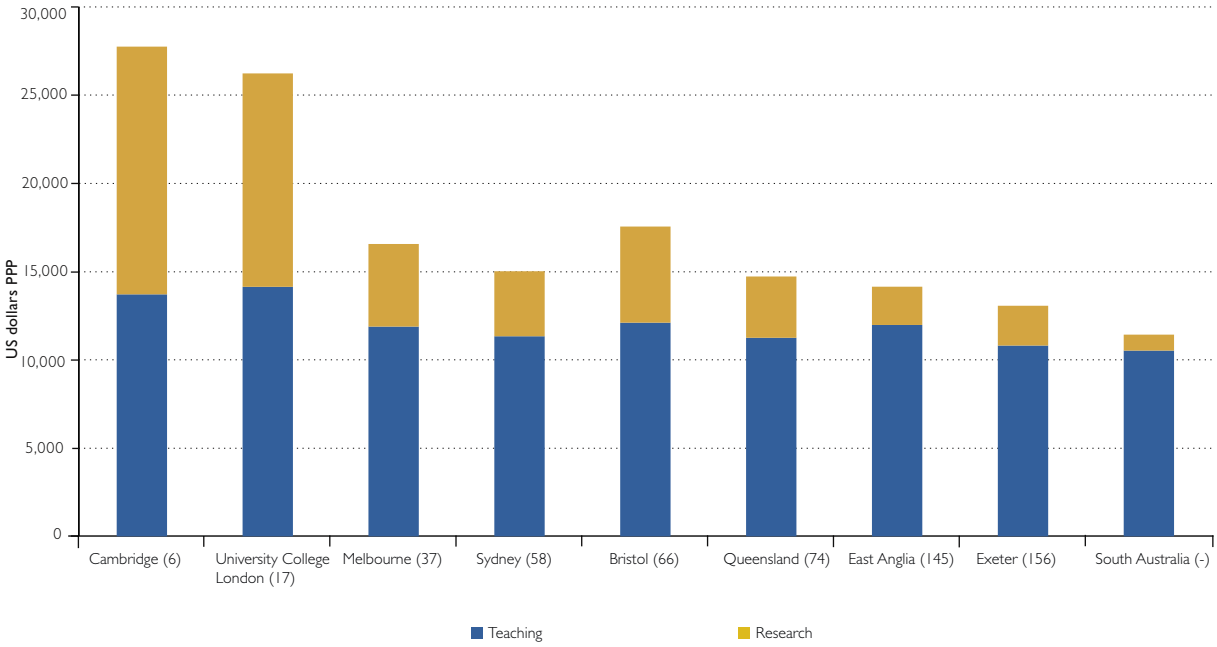
Funding levels for teaching in English universities may change significantly following confirmation by the English Government of changes to funding arrangements for the 2012–13 academic year (Department for Business, Innovation and Skills 2011). The Office of Fair Access in England (2011) suggests that when fee waivers are included, the estimated average student contribution will be £8,161 ($US 12,700 using PPP). The English Government estimates that base funding for teaching and research will increase on average by nearly 10 per cent by 2014–15 (Department for Business, Innovation and Skills 2011, p. 16) but the impact of recent policy changes on individual universities is not clear.

From this analysis, it would appear that measures of overall university excellence, such as those captured by the Times Higher Education World University Rankings (Figure 2.3) are correlated with the level of research funding received by selected institutions within jurisdictions. It is also apparent that the high funding levels received by the more highly ranked US and British public research universities are related to levels of research funding above those for the highest ranked Australian universities. The high levels of research funding provided to high-ranking universities in England and United States may result from either selectively favourable appropriations or performance-based allocation of funding earmarked for research.[5]

Given that a relatively high level of research expenditure is usually associated with a university attaining a better position in international rankings, the position of Australian universities in the international rankings is likely to be influenced more by their level of research expenditure than their level of base funding for teaching and learning. Nevertheless, teaching reputation is a feature of the Times Higher Education World University Rankings (15 per cent) and the QS World University Rankings includes a dimension for 'faculty–student ratios' (20 per cent).

5 The Panel notes that it is not possible to determine precisely the sources of research funding received by universities overseas to make a comparison with Australia's system of specific research funding received by public universities through Government block and competitive research funding schemes.

Figure 2.3: Teaching and research funding per full-time equivalent student for selected English and Australian universities, 2009



Note: British pounds and Australian dollars are converted to US dollars using OECD PPPs for 2009. Times Higher Education World University Rankings 2011 are shown in parentheses for each university. This annual ranking of the top 200 universities uses 13 indicators grouped under five categories: teaching (30 per cent); research (30 per cent); citations (30 per cent); international outlook (7.5 per cent); and industry income (2.5 per cent). Per capita funding levels are HEFCE teaching and research funding levels for 2009–10 divided by total UK and EU resident student full-time equivalent (excluding HDR student load) (for English universities); and base funding (CGS and HECS–HELP) and research block grants (for Australian universities).

Source: Secretariat, using Higher Education Statistics Agency and HEFCE funding data for English universities (2009) and DEEWR administrative data for Australian universities (2010).

As it stands, individual Australian universities perform well in the international league rankings. Four of Australia's universities were ranked in the top 100 in the world in the 2011 Times Higher Education World University Rankings. This was the fourth highest of any country (Table 2.3).

Gibbs (2010, p. 14) points out that international educational performance is more dependent on which activities institutions spend their money on than the comparative level of funding they receive. Hence, if the purpose of increasing funding was to improve Australia's international rankings then research funding would need to rise. Alternatively, if the objective was to increase the funding per student in OECD comparisons, base funding would need to rise. However, neither increase in spending would guarantee an increase in teaching quality.

Table 2.3: National performance: Times Higher Education World University Rankings 2011, top eight countries within the top 100 ranked universities

Country	Number of universities in top 100	Highest ranked university (rank)
United States	51	California Institute of Technology (1)
United Kingdom	12	University of Oxford (4)
Canada	5	University of Toronto (19)
Australia	4	University of Melbourne (37)
Switzerland	3	Swiss Federal Institute of Technology, Zürich (15)
Germany	3	Ludwig-Maximilians-Universität, München (45)
China	2	Peking University (49)
France	2	Ecole Normale Supérieure (59)

Source: Times Higher Education Supplement 2011.

The most recent of the major international rankings, the QS World University Rankings 2011–12,[6] ranked all of the Group of Eight universities[7] in its top 100. Australia's comparative performance is shown in Table 2.4.

Table 2.4: National performance: QS World University Rankings 2011–12, top six countries

Country	Number of universities in top 100	Highest ranked university (rank)
United States	29	Harvard University (2)
United Kingdom	18	University of Cambridge (1)
Australia	8	Australian National University (26)
Japan	6	University of Tokyo (25)
Canada	4	McGill University (17)
Germany	4	Ruprecht-Karls-Universität Heidelberg (53)

Source: Quacquarelli Symonds (QS) Limited 2011.

In the more strongly research-oriented Shanghai Jiao Tong (SJT) Academic Ranking of World Universities 2011, Australia also performed well. Its comparative performance is shown in Table 2.5. Unlike the QS World University Rankings and the Times Higher Education Supplement's World University Rankings, the SJT Academic Ranking does not include teaching reputation as an indicator.

6 Quacquarelli Symonds (QS) Limited, founded in 1990, specialises in international education and assisting students who study abroad. The QS World University Rankings evaluate over 700 universities and ranks the top 400 according to six key indicators: academic reputation (40 per cent); citations per faculty (20 per cent); faculty–student ratio (20 per cent); employer reputation (10 per cent); proportion of international students (5 per cent); and proportion of international faculty (5 per cent).

7 The Group of Eight universities are: Monash University, The Australian National University, The University of Adelaide, The University of Melbourne, The University of Queensland, The University of Sydney, The University of Western Australia and the University of New South Wales.

Table 2.5: National performance: SJT Academic Ranking of World Universities 2011, top seven countries

Country	Number of universities in top 100	Highest ranked university (rank)
United States	53	Harvard University (1)
United Kingdom	10	University of Cambridge (5)
Germany	6	Technical University Munich (47)
Japan	5	University of Tokyo (21)
Switzerland	4	Swiss Federal Institute of Technology, Zürich (23)
Canada	4	University of Toronto (26)
Australia	4	The University of Melbourne (60)

Source: Shanghai Jiao Tong Academic Ranking of World Universities 2011.

While research performance is clearly a dominant factor in international rankings, there are other dimensions in which one can measure the performance of the Australian higher education system in an international context. For example, a comparison of university systems in 17 OECD countries conducted by the Brussels-based think tank, the Lisbon Council, ranked Australia's university system as the best (Ederer, Schuller and Willms 2008). The Lisbon Council ranked national systems using a range of metrics (inclusiveness, access, effectiveness, attractiveness, age range, responsiveness) rather than the research and other excellence metrics that dominate international league rankings.

2.4 The connection between funding and quality

Comparisons of the level of funding by itself cannot be used to determine a desirable level of base funding for higher education. If Australian universities are able to undertake teaching, scholarship and base research capability at a world-class level with base funding lower than other countries then this in itself would not make a case for additional funding. However, it would be of concern if a lower amount of base funding was responsible for Australian universities performing below their international peers in the quality of teaching and learning or research.

Throughout the review process, universities were concerned that funding shortfalls would ultimately result in a decline in quality and international competitiveness. In its submission, The University of Melbourne argued that the current funding system was not based on quality objectives and that 'funding rates are set without reference to the standards that universities are required to meet' (submission no. 72, p. 5). The Panel heard arguments that because of funding shortfalls, universities had been forced to deliver courses at less than an optimal level of quality, increase student–staff ratios, employ more casual staff and increase the number of full fee–paying domestic and international students.

The Panel's view is that the overarching quality of Australian higher education courses is good and of an internationally competitive standard. The Panel has reached the conclusion that the style of education delivered in Australian universities is efficient and innovative in parts but involves some compromises.

In practice this means the typical student in an Australian university will be taught well and finish their studies relatively quickly, having achieved the stated outcomes for their course. However, they may have had limited interaction with academic staff, who will often be employed on a casual basis. Graduates may have limited training in operating in a relevant work environment and perhaps less development of critical thinking skills than their employers deem desirable. Students are more likely to be taught in larger classes than in the past and not all students will be highly satisfied with their education experience or the quality of their interactions with teachers. The standard of infrastructure and amenities is generally sound but there is a need for more contemporary learning spaces and state-of-the-art technologies.

These compromises may have real consequences in terms of the benefits society and students achieve from their investment in higher education. These areas of concern should not detract from the achievements of the Australian higher education system in offering a consistent and reliable level of high quality higher education. It is easy to take for granted the quality of the Australian system but it should be remembered that Australia was an innovator in establishing a national qualifications framework, yet to be achieved in some OECD countries. At the institutional level it is clear that over the last 20 years Australian universities have made teaching quality a key organisational deliverable rather than a decision for individual academic staff.

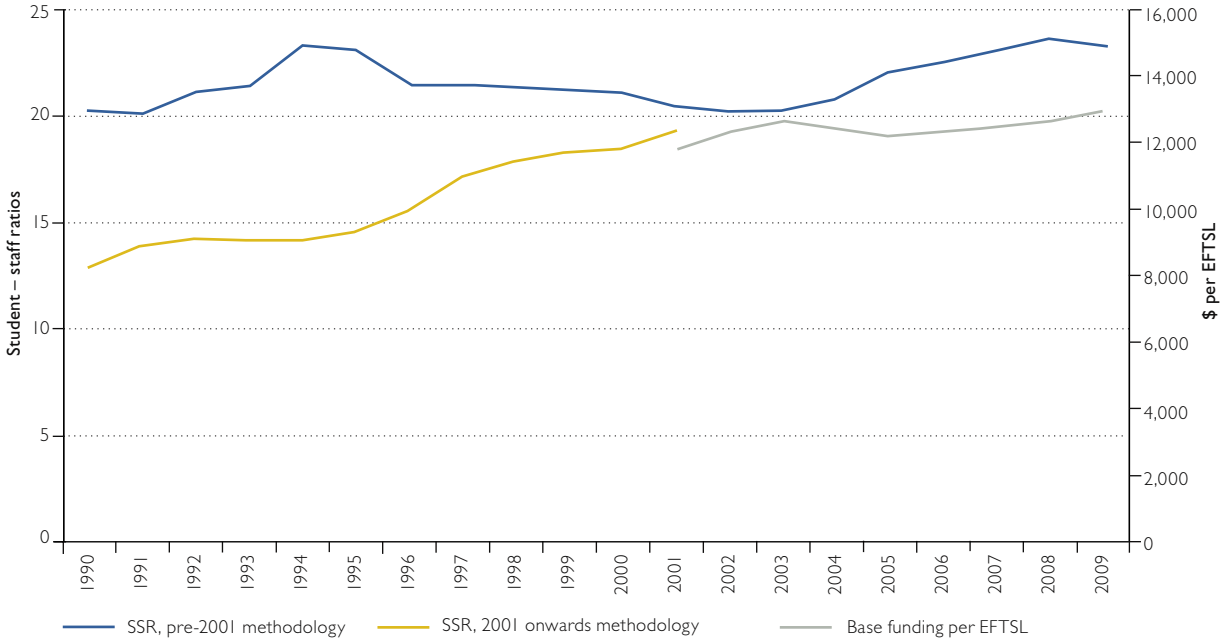
The following sections assess the quality of Australian higher education and how it has changed over time and assesses it against international comparisons.

2.4.1 Student–staff ratios and teaching quality

The discussion of teaching quality at Australian universities has been dominated by increases in student–staff ratios over the last 20 years. The Panel has reservations about the strength of the link that is sometimes made between student–staff ratios and quality but it is hard to ignore the basic proposition that the higher the student–staff ratio, the less time academic staff have for each student and for other activities. Hence, the real impact of student–staff ratios can be seen in their effect on student engagement and teaching quality. High ratios in themselves should not be seen as evidence of poor teaching quality or learning outcomes. As such, student–staff ratios are an accepted proxy for quality and so form an important element of the Panel's considerations.

There is evidence of a correlation between student–staff ratios and shifts in funding per subsidised student place in Australia. Average student–staff ratios increased between 1996 and 2003 at the same time that base funding per student place declined. Student–staff ratios then stabilised when base funding rates per student began to increase (Figure 2.4) although they have increased slightly from 2005 despite additional funding and an increase in real terms in the funding per student place. While the Panel cannot establish a direct causal correlation between these two trends, in higher education the bulk of expenditure is on direct and indirect salary costs. It could therefore be expected that student–staff ratios would be affected by levels of base funding.

Figure 2.4: Student–staff ratio (SSR) and real base funding per domestic EFTSL in Australian universities, 1990–2009



Notes: Pre-2001 student–staff ratios were calculated using all student load. From 2001 onwards, ratios were calculated using only onshore students.
Staff refers to full-time equivalent staff with work function of 'Teaching only' or 'Teaching and Research only'. Data subject to change by DEEWR

Source: DEEWR administrative data.

While increased funding and improved student–staff ratios would not automatically bring about improvement in the quality of the student experience, the research undertaken by Gibbs, in a comprehensive analysis of indicators of teaching and learning quality, points to a reasonable student–staff ratio as one of the four key measures that are effective in predicting educational gain. The other indicators are level of student effort and engagement; who undertakes the teaching; and the quantity and quality of feedback to students on their work (Gibbs 2010, p. 5). While innovative methods of teaching and the use of contemporary educational technologies also have an impact on the quality of the student's learning experience, these inputs cannot be a substitute for access to academic staff. The Panel notes that student–staff ratios in Australian universities are high in historical terms and by international standards, and believes that it would be difficult to improve the quality of higher education significantly while they remain at current levels.

2.4.2 Concerns about the student experience in Australian universities

There is a considerable body of research suggesting that student–staff ratios cannot measure the quality of teaching by themselves (Toutkoushian and Smart 2001, Porter 2006, Bekhradnia 2009). The evidence suggests that student success in completing higher education courses is influenced by levels of student engagement in learning, as measured by the quality of the interactions they have with teaching staff (Chickering and Gamson 1987). The ratio of numbers of students to academic staff obviously influences the quality of such interactions, even if they do not provide a complete explanation of the quality of a student's learning experience.

The level of student effort and engagement, and the quantity and quality of feedback to students on their work, are two of the four key indicators of quality teaching and learning. This is consistent with Chickering and Gamson's principles of good practice in undergraduate education. Gibbs presents evidence that these measures give a more complete picture of quality than funding levels, research performance and institutional reputation.

In line with these findings, the quality of the student experience has been the subject of increasing research in Australia over the past 20 years. As a result, it is becoming possible to identify strengths, weaknesses and trends in student engagement at the national level. Furthermore, there is some limited opportunity for international comparison that has provided insights into a number of proxy measures of educational quality. Sources of evidence include the Course Experience Questionnaire (CEQ) and the Australasian Survey of Student Engagement.[8]

No measures of student satisfaction, engagement, or learning gains are universally accepted and endorsed. However, the Panel noted that the Government is consulting with the sector on new quality measures including versions of the Collegiate Learning Assessment and the University Experience Survey. It is intended that the new measures will be used for allocation of Performance Funding from 2014.

Student satisfaction levels in Australian higher education, as evidenced by the CEQ, appear to have increased little since around 2000 after steady improvement during the 1990s. The level of overall satisfaction of recent Australian graduates has remained at around 70 per cent for this period of time. By comparison, the overall satisfaction of English students, as gauged by the National Student Survey (NSS) has been slightly over 80 per cent over the period 2006–2010 (Higher Education Funding Council for England 2011). The CEQ shows that Australian students' satisfaction with teaching has increased over the past decade but is only 50 per cent, compared with English students' satisfaction of around 80 per cent as measured by the NSS. Students' satisfaction with their development of generic skills during their course also differs, being around 65 per cent for Australian students and more than 75 per cent for English students.

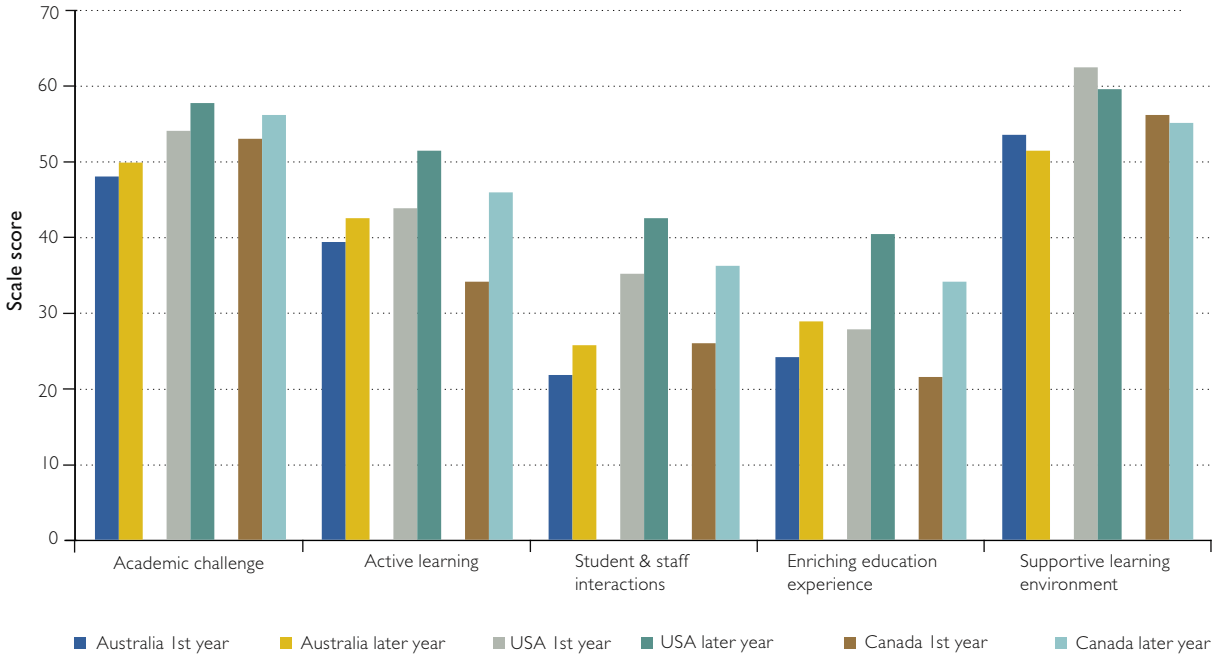
The nature of a student's experience in the first year of university influences the likelihood of their remaining in higher education and completing a degree. Successive First Year Experience surveys in Australia suggest that first-year students' overall satisfaction with their experience and with the quality of teaching has increased since the 1990s. However, student satisfaction with some specific aspects of teaching remains at low levels. Only 35 per cent of first-year students reported that teaching staff usually gave helpful feedback on progress and 26 per cent believed that staff members took an interest in their progress. Only slightly more than half of first-year students felt confident that at least one of their teachers knew their name.

While research may inform teaching, it is not taking place in a manner apparent to students—only 31 per cent believed that they were getting a chance to learn about the research being done in their university (James, Krause and Jennings 2010). These findings were reinforced by a 2010 survey conducted by the National Union of Students (NUS), which also reported students as having limited opportunity for feedback and discussion with teaching staff (submission no. 112, pp. 18–22).[9]

8 There are no measures of student satisfaction or engagement, or of learning gains over the course of a degree program, that are universally accepted and endorsed. However, the Panel is aware of work being undertaken in the context of Performance Funding for teaching and learning to develop new quality and engagement indicators. The Panel also notes that the OECD's Assessing Higher Education Learning Outcomes program is in the early stages of developing internationally comparable assessments of generic skills.

9 The online survey conducted by the NUS covered students' views on topics such as class sizes, the quality of lecture theatres and tutorial rooms, the availability of teaching staff and modern equipment in laboratories, the extent to which teaching staff are available to provide feedback to students and the delivery of lectures via video links.

Figure 2.5: Engagement scale scores for first and later year students, Australia, United States and Canada, 2010



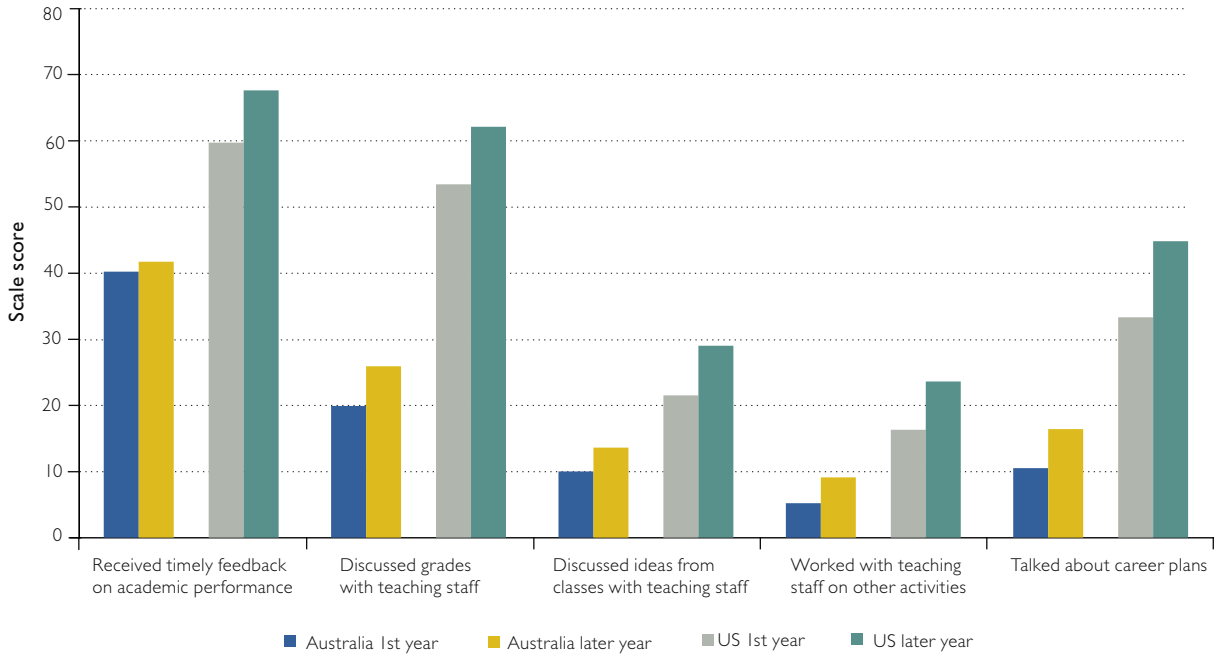
Note: Australian data is from the Australasian Survey of Student Engagement; data for the United States and Canada is from the National Student Survey.

Source: Presentation by H Coates to Higher Education Base Funding Review Panel 19 November 2010. Reproduced with permission.

Since it commenced in 2007, the Australasian Survey of Student Engagement has painted a consistent picture of lower levels of engagement with learning by Australian students relative to their peers in selected North American universities. The lower levels of engagement are most apparent in student–staff interactions (Figures 2.5 and 2.6) but are present across the board. The differences between Australia and Canada are not as marked.

While it is useful to have a student engagement survey in Australia that is also administered in universities overseas, the findings have some limitations, given the differences between the nature of the higher education systems and, particularly in the United States, the diversity between higher education institutions. Nonetheless, the comparatively low level of student engagement in Australian universities should be taken seriously and monitored over time. As the quality of student–staff interactions is one of the most important factors in student motivation and involvement in higher education, the influence of institutional characteristics should not be an excuse to dismiss the finding that students in Australian universities are less engaged than their counterparts overseas.

Figure 2.6: Student and staff interactions, Australia and United States, 2010



Note: Australian data is from the Australasian Survey of Student Engagement; data for the United States is from the National Student Survey.

Source: Australian Council for Educational Research 2010. Reproduced with permission.

There has been a suggestion that the international reputation of Australian higher education could be diminished by high student–staff ratios and its impact on the quality of the student experience. The extent to which this might be impacting on international students' choice of study destination and the quality of their educational experience in Australia remains unknown, but it may be a factor in a competitive international market.

A survey of the satisfaction of international students with their experience in Australian universities suggests that the quality of the student experience in Australian universities could be improved. Students surveyed through the International Student Barometer had high levels of satisfaction with elements of learning and support (84 per cent satisfaction overall). However, while the differences were not statistically significant, Australia rated slightly worse or no better than the global averages in all 18 elements surveyed. The Barometer study also reported that international student graduates of Australian universities are a little less likely to strongly recommend their institution of study to potential applicants than graduates of a comparative international cohort (Varghese and Brett 2011).

2.4.3 Casualisation of staff

The increasing level of casualisation of teaching staff in Australian universities is widely believed to be having an adverse impact on educational quality. Coates and Goedegebuure (2010) estimated that sessional teachers comprise around 40 per cent of the academic workforce, in headcount terms, and carry around 50 per cent of the teaching load across the sector. More recent data using superannuation records provides a 2010 headcount of 67,000 (May 2011), or around 53 per cent of the academic workforce. Given that sessional teachers can range from PhD students to professional and industry experts, it is not surprising that studies give somewhat mixed results on student satisfaction with casual teachers.

Coates (2010) points to the challenges to teaching and learning quality when many teachers have only contingent association with students and their institution, without access to the facilities, professional interaction and development available to other staff members. On the other hand, the quality of the student experience may improve if universities place a higher value on teaching as an activity, and encourage and reward good teaching performance. In the United Kingdom, the Higher Education Academy is promoting professional teaching training for university teaching staff based on evidence of its effectiveness in improving teaching quality (Mahoney 2011, Gibbs 2010).

2.5 Completion rates in Australian universities

An important indicator of the efficiency and productivity of expenditure on university teaching and learning is the percentage of students who complete their courses. Student retention, progression and graduation rates are key indicators of the efficiency and effectiveness of the higher education system. This issue is important in terms of public policy and expenditure. For example, the United States compares the costs of graduation between institutions as a measure of efficiency in producing graduates.

There is also an important individual dimension to completion statistics because each failure to reach graduation may be associated with shattered aspirations and a substantial student debt. It is difficult to determine how Australian university student retention and attrition rates compare with those in other countries, but fortunately in Australia the data, which will be discussed in later chapters, is becoming more robust.

Chapters 4 and 6 contain detailed discussions of completion and retention rates in Australian universities, including retention rates for students from low socioeconomic status backgrounds. The data shows that the performance of Australian universities is strong and internationally competitive. The Department of Education, Employment and Workplace Relations (DEEWR) has an improved data collection based on Commonwealth Higher Education Student Support Numbers that allows it to track student movement between universities and to identify students who drop out. This data collection is providing a better understanding of completion rates in Australia. Using this data set, first-year retention rates are shown to be around 90 per cent across all institutions.

2.6 Employer satisfaction with graduate skills

The extent to which a university education equips graduates with the knowledge and skills required by employers has been measured in a number of different ways. One approach is to ask employers directly whether graduates are meeting their requirements. The Panel compared similar published studies of chief executive officers' ratings of graduate quality conducted in Australia and the United Kingdom in the past two years (Australian Industry Group and Deloitte 2009, Confederation of British Industry 2011). Australian and UK employers have similar levels of satisfaction with graduates' basic skills but Australian employers' dissatisfaction with graduates' problem solving and teamwork skills was significantly higher than that of UK employers. However, a higher proportion of UK employers were less satisfied with the basic literacy skills of graduates than Australian employers (Table 2.6).

Table 2.6: Employers' satisfaction with graduate skills

Employer satisfaction	Australia		United Kingdom	
	Very satisfied (%)	Not satisfied (%)	Very satisfied (%)	Not satisfied (%)
Basic IT skills	23	7	33	5
Basic numeracy skills	18	7	20	9
Basic literacy skills	15	9	18	17
Problem solving	10	27	11	19
Teamworking	10	39	9	20

Source: Australian Industry Group & Deloitte 2009; Confederation of British Industry 2011.

These differences may be explained by higher expectations and standards among Australian employers or a difference in the quality of graduates. Nevertheless, they suggest that on the whole Australian universities are not performing as well as their UK counterparts in delivering graduates with the capabilities expected by their employers. Employer surveys emphasise contemporary employer expectations that universities will produce work-ready graduates with well-developed generic capacities going beyond traditional disciplinary boundaries of skills and knowledge. This presents a challenge to universities to design and deliver curricula to meet these expectations, perhaps through expanding opportunities for work-integrated learning (WIL).

2.7 Summary and recommendations

The Panel was asked to identify international benchmarks for course quality and student engagement. The Panel was also asked to identify the level of base funding required for Australian universities to deliver competitive undergraduate and postgraduate coursework education.

It is difficult to establish credible international benchmarks between the Australian higher education system and higher education systems in other countries because of differences between the funding systems and the diversity in many higher education systems. Consequently, international benchmarks are limited in scope and relevance.

A further limitation of international comparisons is the fact that income and expenditure related to research (rather than teaching activities) is associated with a university being ranked highly on international ranking systems. Research will remain central to the mission of Australian universities and the Panel believes they should continue to have the autonomy to allocate base funding according to their strategic priorities. Nevertheless, the limitation of international rankings should be acknowledged when looking to them for comparisons of teaching quality and learning outcomes.

Therefore, it is important that while the quantum of base funding must be adequate to enable higher education institutions to remain internationally competitive using the current range of indicators and measures, it is necessary to continue to improve the validity of international measures of institutional funding and quality. The Panel recognises that higher education is an international enterprise and our institutions must remain internationally competitive.

Analysis suggests that base funding per student in Australian universities was just above the OECD average but perhaps some 20 per cent below the level of the top band of OECD nations. For

example, funding levels for teaching and learning are broadly comparable with those for England and Denmark, somewhat greater than New Zealand and below the average for Canada and all US public higher education institutions.

However, funding cannot be looked at in isolation and the Panel has attempted to establish whether the current funding levels have affected the quality of Australian higher education.

International comparisons suggest that, on average, the quality of the student experience in Australian universities is slightly below the highest international standards. One area of weakness appears to be the quality of staff–student interactions, including measures such as feedback, out-of-class interactions and opportunities for small group interaction.

Australia compares unfavourably with England on measures of student satisfaction with teaching and with the United States and Canada on measures of student engagement. It also compares poorly in terms of student–staff ratios.

Student–staff ratios are widely used as a proxy measure of the quality of teaching. Benchmark comparisons are important to governments and institutions and will remain a matter of public interest. Given their importance, the Panel believes that student–staff ratios, in combination with other performance measures and quality assurance processes, can serve as a benchmark of quality teaching in Australian universities. Student–staff ratios are an explicit component of Gibbs' four key indicators of course quality, with two of the others—the level of student engagement and the quantity and quality of feedback to students—potentially impacted by student–staff ratios. The Panel accepts that improving student–staff ratios requires an increase in per student funding levels.

The need for more investment

The Panel concluded that the Australian higher education system is of a generally high quality by international standards, but that as a nation we should aspire to have the best system that we can afford. A range of indicators relating to student–staff ratios, student satisfaction, student engagement and employer perceptions highlight areas where improvements are possible and desirable.

However, we need to be aware that if the purpose of increasing funding was only to increase Australia's international rankings, then the extra investment should be made to research funding. This would not necessarily improve teaching quality. If the objective is to increase our standing in OECD comparisons of funding per student than an increase in base funding is the appropriate mechanism.

Therefore, while an increased level of investment per student will be required to improve the quality of higher education teaching, a range of additional measures are necessary to ensure the extra funding makes material improvements in the quality of student learning outcomes and maximises the sector's contribution to national productivity and economic growth.

A starting point for the Panel was to adjust base funding along the lines recommended in this report such that there is an increase in the average real level of base funding per student across the sector.

Recommendation 2: The need for more investment

The average level of base funding per place should be increased to improve the quality of higher education teaching and to maximise the sector's potential to contribute to national productivity and economic growth.

Improving international competitiveness

Benchmark comparisons are important to both governments and institutions and will remain a matter of public interest. The analysis undertaken for the Panel demonstrates the shortcomings of currently available data sources for international comparisons. These shortcomings could be addressed by establishing regular, ongoing benchmarking arrangements based on a suite of relevant and available indicators, at a more detailed level with a number of selected comparable systems and universities.

The Panel considers it important for the Government to continue to monitor Australia's performance against international indicators and remain engaged in trying to improve them.

Recommendation 3: Improving international competitiveness

The Australian Government should produce a triennial 'State of the Higher Education System' report which monitors Australian teaching quality and resourcing based on a suite of relevant and available indicators, relative to comparable international systems or institutions with which Australia should establish a benchmarking relationship.

Chapter 3: Meeting reasonable costs

The Panel was asked to examine the cost relativities between different disciplines and to compare them with the relativities between the funding clusters in the current base funding model. In doing so the Panel was asked to offer options for achieving a more rational and consistent basis for funding across discipline clusters, while ensuring there were incentives for universities to focus on investing and delivering high-quality teaching and maintaining strong academic standards. The first two chapters of this report discussed the purposes for which base funding is provided and the need and opportunity for improvement. This chapter discusses changes that have occurred since the Relative Funding Model (RFM) was introduced two decades ago and the costs associated with delivering higher education teaching and learning to a high standard today.

A key concern for the Panel was to understand the extent to which current funding levels match the direct and indirect costs incurred by universities in undertaking core teaching and learning activities as well as scholarship and base research capability. This is particularly important in the context of a student demand driven system where funding gaps could distort incentives and enrolment patterns.

The Panel therefore commissioned Deloitte Access Economics (Deloitte Access Economics 2011a) to assess the costs of teaching, learning, scholarship and the total of 'unfunded' research prior to assessing the quantum of base research capability. The study included eight universities representing the diversity of the sector in factors including size, location and discipline mix. The available cost and funding data was then analysed to determine the extent to which the current funding levels adequately reflect the costs of providing for teaching and scholarship and research. This question is examined for total base funding, by discipline and for postgraduate and undergraduate courses. The relationship of 'unfunded' research to base research capability is also further discussed.

This chapter examines the best available data on how base funding is distributed and the impact of the cluster funding model. The issues are explored from several perspectives, including possible other methods for determining relative funding levels. It identifies contemporary cost drivers drawing on analyses of the data presented by the commissioned research as well as evidence and material derived from other sources. The discussion then turns to how the base funding model can be modified to be more effective in a student demand driven system.

The recommendations suggest changes to the allocation of base funding to reflect, as far as practicable, the real costs of course delivery in the 21st century.

In determining the reasonable costs of higher education delivery, the Australian Government needs to make a judgment about the level of quality in our higher education system that government and students are prepared to support. Although the amount of funding aims to reflect, as far as possible, the costs of providing a particular course of study, the cost of delivering any course is influenced by decisions about its quality. The relationship between cost and quality is fundamental to decisions about the level of funding provided to universities through the base funding model.

While the Panel has discussed the case for improvement and the need for additional funding, in this chapter the focus is on average, reasonable costs and the need to have funding better match costs in the funding model.

3.1 Emerging cost pressures

The majority of submissions to the Panel argued that current base funding did not meet the cost of universities' core functions. A number of submissions suggested that this was more than just a funding shortfall, stating that the current base funding relativities were out of date and no longer reflected the true structure of university costs.

For example, the University of Sydney argued that:

> The current cluster funding framework (based as it is on the Relative Funding Model – RFM – established over twenty years ago) has passed its use by date. We do not believe that further tweaking or short term fixes to the current arrangements will be sufficient to underpin in the long-term a high quality Australian higher education system (submission no. 102, p. 3).

Identifying the cost of university teaching, scholarship and base research activities is complex. Course delivery varies and this is reflected in the differences in expenditure across universities and disciplines. There is some tendency to match expenditure on a course of study with the total revenue available, but universities vary enormously in what they spend on any particular course.

Universities now operate in a different social and economic environment and face a range of costs not present when the RFM was developed. Most significantly, teaching is delivered in different ways, economic and labour market circumstances have changed, student expectations have evolved and technology has advanced.

The university sector has responded to changing circumstances by becoming more efficient and productive. The system has been responsive to government initiatives and has diversified its income sources. However, as noted previously, the Panel has observed concern in the sector about the volatility of diversified income streams and the impact of rising costs on universities' capacity to remain competitive. During consultations and through submissions the Panel received advice on increases in costs that have occurred over the last 20 years that help to explain the pressure being felt by the sector.

The teaching environment has changed to accommodate small group and collaborative learning, increased e-learning and wireless technologies, and extended access times. These changes are widespread with areas of every campus demonstrating elements of contemporary learning space design that are part of a change in the pattern of student use and expectation. The decades on each side of the millennium saw major changes in the way teaching and learning are experienced, and there is no reason to believe that change in the future will be at a lesser rate.

In addition, universities noted the rising costs associated with teaching a more diverse cohort of students and with the increasing need to focus on quality outcomes and research performance. These issues are discussed in more detail later in the report.

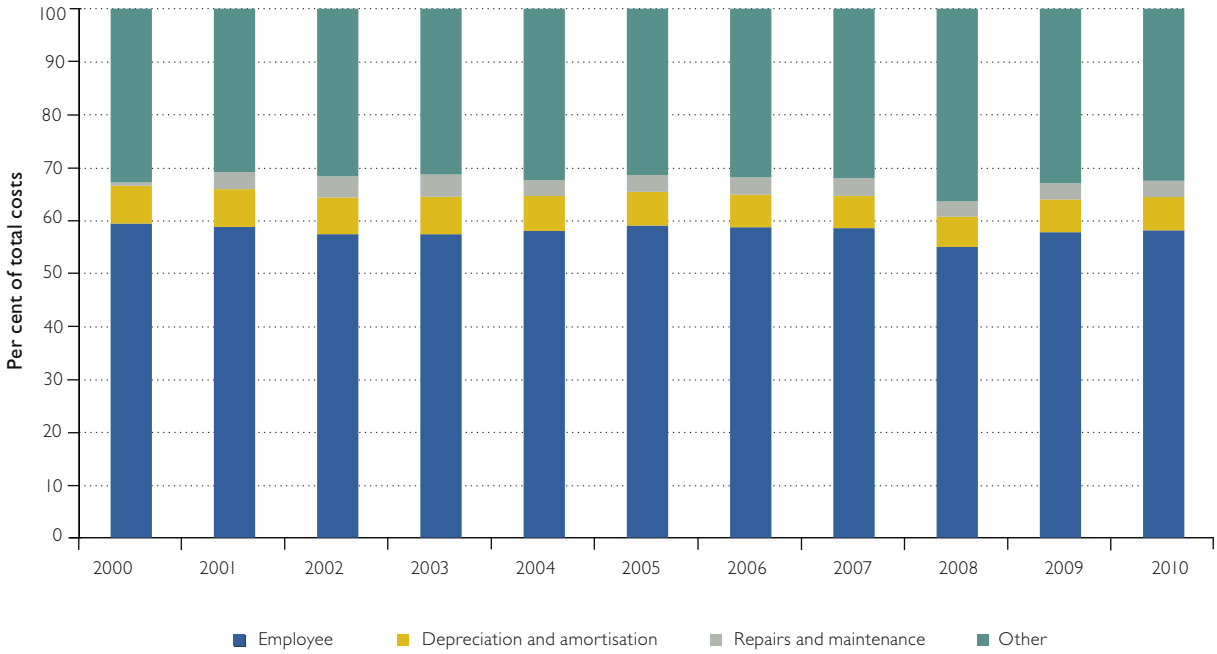
University representatives also frequently mentioned rising compliance costs and while these were partly general business costs they were also sector specific, reflecting increased accountability in return for substantial government funds. The sector urged that any new government initiatives be implemented in a way that avoided unnecessary compliance costs.

The Panel identified several factors which emerged as having had a particular impact on costs over the last two decades and which appear likely to persist in the future. The areas explored in this chapter are staff costs, the cost of work-integrated learning (WIL) and other modes of teaching and infrastructure (including information and communication technology) costs.

3.1.1 Employee costs

When university costs are considered in total, the largest proportion of costs is salaries and on-costs for academic and non-academic staff. In 2010 staff costs accounted for approximately 58 per cent of all university costs (Figure 3.1).

Figure 3.1: Breakdown of Australian university costs, 2000–2010



Source: DEEWR (various years), selected Higher Education Statistics Collection.

Employee costs as a proportion of total costs have not changed significantly over the last decade (Figure 3.1). If anything, the proportion was higher in 2000–01. This is despite the fact that academic and non-academic staff costs have increased by approximately 30 per cent since 2000 (DEEWR, Panel Background Paper, p. 54).

Staff costs themselves have been subject to countervailing forces over the last 20 years. On the one hand, technological changes, a shift of administrative tasks to non-academic employees, and the substitution of casual for full-time academic staff have helped to keep employee costs down (Williams 2009). On the other hand, salary increases have resulted in upward pressures. Both academic and non-academic salaries have increased at a higher rate than indexation in recent years.

A study by PricewaterhouseCoopers (2008) of academic enterprise agreements found that salary growth for a selection of 12 universities from 2006 to 2008 averaged 4.8 per cent per annum. Over the same period, average weekly earnings grew by 4.1 per cent (p. 30).

Data from the Australian Bureau of Statistics Wage Price Index shows that for the education and training sector as a whole (which includes staff in schools and vocational education and training), average annual wages increased by 4.2 per cent between 2005 and 2010 (Australian Bureau of Statistics 2011). In comparison, the increase across all industries was 3.8 per cent (DEEWR analysis).

In its submission to the Panel, Griffith University argued that salary costs have increased significantly over time. For example, it stated that, between 1996 and 2011, average staff salary costs grew by 77.3 per cent. This was 50 per cent higher than the Consumer Price Index (CPI) (53.7 per cent)

and more than twice the safety net adjustment (30.2 per cent) over the same period (submission no. 49, p. 3).

Australian universities must compete for staff against other Australian and international universities, and against the public and private sectors. PricewaterhouseCoopers pointed to sectoral feedback that despite strong growth in salaries in recent years in some professional disciplines, most universities had difficulty attracting and retaining staff. This was largely because salaries were uncompetitive compared with alternative sources of employment. The issue has become more pertinent as a long period of economic growth combined with the mining boom has increased the opportunity cost for those remaining in academia (2008, p. 31).

In the future, as the system expands there will be more academic and non-academic staff and extra competition for staff, putting added pressure on salaries. While the increase in staff numbers might not lift average costs, as there could be some savings due to economies of scale, PricewaterhouseCoopers (2008) has argued the pressure on salaries is expected to increase at a faster rate than average weekly earnings, pushing up employee costs (p. 31). Williams (2009) suggests that some university disciplines will have to lift average salaries in the future to attract staff. In particular, academics in disciplines such as accounting, finance and mining engineering are in high demand due to the current tight labour market and high salaries in the private sector. Increased demand for suitably qualified health academics is also expected to continue in the future.

Health disciplines

Some disciplines have experienced higher cost increases than others. For example, research provided to the Panel by James Cook University (JCU) showed that between 2004 and 2010 the CPI for the health sector grew at a significantly faster rate than both the general CPI and the formerly used Higher Education Index. According to the analysis, 'funding allocated to universities to deliver health related courses may not have matched the increase in costs that these universities have been exposed to' (submission no. 152, Appendix B, p. 63).

The JCU study also found that there was evidence of a significant disparity in wages of clinical academic staff and clinicians operating in the public health sector. There is a large differential between the salary of a senior clinician or clinical specialist and a similarly qualified person working as an academic (submission no. 152, Appendix B, p. 63).

Ageing of the academic workforce

The ageing of the academic workforce has also been identified as a particular issue facing universities over the coming decades. Estimates suggest that at least half of the current total Australian academic workforce will retire in the next 15 years (Hugo 2008). The ageing of the academic workforce pushes up the average salary level per staff member. The increasing retirement rate, both in Australia and a number of comparable countries, will increase competition in the global labour market for academic staff and could put further upward pressure on wage levels. So despite the possibility of staff having lower academic salary classifications, as more senior academics retire their replacements will have to be attracted with globally competitive salaries.

Efficiencies

While universities could potentially offset salary increases through further efficiency improvements, more casual staff and higher student–staff ratios, the scope for savings in these areas is limited. As discussed previously, many submissions to the Panel expressed concerns about

high student–staff ratios and the impact this was having on teaching quality. Similarly, there is concern about casualisation of staff. Both were given as examples of declining quality in higher education and inadequate funding to the sector.

Research-intensive universities

According to Jones and Wellman (2009), universities with a research focus have higher per student staff salary costs. The cost for staff time goes up significantly due to reduced teaching loads, since more of each academic's time is spent conducting research. Costs per student increase as the amount of time available for teaching reduces. The time spent on research is not a cost of teaching and learning but it does point to the additional cost of providing teaching in a research environment. Where research is not a strong institutional practice then academic staff can spend most of their time on teaching and scholarship, reducing the total staff cost per place.

Students from low socioeconomic status backgrounds

Increasing student enrolments may also increase employee costs if the extra assistance and support required by low socioeconomic status (SES) and other disadvantaged students result in demand for more staff. DEEWR has estimated that, if the targets for 2020 are met, an additional 50,000 low SES students above 2009 levels will be enrolled in higher education. Indigenous students, people with disability, international students and students from low SES backgrounds can require a range of extra study and other assistance. As the number of low SES students increases, more teaching and support staff may be required.

Cyclical costs

Despite the pressure to increase salary levels, an Access Economics study (2007) argued that managing salaries and employee costs is a familiar aspect of university business and is largely cyclical in nature. Moreover, it is within the ability of each institution to manage its overall wage bill without receiving extra funding. On the other hand, Williams has argued that `the freeing up of remuneration payments raises the question of whether those disciplines that need to pay higher salaries to attract staff should be compensated for this' (Williams 2009, p. 12).

International salary comparisons

The 2009–10 Association of Commonwealth Universities (2010) academic staff salary survey examined academic salary scales and associated benefits in 46 institutions in seven Commonwealth countries: Australia, Canada, Malaysia, New Zealand, Singapore, South Africa and the United Kingdom. Data from each country was converted to US dollars (US) and weighted for Purchasing Power Parity (PPP).

The survey found in 2009–10 that Australia had the highest average salary level of all participating universities at $US 83,670 (converted using PPP). South Africa was second ($US 78,653) followed by Canada ($US 76,594), United Kingdom ($US 76,377) and New Zealand ($US 68,863).

The report found that the gap between salary levels in participating countries was narrowing over time. In 2006–07 Australia was more than 20 per cent higher than Canada and the United Kingdom. In 2009–10 Australia's average salary level was 6.4 per cent, 9.2 per cent and 9.6 per cent higher than South Africa, Canada and the United Kingdom respectively. The report notes that there appears to be a trend over time for convergence of academic salaries internationally and that this may be related to increased competition for staff and national efforts to improve salary levels.

3.1.2 Work-integrated learning

WIL is now a signature theme of a wide range of higher education courses. It involves deliberate and intentional learning in the workplace, supported by the appropriate induction of students and supervisors and is integrated with coursework assessment. The aim of WIL is to provide students with a 'rich, active and contextualised learning experience' (Patrick et al 2008) related to professional experience and achieving specific learning outcomes.

Delivering WIL is resource intensive. Staff have to develop course and unit materials, assist students to find placements, liaise with the host organisation, prepare students for the placement, ensure compliance with occupational health and safety and other legal requirements, ensure supervision is available for the duration of the placement, develop appropriate assessment practices and procedures, and evaluate the WIL experience from both stakeholder and student perspectives (Australian Collaborative Education Network, submission no. 74, p. 2). A significant cost driver appears to be the degree of one-on-one supervision required when students are undertaking WIL in medical, scientific or allied health fields.

Given the time and resource intensity of WIL, the cost of salaries of academic and other support staff exceeds some other teaching methods. In clinical areas, universities also have to compete with the private and public sectors for suitably trained staff and this pushes up salary costs further.

The evidence on the costs of WIL are mixed, with the Deloitte Access Economics costing study indicating that average WIL costs in 2010 were significantly lower than suggested in submissions. The average cost of WIL in the study was less than $400 per equivalent full-time student load (EFTSL).[10] It was marginally higher for teacher practicums at $500, for health disciplines it was $900 and for agriculture, environmental and related studies it was $1,250 (2011, p. 27). However, the information on WIL in the costing study needs to be treated with caution, as it was collected only at the field of education level.

The data from submissions provided to the Panel was more specific (Table 3.1).

Many submissions to the Panel highlighted the increasing cost of WIL and the difficulty in meeting costs given current funding arrangements. The Australian Collaborative Education Network argued that the provision of:

> ...quality WIL programs involve a holistic range of activities that go beyond standard teaching. However, the current funding arrangements do not allow adequate resourcing of these activities. Inadequate funding presents a range of particular challenges that impact on the breadth and quality of WIL programs and directly affects outcomes for all stakeholders. These current challenges will increase and become more complex with further expansion of WIL into more courses, into new disciplines and with increased participation by students from educationally disadvantaged groups and international students (submission no. 74, p. 6).

Many universities find the costs of maintaining a WIL program in association with industry partners prohibitive. This can result in students having to make their own arrangements in finding industry placements, and receiving little or no academic support or assessment for their professional experience. The Panel was informed during consultations that it is becoming more common for universities to be charged by the host organisation, particularly in disciplines such as medicine, nursing and allied health.

10 In the costing study the costs of WIL were collected separately and cannot be directly compared with the total cost per EFTSL.

The funding of WIL, particularly clinical training and education practicums, and costs related to student access and equity are discussed further in Chapters 4 and 6 respectively.

Table 3.1: Summary evidence of work-integrated learning costs from submissions to Higher Education Base Funding Review Panel

Submission	Discipline	Cost	Funding	Difference
Australian Collaborative Education Network, reporting on Victoria University	All disciplines	Average 15–21% more than standard teaching costs		
Australasian Council of Dental Schools	Dentistry	Average course cost was $36,538. Clinical made up between 42 and 86% of total course costs	Cluster funding of $28,094	Average $7,000 difference
Edith Cowan University	Education	Increased by 45% per EFTSL over 5 years	Cluster funding increased by 19% over 5 years	26%
University of Wollongong	Education	$8,000 per EFTSL over 3 years	Practicum loading ($1,087 per year in 2009)	Approx $5,000
Griffith University	Nursing	Total costs $8.68 million (2010). Cost per EFTSL increased from $2,980 in 2006 to $6,892 in 2010	$2.27 million practicum funding	$6.4 million
Council of Deans of Nursing and Midwifery	Nursing	$6,672 for 800 hours over 3 years	$1,100 per EFTSL; $3,300 over 3 years	$3,372 over 3 years
Council of Veterinary Deans	Veterinary science	Total course costs approx. $35,000 per EFTSL. Clinical estimated at $19,000 per EFTSL	$28,000	$7,000

3.1.3 Infrastructure

Capital infrastructure is fundamental to supporting high-quality teaching and learning. The Panel considers the cost of emerging and future infrastructure to be one of the major pressures facing universities.

Contemporary teaching and learning space requirements

The Panel heard compelling evidence to suggest that universities faced considerable costs in refashioning infrastructure to create new learning environments to suit the needs of students in the 21st century. The supporting evidence included particular challenges around the costs of expanding laboratory and studio infrastructure, where facilities and equipment are becoming more expensive.

The Council of Deans of Science argued that disciplines such as science are high-cost fields of study; buildings, fittings and equipment are expensive and the curriculum requires high utilisation of expensive laboratories and materials (submission no. 58, p. 4). While the unit cost of some computer and other information and communication technology (ICT) equipment may theoretically fall over time due to advances in technology and higher production levels, depreciation and replacement costs are pushing total costs higher. The Council of Deans of Science argued that equipment and instrument technologies in science have evolved at such a rate that the period for renewal is shortening. For example, the life cycle of computers for many universities is around 3 years; for expensive laboratory equipment such as centrifuges, microscopes, lasers and mass spectrometers,

about 10 years; and for much other teaching equipment, about 5 years. This puts the cost of depreciation for science teaching equipment at up to 20 per cent for some items and at least 10 per cent for many others (submission no. 58, p. 5).

The nature of higher education today is very different from 20 years ago in terms of its delivery and student expectations. In addition to the costs incurred through the expanded use of laboratory and studio teaching methods, the increased use of ICT requires universities to make substantial investment in upgrading facilities and services. Additionally, the need for contemporary learning spaces has required universities to refit and redesign existing buildings, but a significant proportion of buildings are not optimally designed or configured to meet contemporary teaching needs.

Student expectations have changed considerably over the last 20 years. Student submissions to the Panel made comment on the quality of facilities, lack of acceptable study areas, overcrowding, inadequate air conditioning and the poor condition of some of the learning areas. In the consultations it was suggested that following significant investment in high school facilities in the last five years, university infrastructure appeared especially run down in comparison with many schools.

Student expectations have also contributed to the development of open, flexible and technologically supportive learning spaces. These contemporary learning spaces are designed to provide improved environments for students in which to learn, collaborate with other students, socialise and engage with online environments. In its submission, Universities Australia argued that this trend has an international dimension, with an increasing number of students from overseas expecting high-quality buildings and learning environments (submission no. 130, p. 16).

In its submission to the Panel, the Council of Australian University Librarians provided a comprehensive overview of how contemporary learning spaces are changing the nature of university libraries with associated cost implications:

> Universities have invested heavily in upgrading libraries to provide engaging learning spaces equipped with IT facilities, and flexible furniture that can be adapted for collaborative learning experience and comfortable, informal information learning spaces. Refurbishing and repurposing library spaces to include more group study rooms, improved training facilities, social learning spaces and renewed collection areas requires substantial funding. From a recent survey of members [concerning] refurbishment and new library buildings constructed over the past five years, 26 universities reported Library projects that cost approximately $448 million. Approximately $313 million (70 per cent) was directly funded by universities with nearly $135 million (30 per cent) funded from specific grants, donations, and bequests. The average cost of the projects undertaken was in the order of $6.1 million. The median for library seating over the period 2005 to 2009 demonstrates the demand for library infrastructure with an increase from 1,280 to 1,440 seats and this trend is expected to continue (submission no. 31, p. 4).

The Panel noted that extended operating hours within libraries and learning areas, the ubiquity of wireless internet access, and the trend towards collaborative group learning spaces and hubs were now considered essential infrastructure for teaching and learning on higher education campuses. A feature of contemporary learning spaces is that they are flexible and can adapt to various needs, from small to large groups, multiple teaching and learning styles and the use of different technologies. These design features facilitate durability and longevity, and over time may reduce costs, but their creation would involve extensive upfront costs. The fact that the majority of funding for contemporary learning spaces in libraries came from direct university sources provides strong evidence that universities have identified such developments as being of significant strategic importance.

Renewal and maintenance requirements

Increasing student enrolment numbers to meet the Government's attainment target are expected to place increasing pressure on university infrastructure. While there may be some capacity in the sector to absorb the increase, if the Government's targets are to be met there will have to be both greater efficiency in utilisation and a significant investment in infrastructure over the next 10 to 15 years.

The Tertiary Education Facilities Management Association (TEFMA) has suggested that to meet the Government's participation targets much of the existing campus building infrastructure needs to be renewed or replaced:

> ...many buildings were constructed prior to 1970. They reflect the design standards of an earlier period in which students were taught didactically en masse, complemented by small tutorials, not through the current practice of collaboration, investigation and student-centred learning. In their current configuration it is just not possible to deliver academic enterprise in a 21st Century manner. These buildings and associated campus services (such as water, sewerage and electrical infrastructure) need a full life 'renewal', which would include significant redesign of internal spaces, replacement of horizontal infrastructure (such as elevators and escalators), improvements in information technology infrastructure and the upgrading of major mechanical and electrical systems (TEFMA 2011).

Many of the submissions drew attention to the sector's maintenance backlog, the rising cost of capital particularly in the science, technology and engineering faculties, and the need to match student growth with new building stock. TEFMA has estimated that the current backlog maintenance liability in Australian universities is between $2.08 billion and $3.19 billion. The estimate allows for the fact that many university buildings were constructed prior to the 1970s and some are heritage listed. TEFMA estimates the cost of modernising campus buildings and associated infrastructure (either through renewal or replacement) is approximately $11 billion (TEFMA 2011).

There has clearly been a trend towards better floor area usage in other countries and better utilisation of assets could limit, but perhaps not entirely remove, the need to enlarge the stock of university buildings. A significant proportion of future capital funding needs to be spent on redevelopment and refurbishment of existing buildings, not just the creation of new space.

The issue of funding for contemporary learning spaces and infrastructure to support the growth in student places is discussed further in Chapter 4.

3.1.4 Information and communication technology

ICT is now a key component in the balance sheets of Australian universities. This is likely to continue into the future as more sophisticated technologies reach further into university operations. As Griffith University argued in its submission, 'information technology in the form of both hard and software is now a major budget item. These costs have increased significantly over the last 15 years. ICT is an essential administrative, research and teaching tool. At the same time the importance and cost of physical library resources has not diminished' (Griffith University, submission no. 49, p. 6).

While the increased use of ICT could arguably lead to a reduction in some costs (e.g. face-to-face teaching time), there seems to be a consensus in the sector that e-learning and other activities supplement rather than replace existing teaching and learning practices. For example, both Macquarie University and Monash University in their submissions to the Panel argued that developments in e-learning have resulted in the requirement to deliver both face-to-face teaching and innovative online material.

Universities, like society in general, are in the midst of an information age involving the increased production, transmission and use of information (Harvard University 2011). This development has helped to change the structure of teaching and learning costs over the last 20 years as Australian universities are using a greater range of sophisticated ICT to support teaching and learning outcomes.

The University of Melbourne pointed out that Australian universities must now provide facilities and services that did not exist when the current funding system was designed. For example, learning management systems that provide websites for each subject and campus wi-fi are now expected requirements of 21st century education. These technologies improve support for students, but provide few if any cost savings for universities. Disciplines need to keep up with technological changes in the professions, forcing rapid depreciation of IT investment. The pace of innovation means that IT costs will continue to increase (The University of Melbourne, submission no. 72, p. 8).

In its submission to the Panel, Charles Sturt University (CSU) argued that the cost of information technologies and infrastructure has:

> ...had the effect of intensifying direct teaching costs for all categories of student. CSU has invested approximately $23 million over the past three years into its IT infrastructure plan, over half of which is committed to learning platform and student experience projects. The University needs to be able to continue this commitment to ensure currency and ability to meet changing student expectations (submission no. 50, p. 3).

There is evidence that some information technologies are relatively inexpensive. For example, CSU recently provided blanket wireless coverage for its 10 campuses (11 sites) for a total cost of $2 million. Half the amount was funded by the university and half through the Government's Better University Renewal Fund (Charles Sturt University, Division of Information Technology).

3.2 The cost of base funding activities

A key concern for the Panel was to understand the extent to which current funding levels match the direct and indirect costs incurred by universities in undertaking core teaching and learning activities as well as scholarship and base research capability. This is particularly important in the context of a student demand driven system where funding gaps could distort incentives and enrolment patterns.

3.2.1 A study of university costs

The costing study by Deloitte Access Economics was commissioned to analyse the costs of delivering courses and the appropriateness of the current funding differentials between the clusters.

The study collected data on expenditure from a sample of eight universities. Originally the research aimed to obtain estimates of costs based on disciplines using the four-digit Australian Standard Classification of Education codes. However, most of the sample universities were unable to provide data at this level of disaggregation. Subsequently the information was gathered at the field of education (FOE) two-digit level (Table 3.2).

The FOE classifications do not align with the clusters used in the current base funding model except where an FOE comprises relatively homogeneous disciplines, such as FOE 7 (education), for instance, which is the same as the education cluster (Table 3.2). This placed some limitations on the study's capacity to assess the extent to which the current funding cluster amounts are appropriate in all fields of study.

The study also sought to identify the costs of WIL and of 'unfunded' research activity (see Chapter 1 discussion of 'unfunded' research). However, over the course of the Review, the Panel came to the conclusion that it is base research capability that appears to be the key driver in understanding whether base funding is sufficient to cover the costs of the activities it is intended to support in each discipline or field of education.

Table 3.2: Concordance of two-digit field of education and base funding clusters, 2010

Two-digit FOE	Funding cluster (funding per EFTSL)
FOE 1: Natural and physical sciences	**Cluster 3a:** Mathematics or statistics ($16,237) **Cluster 7a:** Science ($22,723) **Cluster 8a:** Dentistry, medicine, veterinary science ($28,094)
FOE 2: Information technology	**Cluster 3b:** Computing ($16,237)
FOE 3: Engineering and related technology	**Cluster 7b:** Engineering or surveying ($22,723)
FOE 4: Architecture and building	**Cluster 3b:** Built environment ($16,237)
FOE 5: Agriculture, environmental and related studies	**Cluster 8b:** Agriculture ($26,802)
FOE 6: Health	**Cluster 3b:** Other health ($16,237) **Cluster 5b:** Allied health ($18,229) **Cluster 6:** Nursing ($17,213) **Cluster 8a:** Dentistry, medicine, veterinary science ($28,094)
FOE 7: Education	**Cluster 4:** Education ($14,330)
FOE 8: Management and commerce	**Cluster 1:** Accounting, administration, economics, commerce ($10,624)
FOE 9: Society and culture	**Cluster 1:** Law ($10,624) **Cluster 2:** Humanities ($10,211) **Cluster 3c:** Social studies ($13,980) **Cluster 5a:** Clinical psychology, foreign languages ($15,972)
FOE 10: Creative arts	**Cluster 5a:** Visual and performing arts ($15,972)

Source: Deloitte Access Economics 2011a.

Understanding the cost data

In the commissioned study, the cost data was broken down into two main categories: 'teaching and scholarship' and 'teaching and scholarship and research funded from general revenue' (Deloitte Access Economics 2011a, p.17). Expenditure on 'research funded from general revenue' is the same as 'unfunded' research so it includes research funded from income from international and domestic full fee–paying students, fees and charges, investment income and other sources.[11] As discussed previously, this is a much broader category than the base research capability that the Panel recognised as being supported by base funding. For simplicity, the following section uses 'research' instead of 'research funded from general revenue'.

The illustrative figures (Figures 3.2 to 3.4) present four data points for each FOE: the mean, the median, the maximum and the minimum. The maximum and minimum points are indicated by the top and bottom points of the vertical lines showing the range of costs. The display of both mean and median is particularly useful in understanding the homogeneity of an FOE. A significant difference between the mean and the median indicates that one or two universities have substantially higher or lower costs than the others (a median below the mean indicates the former and vice versa).

The costing study compared costs to funding for 'teaching and scholarship' and 'teaching and scholarship and research' in each FOE expressed as a ratio. A ratio of 1.0 indicates parity between funding and costs. A ratio of less than 1.0 indicates that funding exceeds cost and a ratio above 1.0 indicates that cost exceeds funding.

The funding used for the calculation is the base funding per Commonwealth supported place including the Transitional Loading for mathematics and science places. It does not include the other CGS loadings as these are not all translatable into FOE funding per place amounts. For the same reason specific funding for capital or infrastructure or other purposes is not included. Additional funding is also available for some FOEs from other government departments and state and territory governments. These exclusions will tend to result in an underestimate of the funding in relation to the total expenditure. These limitations are acknowledged but the Panel believes nevertheless that the data was robust and provides a sound basis for making recommendations.

3.2.2 Cost compared with funding for base funding activities

Average costs per place

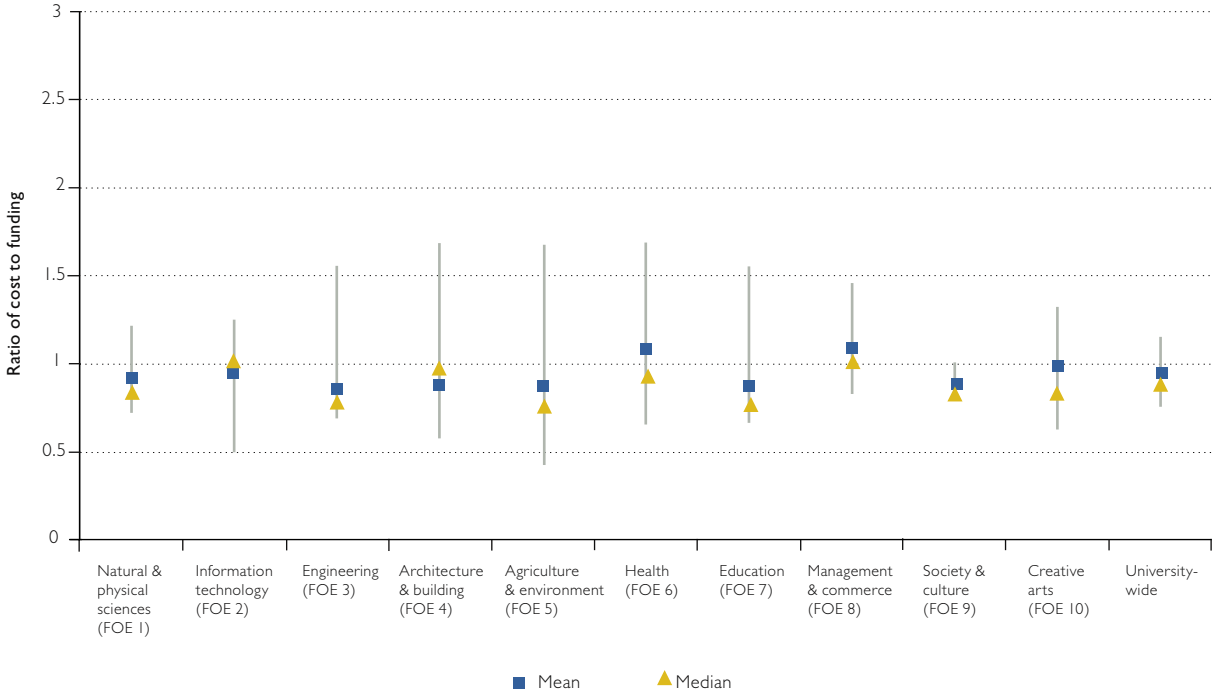
The costing study found that for the sample universities the average or mean cost per place for teaching and scholarship (not including research) in 2010 was $15,000.

Examination of the cost of teaching and scholarship alone suggests that base funding is on average adequate to meet the costs of teaching and scholarship, but not necessarily for each FOE or each institution.

The comparison of this average cost with the base funding received showed that the costs of undergraduate teaching and scholarship across all FOEs at the sample universities was 94 per cent of the base funding ('University-wide' category, Figure 3.2). The Panel has drawn the conclusion that for undergraduate places on average, 6 per cent of base funding is used to support base capability in research.

11 The notion is similar to 'general university funds' as defined by the Australian Bureau of Statistics (2008).

Figure 3.2: Ratio of undergraduate teaching and scholarship costs to funding, by field of education



Note: The maximum and minimum points are indicated by the top and bottom points of the vertical lines showing the range of costs.

Source: Special data request from sample universities, Deloitte Access Economics 2011a.

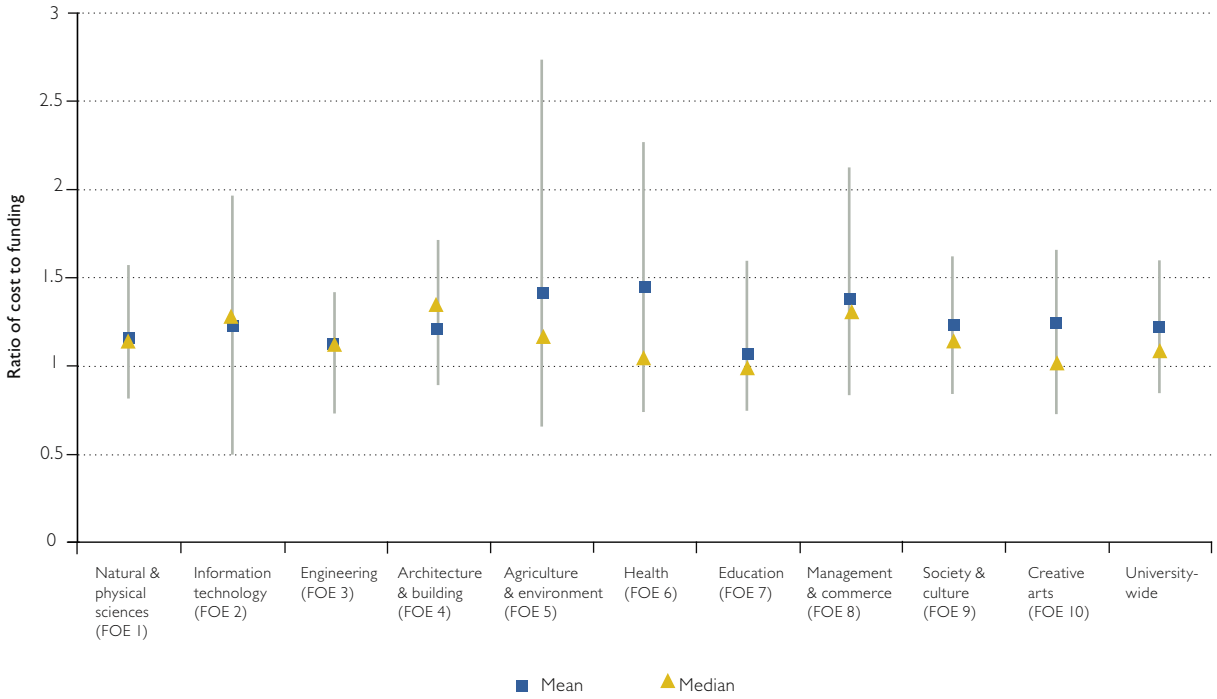
The costing study found that the average cost per place for the sample universities for 'teaching and scholarship and research' was $19,600. This average cost amounts to the equivalent of 122 per cent of the base funding received ('University-wide' category, Figure 3.3). This estimate of overall spending on 'unfunded' research is very close to the estimates provided by the sector to the Panel during consultations.

The Panel concluded that base funding covers, on average, teaching, scholarship and some base research capability. On average, universities spend slightly less on teaching and scholarship than they receive in base funding; but they spend more than the base funding when costs include teaching, scholarship and 'unfunded' research.

This is unsurprising, since not all 'unfunded' research is expected to be supported from base funding. The Government expects that universities will draw on the income received from various sources, including government funding in addition to base funding for research-related expenses.

The Panel agrees with this expectation, and would like to emphasise that the results of the costing study should not be interpreted as indicating that base funding should be extended (and augmented) to cover the whole quantum of 'unfunded' research that universities choose to undertake.

Figure 3.3: Ratio of teaching, scholarship and research costs to funding, by field of education



Note: The maximum and minimum points are indicated by the top and bottom points of the vertical lines showing the range of costs.

Source: Special data request from sample universities, Deloitte Access Economics 2011a.

A regression analysis performed as part of the costing study found that the main drivers of higher costs were low student–staff ratios and a larger proportion of associated higher degree research students. The study concludes that the results are consistent with the idea that universities that have a stronger focus on research as part of their mission tend to have higher teaching and learning costs.

The base funding relativities

The costing study suggested that undergraduate teaching and scholarship costs for FOEs fell into three broad groups (Figure 3.4).

The groupings are:

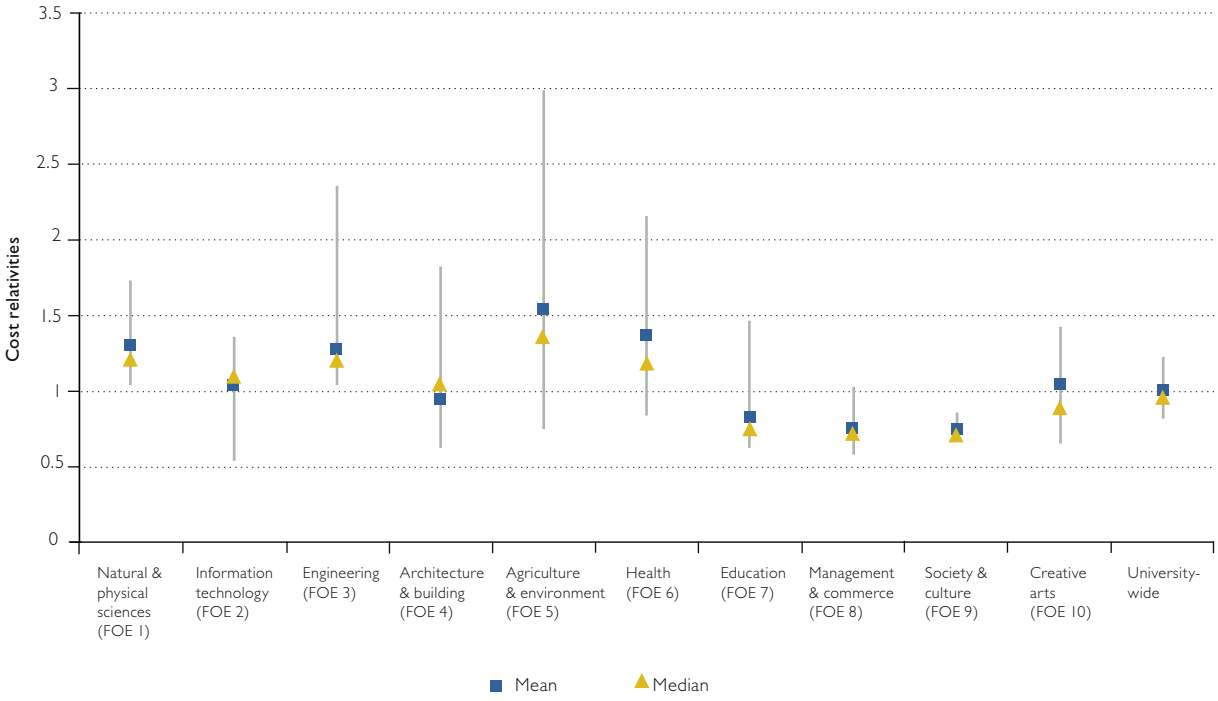
- low-cost (cost relativity < 1), comprising FOEs 7 (education), 8 (management and commerce) and 9 (society and culture)
- average-cost (cost relativity close to 1), comprising FOEs 2 (information technology), 4 (architecture and building) and 10 (creative arts)
- high-cost (cost relativity > 1), comprising FOEs 1 (natural and physical sciences), 3 (engineering), 5 (agriculture and environment) and 6 (health).

The below-average (low-cost) group in the costing study showed similar cost levels for FOEs 7 (education), 8 (management and commerce) and 9 (society and culture). This covers existing CGS funding clusters 1, 2, 4 and one section each of clusters 3 and 5. It matches the usual internal administrative arrangements of faculties and encompasses the faculties/divisions of Law, Business, Arts/Humanities/Social Sciences and Education.

The average cost group reported similar cost levels for FOEs 2 (information technology), 4 (architecture and building) and 10 (creative arts). The common factor here is methods of teaching that involve more individual attention to students. Average cost FOEs include disciplines in existing CGS funding clusters 3 and 5.

In the above-average (high-cost) group, teaching methods and infrastructure requirements in FOEs 1 (natural and physical sciences), 3 (engineering), 5 (agriculture and environment) and 6 (health) were broadly similar.

Figure 3.4: Cost relativities (undergraduate teaching and scholarship costs only), by field of education



Note: The maximum and minimum points are indicated by the top and bottom points of the vertical lines showing the range of costs.

Source: Special data request from sample universities, Deloitte Access Economics 2011a.

FOE 6 (health) covers disciplines drawn from existing CGS funding clusters 3, 5, 6 and 8. It is by far the most heterogeneous of the FOEs, and the average results probably mask significant differences in costs between disciplines. This is indicated by the large range in costs for different universities for this FOE (Figure 3.5).

The highest of the above-average group comprises medicine, dentistry and veterinary science (CGS funding cluster 8), all of which have particular teaching and learning costs. Medicine, dentistry and veterinary science should be grouped and funded at the highest cluster level. The data from the costing study was supplemented by some additional evidence from a KPMG study. The KPMG data examining teaching-related costs for James Cook University supports this conclusion; the Bachelors of Medicine costs are nearly $30,000 per EFTSL, and Bachelors of Veterinary Science $39,000 per EFTSL (submission no. 152, Attachment B, p. 23).[12]

12 The data for James Cook University included research only if directly related to teaching. The compositional model used for the KPMG study implies that the research cost must directly relate to the unit cost.

Cost compared with funding related to disciplines

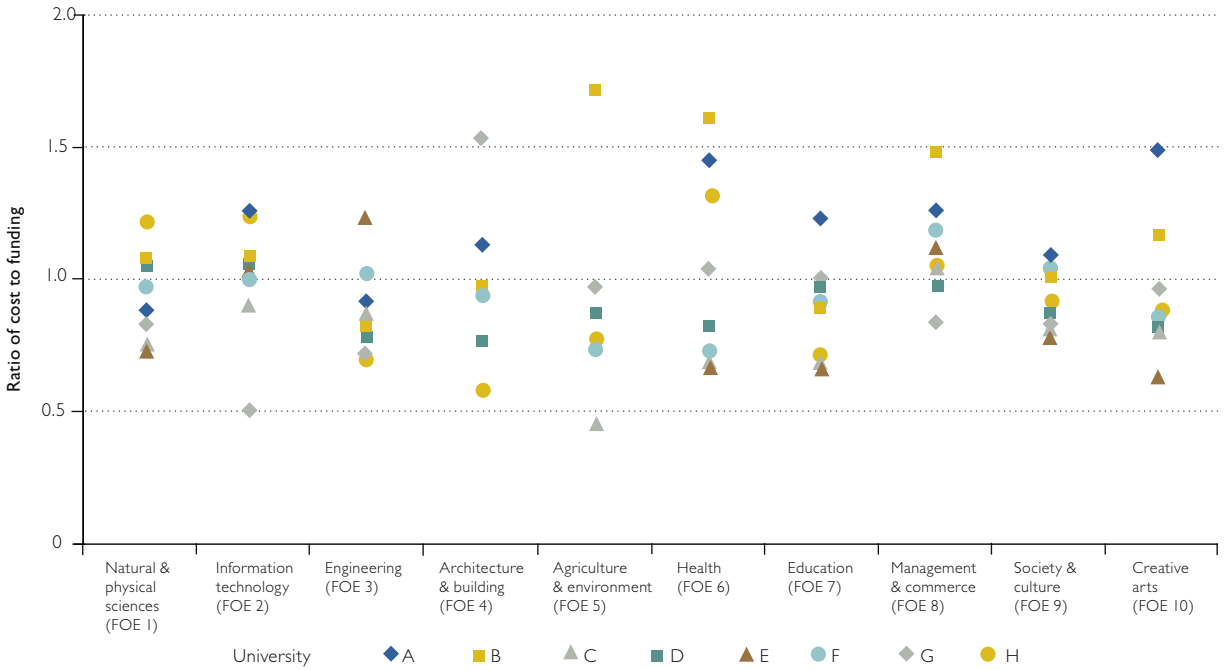
The Panel has argued that in the demand driven system the funding of disciplines should broadly match costs. However, the Review's capacity to investigate this issue has been hindered by the fact that the FOEs used in the costing study do not match base funding clusters. Nevertheless, the Panel observed an apparent level of underfunding for FOEs based on the data showing the ratio of costs to base funding for teaching and scholarship (Figure 3.2). The Panel's conclusion is that the costing study suggests that there is clear underfunding in FOE 8 (management and commerce), and possibly in some but not all disciplines in FOEs 6 (Health), 5 (agriculture and environment) and 10 (creative arts). The Panel assumes that the gap between costs and funding for these disciplines is being met by cross-subsidisation from other disciplines within the universities.

For FOE 8 (management and commerce) the costing study data clearly shows that mean costs for teaching and scholarship alone exceed funding. This is supported by the information for individual universities in Figure 3.5, which shows most have costs for teaching and scholarship that are above funding.

The Panel concluded that the apparent underfunding for FOEs 6 (health), 5 (agriculture and environment) and 10 (creative arts) in some institutions was probably related to the mix of disciplines within each FOEs. The Panel reached the view that in each FOE there are some universities with costs significantly above funding and this is due to the particular disciplines they offer within the FOE (see Figure 3.5). For example, FOE 6 is composed of medicine, dentistry (CGS funding cluster 8), allied health (CGS funding cluster 5) and nursing (CGS funding cluster 6). Universities offer different disciplines from within FOE 6; for example, only some would have a medical or dental school.

The Panel concluded that the disparity in costs between universities shown in Figure 3.5 indicates that specific disciplines in each FOE cause costs to exceed base funding. The issue of underfunded disciplines is discussed later in the chapter, using additional evidence and data.

Figure 3.5: Ratio of teaching and scholarship costs to funding, by field of education and by university



Note: The maximum and minimum points are indicated by the top and bottom points of the vertical lines showing the range of costs.

Source: Special data request from sample universities, Deloitte Access Economics 2011a.

Conclusions from the costing study

The Panel reached the following conclusions from the evidence in the costing study:

- The level of base funding is sufficient on average for the current costs relating to undergraduate teaching and scholarship but may not be enough for a reasonable level of expenditure on base capability in research.
- There appear to be cases of underfunding for some fields of education but in some cases, this appears to be caused by specific disciplines within an FOE.
- There may be cases of overfunding but the data is not conclusive. Discipline mix and judgments about how much expenditure on base research capability should come from base funding may explain the gap rather than genuine overfunding.
- There are three broad groupings of costs across field of education, not including the need to accommodate higher costs in medicine, dentistry, veterinary science and agriculture.

3.3 Towards a new base funding model

Table 1.1 in Chapter 1 presents the current base funding model relativities, identifying the student and government contributions and the combined total resourcing for each cluster of disciplines. As the table shows there are eight main funding clusters. Within four of the clusters different student contribution amounts apply for different elements of the cluster. The overall model, therefore, involves 11 different total funding rates.

The evidence provided to the Panel through the costing study as well as other independent costing studies and from submissions indicates that two main changes are warranted to this core model.

- The first is that the current 11 different funding rates, some of which differ only by small amounts, should be consolidated into a smaller number of clusters.
- The second is that there are several disciplines that are 'underfunded' at the rates in the current model. The funding rates for these disciplines need to be relatively increased.

These two changes are discussed below.

3.3.1 Fewer funding clusters

The Panel considers that the funding for different disciplines should match the costs of the course as closely as possible. This objective needs to be balanced by the acknowledgment that a funding model that tried to match the costs of every discipline or subdiscipline would be unworkable, particularly given the wide range of expenditure across universities. In addition, there is a point at which small differences in average costs do not require differences in funding.

The base funding model has gone far beyond the simple model originally envisaged under the RFM. The current small differences in funding amounts between disciplines would be understandable if the evidence supported costs being differentiated at this finely grained level, but this is not the case. The costing study showed that the differences in costs between universities for a field of education are often greater than the difference between funding clusters, suggesting that setting funding levels that are different by a few hundred dollars is not defensible.

It is also interesting to note that private universities in the United States tend to use a common fee for all undergraduate students and that Bond University in Australia has a common course fee for all but medical students.

The conceptual basis of the original RFM and the current base funding relativities is that there are differences between groups of disciplines in the cost of delivery of courses. In broad terms the differences are likely to relate to factors such as:

- large cohorts of students being taught through a lecture/tutorial format with no requirements for specialist facilities (low-cost)
- small group teaching, either in specialised facilities such as language or science laboratories or in professional experience programs (average-cost)
- courses that require expensive specialist facilities, small-group teaching methods and professional experience placements (high-cost).

While changes in the last two decades have resulted in dividing and splitting the clusters, the evidence now is of convergence. The evidence on relative costs, course delivery types and costs drivers all point to three broad groupings of disciplines. Within these groups the average costs for different disciplines lie in a range but the size of this range is less than the difference between the current groupings.

The Panel has concluded that the base funding model would be improved by reducing the number of funding clusters. Ultimately, the Panel considers that three or four base funding bands may be appropriate, possibly with medicine, dentistry, agricultural science and veterinary science (CGS funding cluster 8) identified and funded separately given their much higher cost. The Panel acknowledges that a move to only three or four funding clusters from the current 11 would be likely to result in a substantial increase in funding if no discipline had its funding reduced. The case for making this level of change is not justified by the current evidence.

However, given the lack of a coherent rationale or evidence of costs to explain the small-scale differentials in the current model, it would seem to be reasonable that disciplines that have similar levels of total base funding should be combined. In addition, some shift of disciplines between clusters needs to be considered in the light of the findings of the costing study.

Therefore, the Panel recommends rationalising the base funding amounts to a fewer number of bands, with disciplines allocated to each band according to the best evidence of the costs of delivery.

During the course of the review the Panel received advice from Professor Ross Williams (2011), Australia's leading expert on the costs of higher education. Professor Williams suggested an approach of aligning the funding clusters using a range of information including the costing study and substantiating evidence such as the KPMG study (Table 3.3).

An example of a simplified structure along these lines with five base funding clusters is shown in Table 3.3.

Table 3.3: Possible new clusters and relationship to existing clusters

Possible new clusters	Relationship to existing clusters
1. Law, business, economics, education, humanities, behavioural science	Clusters 1, 2, 4 and part of 3 (behavioural science or social science, but excluding social work)
2. IT, architecture and building, creative arts, mathematics and statistics, languages other than English	Cluster 3 (excluding behavioural science and social studies), Cluster 5 (excluding allied health and clinical psychology)
3. Allied health, nursing, other health, clinical psychology, social work	Cluster 5 (allied health and clinical psychology), Cluster 6, and Cluster 3 (Social Work and other Health)
4. Science, engineering and surveying	Cluster 7
5. Dentistry, medicine, veterinary science, agriculture	Cluster 8

Source: Williams 2011.

3.3.2 Underfunded disciplines

The Panel has concluded that evidence from the costing study and submissions suggests that there are some disciplines that are underfunded, in that the costs of teaching and scholarship alone exceed the base funding. The costing study shows clearly that accounting, administration, economics and commerce (CGS funding cluster 1) are in this situation and taking other evidence into account, the Panel concludes that this is also true of medicine, dentistry, veterinary science, agriculture (CGS funding cluster 8), and visual and performing arts (CGS funding cluster 5). The Panel was also concerned about the funding for law and humanities (CGS funding clusters 1 and 2), not because there was conclusive evidence in the costing study that costs exceeded funding but because it formed the view that the costs for these disciplines reflect the impact of funding constraints that have been accommodated through compromising course delivery.

The evidence from submissions included a number of research consultancies on costs for specific disciplines that could not be identified in the broad FOEs used in the costing study. The Panel used the evidence from these studies to supplement the costing study data, particularly for breaking down the health FOE into disciplines.

On the basis of all the evidence available to the Panel it believes that there are three groups of disciplines that warrant consideration for additional base funding per student.

In the first category—accounting, administration, economics and commerce (CGS funding cluster 1)—show a clear gap between costs and funding, based on evidence in the costing study for the related FOE.

In the second category—visual and performing arts (CGS funding cluster 5), medicine, dentistry, veterinary science and agriculture (CGS funding cluster 8)—the evidence is indicative of a gap between costs and funding, based on the costing study, other costing information and data from submissions.

The third category—law and humanities (CGS funding clusters 1 and 2)—represents an area of concern based on the evidence from submissions and consultations highlighting inadequate allocation of resources by universities.

These three categories of disciplines warrant further consideration in terms of increased funding. The issues are discussed in more detail below but the Panel considers that the first two categories

warrant an increased investment, while the third category deserves further consideration of their funding levels.

Accounting, administration, commerce and economics

Under the original relative funding model, accounting, administration, commerce and economics (CGS funding cluster 1) were assigned to the lowest funding cluster. These disciplines enrolled large numbers of students who were taught in lecture/tutorial format with no specialist facilities or equipment other than a well-stocked library. This method of teaching could be delivered at a relatively low cost.

In relation to accounting and economics, the evidence from the costing study is that the average costs of teaching and scholarship exceed the funding provided, even before the costs of any research-related activity is considered. This is confirmed by individual university data that shows universities generally had teaching and scholarship costs above funding.

The Institute of Chartered Accountants argues that the low levels of per student funding has resulted in lower course quality through larger classes and higher student–staff ratios. Universities have also had difficulty filling vacancies due to low salary levels, large classes, heavy workloads and limited support for research. The consequence of this can be seen in recent Excellence in Research Australia results with accounting faculties and staff not performing at the world-class level (submission no. 77, p. 2).

The Ballarat University School of Business argued that 'business schools have been funded on the assumption that their courses can be taught cheaply ... the current funding ratio reflects an outmoded understanding of business school operations'. It suggests costs have gone up because faculties now need to be internationally networked, offer internships and have good ICT. It claims to need 'at least double the numbers of senior academics to make a significant impact on the quality of teaching and learning' (submission no. 41, p. 6).

A university in the costing study put forward the view that accounting and business schools were able to spend more on teaching and learning due to access to discretionary income from international fee–paying students. Like 'unfunded' research, government should pay only for a reasonable level of quality and if universities are able to offer a higher quality paid for from other sources then this is not a case for government to increase its funding.

The Panel acknowledges this principle but notes that the qualitative information from the university is not supported by the costing study's regression analysis of cost drivers. A correlation between fee–paying students with higher costs was not confirmed by the regression analysis. The regression found that the number of fee–paying students was not a cost driver. The Panel has concluded that the underfunding of accounting, administration, commerce and economics is a genuine issue.

Visual and performing arts

A number of submissions to the Panel highlighted the cost of studio-based courses, arguing that costs are similar to laboratory-based courses. In particular, creative arts subjects (CGS funding cluster 5) such as sculpture, painting and music have high equipment and teaching costs.

For example, the Australian Council of University Art and Design Schools in its submission to the Panel argued that the cost of delivering undergraduate education in visual arts is not adequately covered by current funding. It noted that major drivers of higher costs in the discipline are studio-based teaching and associated equipment and materials. The studio teaching environment

of visual arts has general characteristics similar to the laboratory environment in science. It quotes from the Studio Teaching Project, an independent analysis of studio teaching costs by the Australian Learning and Teaching Council undertaken in 2010:

> It is clear that studio is a highly valued core pedagogy that takes many forms and is delivered more efficiently in some schools and disciplines than in others. Even so, studio is inherently more expensive than many other disciplines to manage, and the costs have risen significantly with the development in, and integration of Information Communication Technologies (ICT). There is a pervasive sense among heads of school who contributed to the survey that the conditions of the contemporary university environment may be diminishing the capacity to provide quality learning in Art, Architecture and Design (submission no. 42, p. 9).

The costing study reported studio-based performance arts as part of the broader FOE 10 (creative arts). The Panel's view is that the evidence indicates that universities offer performance and creative arts disciplines with a high studio component based on low student–staff ratios and it is these disciplines from FOE 10 that are underfunded.

The disparity in costs for FOE 10 (creative arts) between institutions suggests that it may need to be split between funding clusters with visual and performing arts moved to a funding cluster with a higher rate.

Medicine, dentistry and veterinary science

Several submissions to the Panel provided data on the costs of delivering courses that have a large component of laboratory-based teaching, such as medicine, dentistry and veterinary science (CGS funding cluster 8). Evidence provided showed that these courses have costs for teaching and scholarship that are consistently above the funding received. For example, James Cook University provided evidence of the costs for courses across four universities (La Trobe, James Cook, Sydney and Curtin). Evidence was also provided by the University of Sydney Medical School and the Australasian Council of Dental Schools.

Despite receiving an increase in funding in 2008, medicine, dentistry and veterinary science were found to be underfunded, both in terms of the resourcing required and in comparison with the funding provided internationally. This finding is in line with the findings from previous studies in this area, and reflects the very high costs of delivery in these fields, particularly for clinical placements. The evidence points to the largest funding gaps being for dentistry and veterinary science. Medicine was also underfunded but not as dramatically. The Panel believes that the underfunding of these disciplines explains the difference reported in the costing study between costs and funding for FOE 6 (health) (Figure 3.4).

Other health disciplines

The evidence from the KPMG study pointed to a mixture of underfunding and overfunding for other health and nursing disciplines (CGS funding clusters 5 and 6). Of these, social work and pharmacy were underfunded for the sample universities, although only two universities were studied. The Panel was not able to determine reliably that there was underfunding for other health disciplines although it does note that the Australian Council of Heads of Schools of Social Work has consistently identified underfunding of the discipline. The Panel strongly encourages further work to better establish whether there is under- or overfunding for any other health disciplines.

International comparisons in medical and veterinary science funding

The Panel's views on the appropriate level of funding for medicine, dentistry and veterinary science were also influenced by international comparisons. While it is difficult to make precise comparisons between different jurisdictions, there is evidence that Australian funding for medicine, dentistry and veterinary science remains relatively low by international standards.

A variety of funding mechanisms exist in other countries, ranging from public funding for clinical training being provided through government health appropriations (as in England) or through separate appropriations for university teaching hospitals (as in major US public universities). As a result it is difficult to make direct comparisons of funding for medical courses, and base funding comparisons do not capture the full value of the funding provided for medical courses internationally.

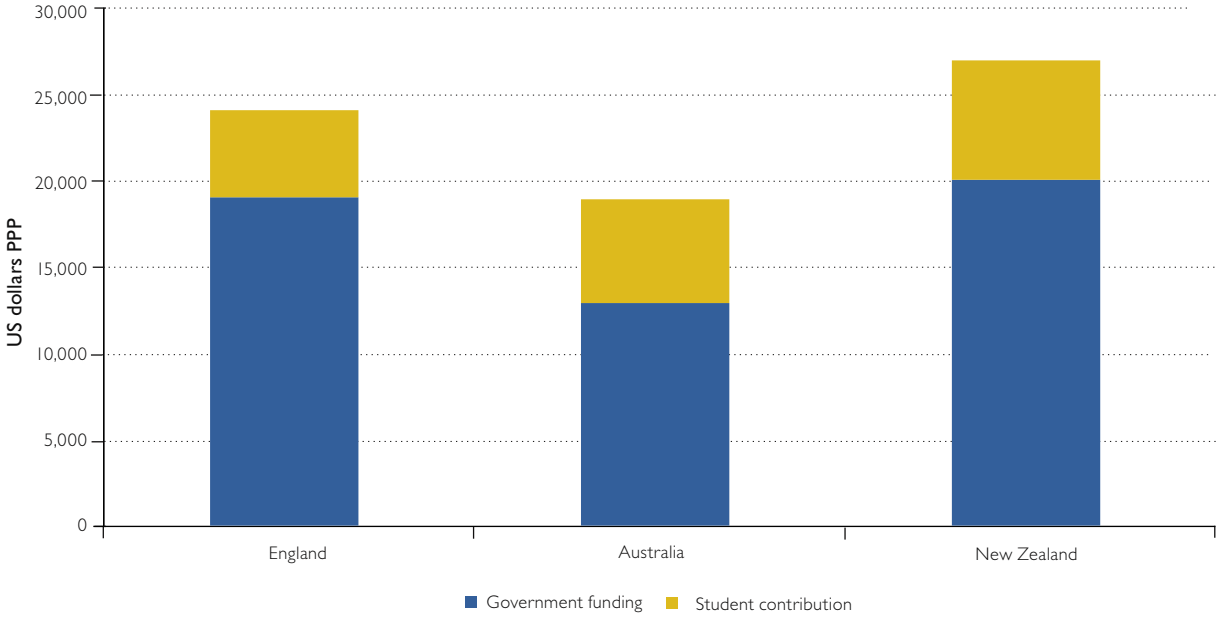
Much of the cost of medical education lies in clinical training that is provided by teaching hospitals and other clinical providers. Funding to cover these costs is often through health agency funding. In recognition of the mutual benefits of clinical practice, neither party bills the other for services (Higher Education Funding Council for England 2010). In Australia the provision of clinical training is funded by the Australian and state and territory governments and involves large amounts of in-kind support negotiated at the level of individual universities and hospitals. This obscures the amount that is being paid for clinical training by each party.

One of the consequences of the lack of clarity about the source of funding across the medical school – health provider divide is that, in the case of medicine, international funding comparisons are necessarily made with even more caution than for other disciplines. However, the Panel's research suggests that there is substance to the argument made to the Panel by the Medical Deans of Australia and New Zealand (submission no. 26, p. 24) that base funding for medicine in Australia is significantly less than in New Zealand, England and Canada. This is illustrated in Figure 3.6, which compares base funding for medicine across New Zealand, England and Australia. This figure reveals that Australian funding per student for medicine, excluding any practicum-specific funding, is considerably lower than in England or New Zealand.

The Council of Veterinary Deans of Australia and New Zealand noted that in comparison to Australia, the top five veterinary schools in North America receive over $US 118,000 per student per year. The government contribution per student per year exceeded $US 63,000 in Canada and $US 59,000 in the United States in 2009. Australia also lags behind Norway ($AU 54,800) per student and is closest to Ireland and the United Kingdom ($AU 30,340 and $AU 28,719, respectively) (submission no. 142, p. 5).

The Panel does qualify this conclusion by acknowledging the difficulties in establishing the funding available for these high-cost clinical courses that must be examined in setting a new base funding rate. While base funding is a major ongoing source of funding, additional funds are provided through specific DEEWR grants, grants from the Department of Health and Ageing and direct and in-kind funding from the states and territories. The Panel believes that this has the effect of narrowing the gap between the funding for clinical disciplines and costs but that there is still a residual underfunding. The issue of state and territory funding for clinical training is discussed in the next chapter and this will be part of establishing an appropriate level of additional funding for medicine, dentistry and veterinary science.

Figure 3.6: Base funding for medical studies in England, Australia and New Zealand, 2009



Note: English and New Zealand funding estimates are based on a standard undergraduate degree, using unweighted averages where government funding rates and student tuition fees vary by year of course.

Sources: England – HEFCE 2009. Australia – DEEWR data, New Zealand – Tertiary Education Commission 2009; Universities New Zealand 2008.

The Panel was aware that the consideration of funding for medical places needs to include the CGS Medical Loading, which provides additional funding for university infrastructure at teaching hospitals. While the Medical Loading was not included in the funding to cost ratios in the costing study, the Panel did take account of this in making its assessments. The Panel was unclear why there was a loading for medicine only and not dentistry and veterinary science as well. The Panel was of the view that the Medical Loading could be used to offset some of the recommended increase for high-cost clinical courses.

Agriculture

The evidence on agriculture (CGS funding cluster 8) in the submissions was limited but the Panel believes that the university in the costing study with high costs in FOE 5 (agriculture) was offering an agriculture course with much higher costs than for other disciplines in the FOE. The Panel was concerned that some disciplines within FOE 5, such as environmental studies, are all in the highest CGS funding cluster, but are not of a similar cost as farm-based agriculture. The Panel believes that FOE 5 (agriculture) should be split so that farm-based agriculture is kept with the clinical health disciplines and funded at that rate.

Based on international comparisons and the available costing information, the Panel considers that the base funding rate for medicine, dentistry, veterinary science and agriculture should be increased significantly and by as much as 25 per cent.

Law and Humanities

The evidence from the costing study suggests that law (CGS funding cluster 1) and humanities (CGS funding cluster 2) do not meet the underfunding criteria but the Panel believes that these disciplines are examples of areas of particular vulnerability. As there are no external professional body requirements that dictate benchmark standards of course delivery, such as minimum student–staff ratios, these disciplines have been an obvious target for efficiencies. The submissions from student, faculty and professional bodies indicated the constraints under which these disciplines are now operating. These include reductions in small-group tutorials and higher student–staff ratios.

For example, the Australian Academy of the Humanities argued that:

> The relatively low funding levels for humanities teaching have had dire consequences, most immediately evident in the escalating student–staff ratios, and a profound impact on the sustainability of courses and quality of teaching provision (submission no. 93, p. 3).

These clusters were not subject to an increase in per student funding when the Government last changed funding cluster amounts in 2008 and this has compounded the relative under-resourcing. For these disciplines in particular the level of base funding should be adjusted to encourage a reduction in student–staff ratios.

Submissions to the Panel highlighted the changing nature and cost of all teaching and learning in higher education and the constant demands to provide students with flexibility in learning and to incorporate new technologies into teaching. Today, the typical methods of teaching and learning in the 'low-cost' disciplines involve flexible, blended delivery using interactive technologies. Many courses in these disciplines offer units of WIL.

In its submission to the Panel, the Australasian Council of Deans of Arts, Social Sciences and Humanities argued that the historical assumptions on which the clusters are based no longer accurately reflect differences between teaching patterns in different disciplines, nor 'the significant changes now taking place in teaching practices in between and within disciplines' (submission no. 30, p. 3). The Council argues that the traditional assumptions that studies in the arts, social sciences and humanities are primarily 'classroom-based' while other disciplines are 'lab-based' are no longer accurate, given the growth in fieldwork, innovative teaching methods, language laboratories and the use of interactive technologies in all disciplines.

The Council of Australian Law Deans made a similar point in its submission, arguing that the current funding of law is based on a 'fundamental miscalculation of the real cost of teaching law' (submission no. 54, p. 6).

The Panel believes that the simplification of the base funding relativities to rationalise the clusters according to similarities in modes of teaching, should include measures to align humanities, law, economics, accounting and related disciplines.

3.3.3 Changing the current base funding model

It would be possible to make the changes that the Panel proposes to the base funding model—that is, to reduce the number of clusters and to address the underfunding of the identified disciplines—in two stages. This could be done in a way that (a) ensures that no discipline receives a lower funding rate than under the current model, and (b) provides the most significant increase to those disciplines that have been demonstrated to be most underfunded. A general increase in base funding recommended in Chapter 2 could also be implemented in this way.

Stage 1: Addressing underfunded disciplines

The costing study and submissions provide enough evidence on university costs to conclude that some disciplines should be funded at a higher rate. To address this would require adjusting the funding for the identified disciplines. No clear evidence emerged of overfunding so all other disciplines should remain at current rates.

Based on all of the evidence, the Panel recommends that the Government should address the identified areas of underfunding in the disciplines of accounting, administration, economics and commerce (CGS funding cluster 1), medicine, veterinary science, agriculture and dentistry (CGS funding cluster 8), and should consider increasing the funding level for law (CGS funding cluster 1) and humanities (CGS funding cluster 2).

In this option the changes to the base model are implemented through:

- increases in funding for selected clusters
- where necessary the movement of disciplines to different clusters.

Stage 2: Introducing an overall increase in funding per EFTSL

The Panel has recommended in Chapter 2 an overall increase in base funding as a means for Australia to maintain international competitiveness. This could be implemented in a number of ways, the simplest of which would be a flat percentage increase in total resourcing per Commonwealth supported place. However, such an increase is not supported in isolation as the Panel believes it would entrench inappropriate differentials. The model described below could be used to provide an overall increase in funding in a way that results in more appropriate differentials and reduces the clusters to five groups. Reducing the number of discipline clusters to five groups would go a considerable way towards acknowledging the convergence of costs between disciplines in the higher education sector.

These changes to the base model could be implemented through:

- a modest increase in the total funding rate (student plus Commonwealth contribution) for the first discipline cluster in the model
- a consolidation to five clusters, with some shifts of disciplines between clusters
- a stretching of the top relativity to 3.0.

An example of a changed model along these lines, using five funding clusters, is shown in Table 3.4.

Table 3.4: Indicative new clusters (Stage 2)

Indicative new clusters	Indicative relativities
Law, accounting, administration, economics, commerce, humanities	1.0
Other health, education, behavioural science (including social work), social studies	1.2
Built environment, mathematics, statistics, computing, clinical psychology, allied health, foreign languages, visual and performing arts, nursing	1.6
Engineering, science, surveying, environmental science	2.0
Dentistry, medicine, veterinary science, agriculture	3.0

The actual funding rate for each cluster in this example would depend on the funding rate set for the lowest cluster. If the rates and relativities were set such that no discipline receives a lower funding rate than under the current model, then there would be a significant net increase in funding to the sector and an increase in the average funding per EFTSL.

Implementing the new model

The total additional funding provided in each stage would depend on the actual funding rates and relativities and the number and composition of the clusters. The total cost would be shared between the Government and the students, given that base funding rates are the sum of the Commonwealth contribution and the student contribution amount. The actual costs borne by government and students would depend on the way in which the Commonwealth and student contribution amounts are modified for each cluster. This issue is addressed in Chapter 5.

3.4 The costs of postgraduate courses

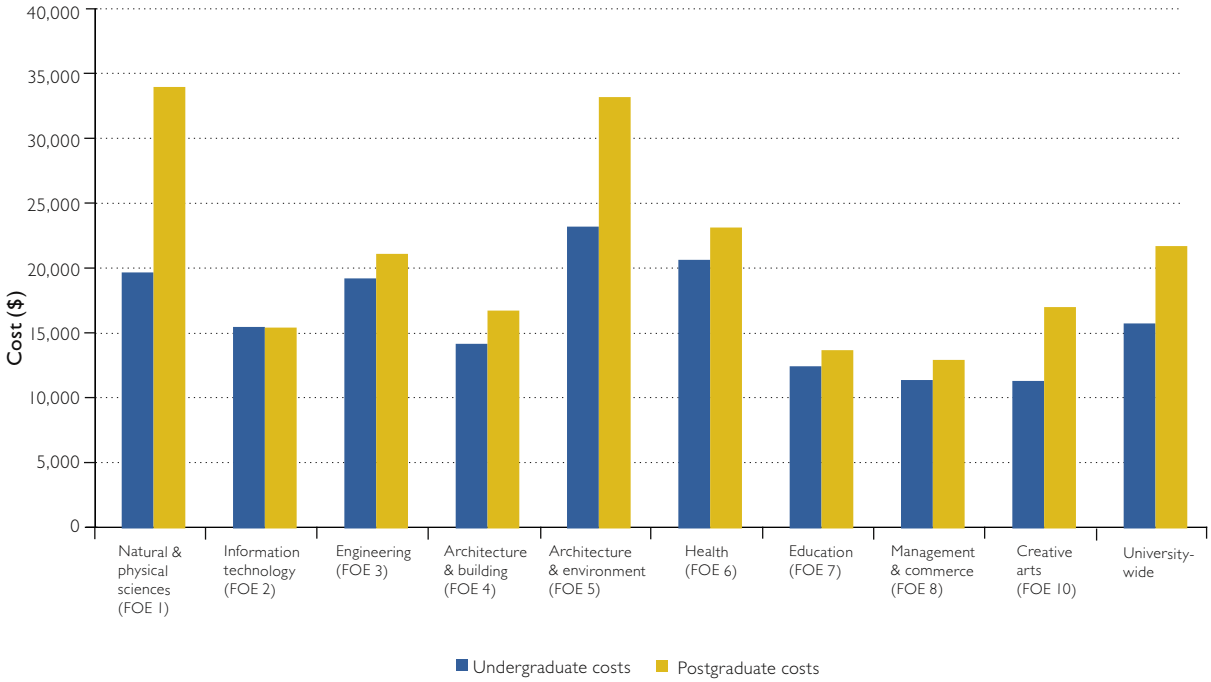
The Panel was asked to examine the cost of postgraduate education and whether it was higher than undergraduate education.

The original research to develop the RFM identified differences in the year of course as a determinant in costs per student (Sharma et al 1989). The costs of postgraduate coursework, and research degrees, were identified in the RFM but later-year undergraduate study was not, even though the difference in costs was noted.

The Panel considered evidence from the Deloitte Access Economic costing study and submissions to the Panel.

The costing study found that expenditure on postgraduate courses was generally higher than on undergraduate courses per EFTSL across most FOEs (Figure 3.7). The cost differential ranged from almost zero in FOE 2 (information technology) to 72 per cent in FOE 1 (natural and physical sciences). On average the study found that the cost of postgraduate courses was around 15 per cent higher than undergraduate courses in six of the seven universities providing evidence for the study. The universities attributed the difference to the higher costs associated with more senior staff that teach at postgraduate level, smaller class sizes and diseconomies of scale.

Figure 3.7: Mean teaching and scholarship costs per full-time equivalent student, by field of education



Note: Sample size for these data is seven. While five universities provided this cost split directly, for two universities it is based on an apportionment of postgraduate costs from total T+S costs by relative EFTSL. The maximum and minimum points are indicated by the top and bottom points of the vertical lines showing the range of costs.

Source: Special data request from sample universities, Deloitte Access Economics.

This picture of average higher costs was supported by several submissions to the Panel. These submissions argued that postgraduate courses are more costly with estimates for the relative difference ranging between 1.2 to 1.6 times the cost of undergraduate courses (Australian Deans of Built Environment and Design; Australian Council of University Art and Design Schools; The University of Melbourne; Council of Australian Postgraduate Associations submissions). The Australian Deans of Built Environment and Design also suggested that 'infrastructure needs [at the postgraduate level] are almost double those of undergraduate levels per student' (submission no. 20, p. 10).

Several submissions argued that funding levels should not distinguish between the two levels, since the cost of postgraduate study was similar to the cost of senior undergraduate years.

The University of Technology, Sydney argued that:

> ...cost differences for postgraduate degrees are greatly exaggerated and are primarily due to class sizes. They are similar in costs to upper year undergraduate teaching in terms of staffing, infrastructure needs and student support (submission no. 62, p.15).

The University of New South Wales argued that it was the 'aspirations and mission of each institution' that determined costs and there was no generic difference (submission no. 134, p. 6).

The Panel notes that class sizes vary at the postgraduate level; some are comparable to specialised undergraduate courses, while others may remain small. Further, the issue of scale is not unique to postgraduate courses; it also affects low-volume courses, regional delivery and later years of undergraduate courses.

One submission provided confidential cost summaries, indicating postgraduate courses cost approximately the same as undergraduate courses in the same discipline. In its submission to the Panel, Victoria University referred to internal research indicating the costs of teaching business degrees did not vary between the undergraduate or postgraduate level (submission no. 136, p.12).

Some submissions asserted that in professional entry courses, the skills and teaching requirements for professional entry do not vary whether taught at the postgraduate or undergraduate level, so there should be no additional cost, regardless of the level of qualification:

> While recognising that a professional entry postgraduate coursework program will be delivered to a more advanced cohort and be different in structure and intensity, the nature of the discipline and skills taught will be generally equivalent to those covered by an undergraduate program that delivers the same professional accreditation (The University of Queensland, submission no. 155, p. 2).

> With regard to music, [the National Council of Tertiary Music Schools] considers that there is, on average, no material difference in the cost of delivering postgraduate coursework degrees versus undergraduate degrees (submission no. 137, p. 9).

Several submissions noted the expansion of postgraduate courses over time and suggested that there was evidence of these being 'rebadged' undergraduate courses:

> Most postgraduate teaching is currently funded fully by student fees giving a higher funding level per unit than undergraduate with government funding. To justify this higher level of fees universities have an incentive to offer a different teaching approach so as to be seen to offer value for the additional money (Victoria University, submission no. 136, p. 12).

The question of the appropriate level of course delivery is an issue for the Tertiary Education Quality and Standards Agency.

3.4.1 Funding for postgraduate courses

The Panel is concerned that the increasing expectation that postgraduate qualifications are necessary to enter a profession is extending the time and therefore the cost of entry-level professional credentials, for both students and the taxpayer. While this is consistent with global trends, the Panel found no compelling evidence of benefits to society or individuals from lengthening the time required to obtain an entry-level professional qualification. The Panel agrees with the view presented in many submissions that any cost differentials in the delivery of postgraduate education compared to undergraduate education are based on institutional choice and should not be supported by base funding. The Panel notes that if a university wishes to offer a high-cost postgraduate course then it has the choice to offer it as a full fee–paying course, or to partially fund it from general university revenue. Certainly there did appear to be a greater trend towards postgraduate delivery in those institutions with access to a more diverse range of private sources of revenue.

Additionally, the Panel is concerned that providing a higher funding rate for approved courses offered at the postgraduate level would create incentives for universities to turn undergraduate courses into postgraduate courses without any obvious benefit to students or the community. Some submissions have pointed out that these incentives already exist, with institutions restructuring courses in response to the decision to abolish full-fee places at the undergraduate level and the need for institutions to diversify their revenue sources:

> Higher postgraduate funding, particularly in the absence of clear evidence that there is a general significant cost differential, will create an incentive for universities to move courses from undergraduate to postgraduate simply to take advantage of the funding differential (University of Technology, Sydney, submission no. 62, p. 16).

The Panel believes that maintaining the same level of funding for undergraduate and approved postgraduate courses ensures institutions make decisions about course offerings based on demand, academic standards, professional accreditation and competiveness, rather than funding levels alone. The Panel therefore recommends that where the Government allocates Commonwealth supported places to postgraduate coursework courses that they should be funded at the same rate as undergraduate courses.

3.5 Options for other base funding models

While the Panel has focused on the relative costs of different disciplines and changes that need to be made to realign the relativities, it also reached the conclusion that base funding relativities are fundamentally driven by different modes of teaching. This led the Panel to consider whether in the long term, the best way to capture differences in costs would be through grouping units of study according to mode of teaching, rather than discipline.

The mode of teaching for a unit of study can be laboratory or studio based, involve clinical training, fieldwork, WIL, or be classroom based. It could also be campus based or via distance, or a combination of the two. The different modes of teaching require different levels of facilities, ICT infrastructure and staff support, which can lead to different employee and infrastructure costs independent of the discipline being studied.

As part of the costing study, case studies were made of the costs of individual units of study. The evidence confirmed that mode of teaching has an impact on average cost and that this appears to reflect the higher level of staffing required in some teaching modes. The costing study examined the typical mode of teaching for five units of study and found a positive correlation between student–staff ratios and higher teaching costs (Table 3.5), indicating the significance of mode of teaching as a cost driver (Deloitte Access Economics 2011a).

Table 3.5: Case studies of selected subjects, 2010

	Education-Professional experience	Nursing practice	Criminal law	Engineering mathematics or differential calculus	Financial accounting
Average contact hours[a]	260	183	119	244	168
Class size[b]	Between 25 and 155	Between 10 and 81	Between 24 and 264	Between 17 and 123	Between 9 and 310
Modes of teaching used by different universities[c]	• Tutorials • Practicum • Lecture • Workshop	• Lecture • Laboratory • Practicum • Tutorial • Problem-based learning	• Lecture • Seminar • Tutorial	• Lecture • Practice class • Tutorial • Workshop	• Lecture • Tutorial

a Provided by four universities.

b Provided by three universities.

c Provided by four universities.

Source: Deloitte Access Economics 2011a.

As disciplines are only a proxy measure of the cost of delivering a course, it would be desirable for the funding model to reflect the costs of real differences in modes of teaching (or teaching intensity) associated with delivering units of study, rather than the proxy category of disciplines. Ideally, the base funding model should permit units of study to be classified into groups according to mode of teaching rather than discipline.

However, the Panel recognises that such a model would be impractical to implement in the short term as it would involve reclassifying thousands of units of study. The Government would also need additional data to provide costing benchmarks for different modes of teaching. As the base funding relativities are only intended to provide an estimate of the relative costs of different types of teaching, such a major reclassification cannot be justified at this stage.

It is also possible that good data on the costs of different modes of teaching may not be simple to collect; for example, while 'nursing practice', on average, does not have as many contact hours as 'education – professional experience' or 'engineering mathematics or differential calculus', it tends to have smaller class sizes and more complex modes of teaching, which help explain its higher average cost.

Nevertheless, the Panel noted that in England the higher education funding model allocates funding to clusters that are broadly based on the differential costs for mode of teaching (Higher Education Funding Council for England 2007).

Clustering subjects by mode of teaching rather than discipline would more directly focus on a significant driver of cost differences (Deloitte Access Economics 2011a) and would be a more precise way to capture differences in the costs of delivery. On the other hand, allocating funding according to mode of teaching is potentially administratively complex and may also be more open to manipulation, in the sense that subjects could change their current mode of teaching for no other reason than to gain additional funding.

One specific benefit of a mode of teaching model would be the ability to account for the cost of WIL units of study in the funding model. As discussed, earlier the provision of WIL is increasing with many courses now containing units of study delivering a work-based experience. These units tend to be at a higher cost but only some disciplines have explicit funding for WIL. A mode of teaching model would be a good mechanism to reflect these differential costs irrespective of discipline.

On balance, the Panel concluded that a new base funding model based on mode of teaching, while a worthy long-term aspiration, could not be implemented in the near future, and the structural failings of the current system (particularly the underfunding of certain clusters) should be ameliorated as soon as possible to reduce the risk of universities closing courses that are inadequately funded when the demand driven system is fully implemented.

The Panel nevertheless recommends that work should commence on a costing study to assess the costs of different modes of teaching, so that the possibility of designing a funding model based on mode of teaching might be considered in the future.

3.6 Improving the evidence base

In undertaking this review, the Panel was satisfied that it had better evidence than had been available since the original design of the RFM. However, it was clear that each of the universities in the sample examined by the costing study had difficulty in delivering a high level of expenditure detail. The data delivered reflected the limitations of universities' internal systems and general ledger formats. In

addition, it was clear that institutions had different approaches in allocating costs and it was difficult to identify expenditure on teaching and learning separately from research.

At the time the costing study was undertaken the university sector had recently completed a similar exercise, in association with Department of Innovation, Industry, Science and Research (DIISR), collecting staff time spent on research activities, but this had been collected with confidentiality clauses, and universities believed that they were unable to release the data to the Panel. This was regrettable because the two data sets together would have contributed to a more robust understanding of university funding, particularly that component of research activity related to chief researchers in Australian Research Council and National Health and Medical Research Council projects and those academics undertaking research without specific research funding.

The Panel considered that since government departments are reconfigured over time, such restrictions on access to data are not in the interests of good decision making.

For base funding relativities to continue to evolve and to reflect the real costs of different types of provision, additional information will be required to underpin policy decisions regarding base funding in the future. This is especially important in the context of a student demand driven system where the funding needs to broadly match costs to promote efficiency and avoid inefficient incentives or disincentives to providing particular courses.

Understanding the true costs faced by the university sector has been an issue since the development of the Relative Funding Model in the late 1980s. In 1998 Ernst & Young was engaged to undertake costing within the higher education sector using activity-based management principles (Ernst & Young 1998, p. 5). More recently Allens Consulting Group suggested there was a need for considerable investment in university accounting systems to better understand actual costs (Allens Consulting Group 2010). Access Economics has also commented on the need for more reliable and accurate cost information and suggested an activity-based costing approach (Access Economics 2010).

While an improved information base is essential for policy and planning purposes in government, it also has the potential to assist higher education institutions in managing resources more efficiently and effectively at the institutional level.

3.6.1 Current data collection systems

The Panel appreciates that publicly funded universities report regularly to government on financial matters. This financial reporting takes place through a number of mechanisms, including annual financial reporting requirements, performance agreements, and conditions attached to grants made under targeted programs. In addition, state and territory governments impose auditing requirements. The reports generated by these activities provide a picture of universities' sources of revenue and categories of expenses at the broad level. They also provide a patchwork of information about the costs of some categories of activities.

Universities indicated to the Panel that current reporting requirements are resource intensive, and that the requirements for some specific programs are excessive. The Panel does not want to impose additional financial reporting requirements on universities unnecessarily. However, there would be a potential benefit to all parties if the Government were to engage with the sector in exploring options for universities to report expenditure at a functional level on a common basis across all institutions and to have consistent activity-based costings.

The present costing study proved challenging and required considerable resources and diligence on the part of the universities involved. To have irregularly constituted costing exercises in the future would not support flexibility and ongoing reform.

The Panel therefore proposes the development of ongoing data collection on costs and funding, modelled on the extensive consultative approach used by DIISR in its examination of research activity. Essentially the model should be one of consultation delivering an agreed and consistent instrument that can be used into the future. The aim should be to minimise the burden on institutions while having a facility that produces aggregate data to inform policy, particularly decisions about meeting the costs associated with different disciplines, modes of teaching and functions. The Panel also hopes that such a facility might prove useful to the institutions themselves for internal planning and development.

It is important that ongoing adjustments between disciplines or increasing levels of funding allocated to specific types of teaching activities are based on consistently derived and supported collection instruments.

3.7 Summary and recommendations

There is considerable diversity in how institutions allocate resources to different disciplines. This diversity is to be expected because universities have different strengths and strategic priorities as well as different institutional contexts. In contrast to publicly funded higher education systems in some other countries, Australian universities operate as independent, autonomous institutions and not as government departments. They have the autonomy to allocate base funding between different activities internally.

Consistent with this principle, the Panel expects universities to have the capacity to determine their strategic priorities, to understand the cost of achieving those goals, and to allocate funding accordingly. The Panel therefore accepts that some level of internal cross-subsidisation will occur within the broad funding envelope at the institutional level, as a result of a university's own strategic decisions. The Panel would, however, be concerned if the necessity for internal cross-subsidisation was being driven by other reasons, such as shortfalls in base funding. The student demand driven system will make it particularly important to have greater alignment between funding and costs to avoid perverse or inequitable impacts on the number of places offered to students.

The amount of base funding that a university receives cannot be based on precise estimates of the costs of every different type of higher education activity in each university. Furthermore the evidence suggests significant variation in the relative funding allocated across the suite of disciplines among universities. The level of funding allocated to each discipline cluster is intended to be the reasonable average costs of delivery of courses within those discipline groups. In determining the level of resources that should be provided to universities for carrying out their broad roles of providing teaching informed by scholarship and base capability in research, the Government should seek to ensure that, overall, the core functions of universities are adequately resourced.

The base funding relativities should aim to reflect, as far as possible, best estimates of average costs of different types of course delivery so that universities receive adequate levels of overall funding. In estimating the costs of different types of activities, the base funding system aims to minimise the necessity for cross-subsidisation that is designed to compensate for funding shortfalls within institutions.

While the Panel notes the difficulty of obtaining precise estimates of the cost of different types of higher education course delivery, it has collected evidence that illustrates the range of costs of various activities to inform its advice to the Government about developing a more rational and consistent basis for allocating base funding.

Address areas of underfunding

The evidence from the commissioned research and submissions to the Panel indicated that some disciplines are underfunded in that they received insufficient base funding to support teaching and learning alone. The additional responsibility for base research capability was therefore unresourced from base funding. Cross-subsidisation from other disciplines should be reduced by increasing the funding for these disciplines.

Recommendation 4: Address areas of underfunding

The Australian Government should address the identified areas of underfunding in the disciplines of accounting, administration, economics, commerce, medicine, veterinary science, agriculture, dentistry, and visual and performing arts, and should consider increasing the funding level for humanities and law.

Adjust relativities to better reflect costs

The Panel concluded that some funding cluster amounts no longer reflected the cost of delivering courses. While there will always be debate about what is adequate or appropriate, the evidence confirms that although government investment in participation and access has recently been substantial, there is, on average, an insufficient resource across all disciplines at the individual student level to support the purposes for which base funding is given.

Recommendation 5: Adjust relativities to better reflect costs

The Australian Government should reduce the number of base funding clusters to reflect the convergence of costs of delivery between courses and adjust the relativities accordingly.

Maintain per student funding levels

There is no evidence that any clusters are systematically overfunded. To avoid further increases in student–staff ratios or adverse impacts on quality, the Panel recommends that its proposed changes should be introduced without cuts to any of the current cluster funding rates.

Recommendation 6: Maintain per student funding levels

In modifying the clusters and relativities, no discipline should experience a reduction in per student funding in real terms.

Funding for postgraduate coursework study

The costs of delivering postgraduate courses are driven by similar factors that drive costs at the undergraduate level. The Panel is concerned that differential funding arrangements at the postgraduate level would create incentives for universities to offer higher funded postgraduate courses at the expense of undergraduate provision. Maintaining the same level of funding for undergraduate and postgraduate courses ensures institutions make decisions about course offerings based on demand, academic standards, professional accreditation and competiveness, rather than funding.

Recommendation 7: Funding for postgraduate coursework study

Where the Australian Government approves Commonwealth supported places in postgraduate courses, the level of funding should be at the same rate as funding for undergraduate courses.

Improving the evidence base

Rather than developing periodic instruments and processes to assess costs it would be more efficient to develop an agreed measurement instrument in consultation with the university sector that could be used to provide evidence for policy decisions in regard to higher education funding on an ongoing basis.

It is important to have up-to-date evidence that provides a legitimate basis for changing the relativities between disciplines or increasing the levels of funding allocated to specific types of teaching activities. While the Panel has obtained some of the best data available since the RFM was introduced, the universities involved in the costing study had some difficulty in providing detailed information. It is important, for the funding system to evolve, that there be continuing effort to obtain costing information. The Panel identified several other matters reinforcing the need for a more systematic approach to data collection.

First, the Panel believes that a better basis for determining relative funding levels may be on the basis of mode of teaching, as is currently the case in England. However, there is insufficient evidence in Australia on the costs of various modes of teaching to support this model. The Panel therefore recommends that the Government consider a study into the costs of teaching with a view to categorising units of study by modes of teaching in the long term. Further, the Panel acknowledges that Australian universities do not currently undertake costing activities in a systematic way, which would mean any attempt to introduce funding on the basis of mode of teaching would entail significant administrative and implementation costs.

In recognition of the increasing adoption of WIL as a method of teaching within many disciplines, the Panel considers that the base funding model should assist universities to meet these additional institutional costs. However, the existing data was insufficient to suggest how this might be done in a way that reflected costs or avoided unexpected consequences. For this reason and in recognition of the expansion of these programs, the Panel suggests that the costs of WIL be systematically and consistently measured.

The Panel does not want to impose additional financial reporting requirements on universities unnecessarily. However, there would be a potential benefit to all parties if the Government were to engage with the sector in exploring options for universities to report expenditure at a functional level on a common basis across all institutions.

Recommendation 8: Improving the evidence base

To inform future funding policy and after consultation with universities, the Australian Government should develop an agreed ongoing cost measurement system that collects data on:

- functional expenditure
- the costs of delivery, including information on the costs of modes of teaching
- the internal and external costs of work-integrated learning.

Funding to meet costs of changed data requirements

Should the Government undertake work to improve data collection, then appropriate funding should be provided to the higher education sector to support this work.

Recommendation 9: Funding to meet costs of changed data requirements

The Australian Government should provide appropriate funding support to institutions to develop the enhanced data base recommended in this report.

Chapter 4: Supporting quality teaching and learning

The Panel was asked to consider what was needed to ensure that funding for Australian undergraduate and postgraduate coursework education remained internationally competitive and appropriate for the sector. Chapter 3 described the evidence available about the costs attributed to base funding activities. In the chapter the Panel advised how the core funding model could be modified to be more effective in a student demand driven system.

This chapter addresses a range of issues outside the core funding model that need to be considered to ensure that base funding and related programs operate together in an optimal way. These issues include the funding of performance in relation to teaching and learning, support for innovation in teaching and learning, the funding of scholarship and base capability in research, funding for infrastructure, funding for clinical practicum-based study, and the generation of non-government revenue.

In considering the best model to support quality teaching and learning, the Panel looked at the role of base and Performance Funding in supporting quality teaching, and the relationship of the goal of quality teaching to funding scholarship, research and infrastructure. This chapter further examines some of the factors identified in the previous chapter as causing cost pressures. In particular it considers teaching practicums, clinical placements and infrastructure needs and suggests ways these issues might be addressed in the short and long term.

This chapter further seeks to uphold the principle of university autonomy in allocating resources while providing opportunities for universities to diversify their funding sources.

In the previous chapter, the Panel noted that an important way to secure quality in teaching and learning is to align funding with the reasonable costs of delivering courses. In this chapter, the Panel also considers other ways to pursue the broad objective of improving the quality of teaching and learning. This includes Performance Funding, and whether universities should be offered a limited opportunity to develop outstanding courses at above-average cost.

4.1 Base funding to promote high-quality teaching and learning

The purpose of providing base funding is to ensure that public universities and other eligible higher education providers have sufficient resources to maintain the quality of course delivery expected from the Australian higher education system.

The focus of this Review is on how funding supports quality, but the Panel acknowledges the importance of support for quality beyond direct funding to universities. For example, in 2011 the Australian Government transferred the awards and grants work of the Australian Learning and Teaching Council to the Department of Education, Employment and Workplace Relations (DEEWR). It is to be hoped this departmental function with a revised strategy will be found to be as effective as the Higher Education Academy in England (Gibbs 2010, p. 26). The academy was established to raise the status of teaching in higher education by, *inter alia*, developing an evidence base and

promoting professional teaching training for university teaching staff (Mahoney 2011). Such a body is but one contributor to the development of a culture that values, supports and rewards teaching and innovation.

As discussed in previous chapters, the quality of the teaching provided by Australian universities is generally good, with examples of outstanding practice. However, student satisfaction with several elements of their university experience is lower than the levels in comparable countries for which data is available. Efforts to further improve quality and student satisfaction should remain a priority of the higher education sector given the evolving needs of society and the changing expectations of new cohorts of students.

The Panel has been told that targeted investment of funding in additional academic teaching staff could deliver disproportionately high quality increases relative to the level of funding supplementation. For example, in its submission to the Panel, the University of New England estimated that a 5 per cent increase in base funding would allow a 10 per cent increase in academic staff resources (submission no. 144, p. 5).

4.1.1 Incentives for lifting quality

The Panel believes there are grounds for strengthening incentives to lift teaching quality. For the potential of increased funding to be realised, the additional resources must bring about improvements in areas that relate directly to academic staff involvement with students. As noted previously, the best predictors of educational gain are said to be class size, level of student effort and engagement, who undertakes the teaching and the quantity and quality of feedback to students on their work (Gibbs 2010, p. 5). Whether a university works to enhance these elements will be driven by the priority it gives to the provision of quality teaching and the availability of suitably qualified staff.

As emphasised by many commentators, there is a perception that universities continue to undervalue teaching as an activity. Australian debate on the balance of effort by universities on teaching and research activities, and on whether too much effort and importance have been placed on research activities at the expense of teaching, reflects the debate in other countries. Emeritus Professor Frank Larkins (2011) has highlighted the rapid rise in expenditure on research at Australian universities, and Lawrence Cram (submission no. 103) argued that the last 20 years have seen a disproportionate amount of expenditure on research compared with teaching.

4.1.2 Options for providing funding for quality

If the Government were to allocate additional funding designed to improve the quality of teaching only through base funding, it would be up to universities to determine whether to direct it towards teaching activities. The Government would not necessarily achieve its objective of improving the quality of teaching in the higher education system just by increasing base funding.

The Panel has concluded that addressing risks around teaching quality depends on the way funding is used as much as the level of funding provided. As the core purpose of base funding is to support universities in providing teaching and learning to a given level of quality, theoretically the Government could consider making the provision of base funding conditional on universities achieving high-quality teaching and learning outcomes. The use of teaching outcome measures for base funding could link funding to achieving good outcomes that in turn require a certain level of expenditure and efficiency. Such an approach could involve retaining a proportion of base

funding to be allocated on the basis of an outcome measure, such as student satisfaction or student retention levels.

This option of using teaching quality outcome measures is problematic, and would present risks. Given the quantum of base funding, if a significant portion was to be allocated on the basis of achieving a particular outcome, the cost to institutions of failing to meet the performance measure could be considerable. To have this level of uncertainty in the base funding system would hamper an institution's capacity for long-term planning. It would also be counterproductive in terms of achieving the stated policy objective in the longer term because the institutions considered most in need of improvement (according to the indicator) would receive reduced funding to make improvements. A model of rewarding institutional improvement rather than attainment as measured by a performance indicator would be fairer.

A second and related issue would be the increased complexity that funding on the basis of outcomes would add to the base funding system. The Panel is concerned that the base funding system should remain as simple and transparent as possible. To this end, the Panel is wary of attempts to tie base funding to outcome measures that would inevitably make the system more complex and involve more compliance costs. Such measures would also have the potential to create perverse incentives for institutions to behave in certain ways to ensure that they 'deliver' in terms of meeting a narrow indicator rather than achieving the broader goal of raising institutional performance.

Perhaps the most compelling disadvantage of these types of funding measures would be the notion of linking base funding to indicators of performance that are essentially imperfect. For instance, student satisfaction scores on their own, while a useful indicator when supplemented with other information, are not robust enough to use for the allocation of base funding.

The Panel therefore supports the approach of using targeted performance-based funding alongside a core base funding model that remains simple and transparent.

4.2 Performance Funding for retention and completions

The Panel believes that quality teaching should be advanced through Performance Funding, using a range of quality measures, and that the Compacts developed between the Government and individual universities are a suitable vehicle to deliver the desired outcomes. In determining measures for such a scheme it is necessary that they should be credible, consistent and agreed by the sector.

The Performance Funding program is currently implemented with targets for quality, student experience, participation and equity objectives. The measures used for quality will be similar to those discussed in Chapter 2 in relation to Australia's international performance. These measures are useful for benchmarking the Australian system. However, while they demonstrate the quality and equity of the system, they do not show its efficacy in producing graduates.

An important indicator of the efficiency and productivity of expenditure on university teaching and learning is the percentage of students who complete their courses and the time taken to do so. Student retention, progression and graduation rates are key indicators of the efficiency and effectiveness of the higher education system.

This issue is important in terms of public policy and expenditure. For example, data in the United States measures comparative cost to graduation as a measure of efficiency in producing graduates (Desrocher and Wellman, 2011). In simple terms, the aim of higher education is not just participation but attainment. Some economic theories of public and private benefits may allow that some benefit

is gained from each year of education. The Panel's view is that the completion of an award course counts most. The investment in students who commence but do not complete their courses has not been realised. These statistics also have an important individual dimension because each failure to reach graduation may be associated with shattered aspirations accompanying a substantial student debt.

The time taken to complete a course is also of importance. While in Australia the direct expenditure in a course does not change if it is taken over a longer or shorter period of time, there are broader economic impacts on public and private benefits. As will be discussed later, the public and private benefits of higher education are affected by foregone tax revenues and wages respectively. The longer a person is out of the workforce the lower both public and private benefits.

Retention and completions are always important but will take on new significance under the policy settings from 2012. The demand driven system of undergraduate student places provides universities with the flexibility to set their own targets for enrolling students and the attainment target will encourage them to set growth targets for the short and medium term. It is likely that the increasing numbers of students in higher education will involve universities taking new cohorts of students who are less academically prepared.

Low entrance rank is associated with higher levels of attrition. For example, regression analysis conducted for the Panel shows an increase in the probability of attrition for lower entrance ranks (Table 4.1).

Table 4.1: Probability of first-year attrition based on student ATAR, 2005–2008

ATAR	Probability of attrition (%)
30–60	25.9
61–70	20.1
71–80	15.2
81–90	10.5
91–100	5.9

Source: DEEWR administrative data based on Commonwealth Higher Education Student Support Numbers (CHESSN).

The impact of enrolling increasing numbers of students with lower entrance ranks may be a decrease in the retention and completion rates unless the focus is put on improving the outcomes for these students. The consequence of not taking action will be damage to the aspirations of many young Australians and a higher cost to meet the attainment target.

For these reasons the Panel believes that the Government should add a direct focus on efficacy through retention and completion rates in the measures for Performance Funding. Improving quality and the student experience should improve retention and completion rates and affect a range of performance targets, and also impact on success in achieving the Government's attainment target.

4.2.1 Retention rates

The retention rate measures the percentage of students enrolled in one year who are enrolled in the subsequent year.[13] The retention rate illustrates, *inter alia*, university efforts to recruit and retain students. On this measure, Australian institutions appear to have maintained, and even improved, productivity despite fluctuations in the level of base funding per student.

It appears that Australian universities perform well on retention and attrition rates in comparison with other countries, although international comparisons of retention and attrition are very difficult to make due to methodological differences in the data. A recent study found that Australia had performed well in comparison to the United Kingdom and the United States (Van Stolk et al 2007).

Analysis of retention rates must always be tempered by the recognition that at any time the decision to leave university is partly a reflection of personal factors, domestic stability and financial security, not to mention individual application and effort. The usual published student data shows attrition or retention based on the level of students enrolling at their university for a second year. Average retention rates of 80 per cent have been recorded since 2001, with a slight improvement in recent years. The retention rates in 2008 and 2009 were 81.87 and 81.53 per cent respectively (Figure 4.1).

The data has always been qualified and not considered entirely reliable because students who transferred to another university or re-enrolled after an interval were not included.

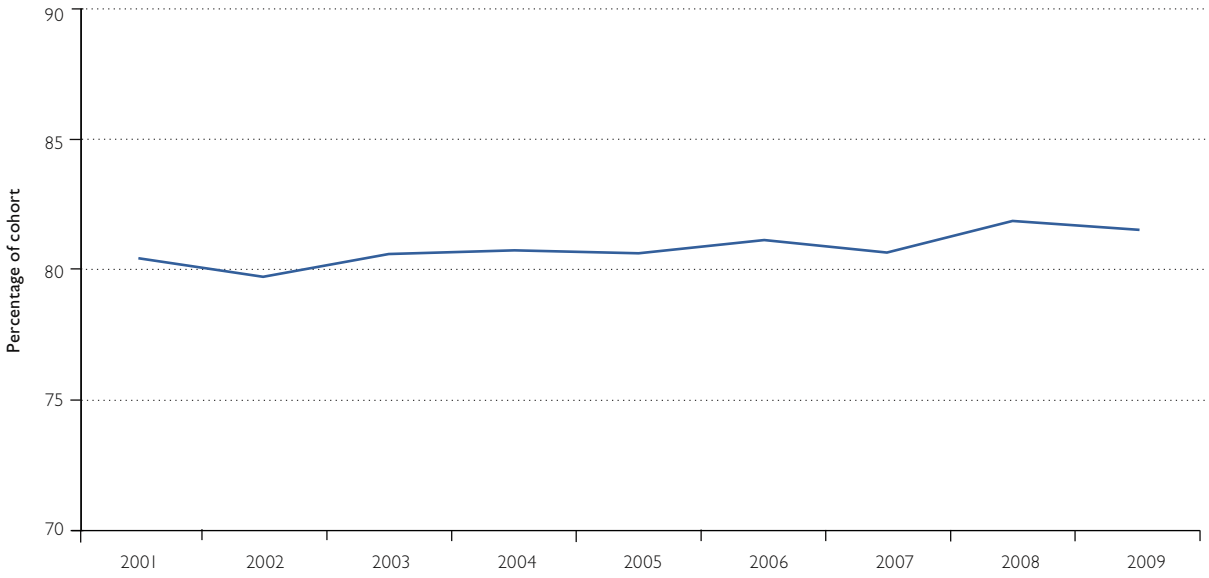
Commonwealth Higher Education Student Support Number data

The Panel understands that in the past retention and completions data has had its limitations and been contested, but the unique student identifier, the Commonwealth Higher Education Student Support Number (CHESSN), will allow measurements that are more practicable and robust.

The CHESSN data, which has been collected since 2005, captures most undergraduate domestic students and is highly accurate, being based on unique individual identification related to enrolment in a Commonwealth supported place or receipt of an income contingent loan. The data collection was originally instigated as a vehicle for monitoring student learning entitlements and tracking student debt. The Panel was able to interrogate the material in a way that gave a more detailed picture of student achievement.

13 Students completing a course and not continuing on to another course are not included in the calculation of retention rates. Attrition measures those who are not enrolled the following year; attrition rates are generally applied to commencing students.

Figure 4.1: Retention rate for commencing domestic undergraduate students in their original institution, 2001–2009

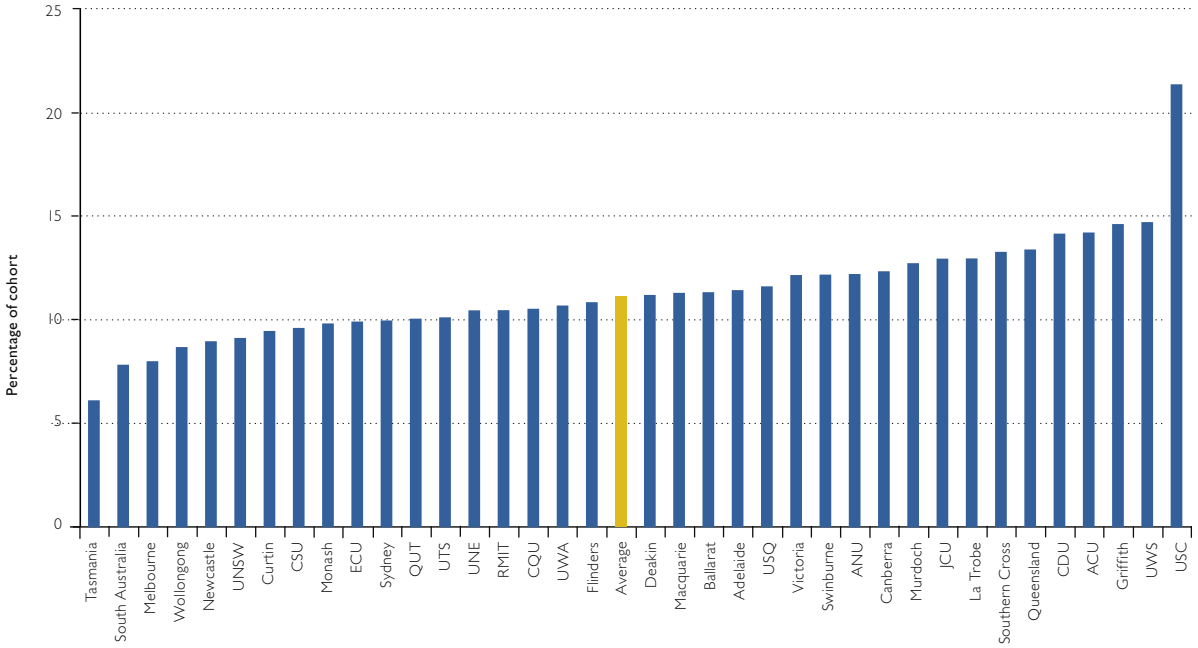


Source: DEEWR administrative data.

Pleasingly, the data shows that rates of students remaining in higher education are higher than was recorded by individual university data, since many students are found to be re-enrolling at a different university in second or subsequent years. Using the CHESSN for the 2005 first-year cohort, the rate of students returning for study in 2006 or a later year was 90.8 per cent. This rate of less than 10 per cent is much lower than the standard attrition rate.

The difference in the two figures is partly explained by the students, approximately 11 per cent nationwide, who changed providers some time after the first year of study (Figure 4.2). This level of mobility could be expected to be a reflection of some regional and metropolitan providers offering a supportive initial higher education experience for students and in some instances strategically preparing students for study in specific disciplines in inner-city universities. During consultations, most metropolitan universities claimed to be only recipients in the flow of transferring students, the data shows that students move from all universities and not just the so-called 'feeder' institutions. There was a consistent view in the sector that the university that most contributed to the students' success was the one that provided first-year support and that it would be unfair if only the graduating university were rewarded with Performance Funding.

Figure 4.2: Proportion of the 2005 commencing undergraduate student cohort enrolling in a different university, by original university of enrolment, 2010



Note: 'Average' is average of all students across all universities.

Source: DEEWR administrative data based on Commonwealth Higher Education Student Support Numbers.

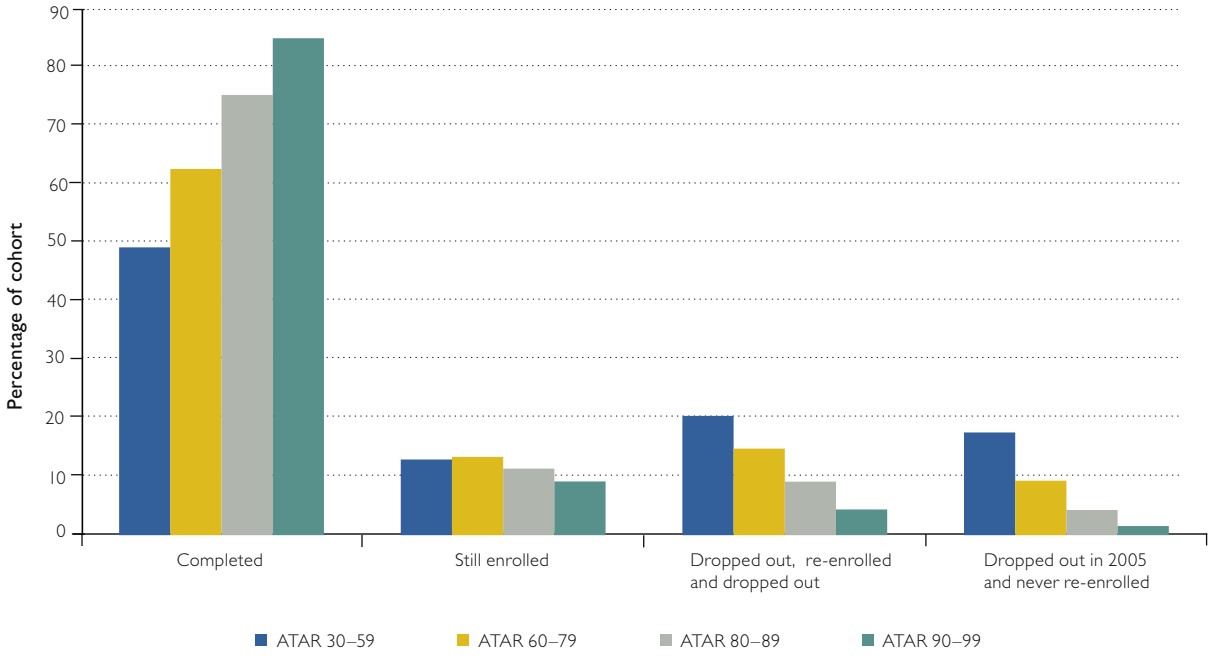
4.2.2 Completions

Despite the importance of completions in establishing university efficiency, it has been difficult to establish a reliable measurement of the rate at which students have completed their courses. It has only been possible to use aggregate figures but this only indicates the raw numbers who have graduated rather than the rate at which this is being achieved. The best method has been a cohort analysis but this has been frustrated by the transfer of students between institutions. The longitudinal CHESSN data provides the opportunity for a proper cohort analysis, tracking students over time and across institutions.

The Panel examined the first cohort of Commonwealth supported undergraduate students with a CHESSN who commenced in 2005. Analysis of this cohort showed that by 2010, 66.9 per cent had completed their course. Interestingly, 7.4 per cent of those who had completed a course did so at a provider different from their first-year enrolment. Perhaps most significantly, the CHESSN cohort data shows the positive correlation between entrance scores and continued progression after second year and eventual completion (Figure 4.3).

It is not possible to provide a time series for this analysis at present as a significant share of the subsequent cohorts of students are either still studying or may return to university. Nevertheless, the data allows us to make some robust conclusions. For instance, approximately 78 per cent of students had either completed their studies or were still enrolled. Less than 10 per cent of all students dropped out after undertaking first year of study and never returned to university.

Figure 4.3: Retention, completions, second-year progress by ATAR, 2005 commencing undergraduate student cohort, as at 2010



Source: DEEWR administrative data based on Commonwealth Higher Education Student Support Numbers (CHESSN).

4.2.3 New performance measures for retention and completions

The expected enrolment growth in response to government targets and the demand driven system from 2012 is likely to lead to an increase in the numbers of less well prepared students, who may be at greater risk of attrition. The evidence from research and the CHESSN data (Table 4.1 and Figure 4.3) is that retention and completions are strongly correlated with entrance ranking. If universities enrol more students with lower Australian Tertiary Admission Ranks (ATARs), there is a clear risk that retention and completion rates will decline. This lowers the effectiveness of the investment in higher education and is damaging for students. There is little doubt that there is an increasing focus on retention in the sector and awareness that first-year retention is critical in improving graduation rates.

Given the importance of completions, and the reliable nature of CHESSN data, this data should be used to provide ongoing analysis of completion performance at the sectoral and institutional level, taking into account student background.

Engagement measures, student satisfaction data and attendance records constitute markers of risk of attrition and in some instances could be used as early warnings and triggers for intervention. However, the Panel recognises that maintaining quality standards would always limit levels of retention and some universities already, by the nature of their institutional enrolment pattern of higher ATARs, have lower attrition levels.

The CHESSN data that is presently available for the period 2005–2010 provide a credible basis for the Panel to recommend using retention and completion as measures for Performance Funding. The Panel recommends that the Government should develop a reward system to deliver incentives to improve graduation rates and retention levels in a way that supports the provider of each year of attainment, noting that the institution responsible for the first year of study may have invested the most resources in a student's success.

4.3 Base funding to support excellence in teaching and learning: flagships

The terms of reference asked the Panel to make recommendations on a funding model that would give all institutions a strong incentive to focus on investing in and delivering high-quality teaching as well as maintaining strong academic standards.

Base funding is provided to universities on a uniform basis to enable them to meet the reasonable costs associated with delivering higher education courses. The Panel considers this to be the appropriate goal of the core base funding system that is supported by public funding as well as substantial contributions by students themselves.

However, uniform levels of funding may restrict the potential for innovation in teaching and learning at the institutional level. Some innovative programs will inevitably involve higher costs and universities should be encouraged to develop excellence in their approaches to teaching and learning. Therefore, the Panel has considered options for providing institutions with the flexibility to deliver innovative courses at above-average costs.

The Panel suggests that the Government should permit all institutions to offer students access to undergraduate or postgraduate courses of study that are funded up to a maximum of 50 per cent more than the current rate for the discipline, to a limit of 5 per cent of each institution's total Commonwealth funded domestic student places. The additional cost would be met through a matched increase in both government and student contributions. These 'flagship' courses would enable institutions to diversify course offerings, and provide exceptional and high-calibre courses.

Flagship courses could be provided at the undergraduate or postgraduate level and could, for example, include research-intensive undergraduate programs designed for high-achieving school leavers; courses involving a prestigious international experience; or clinically based forms of work-integrated learning (WIL) with especially low student–staff ratios. Providing institutions with the opportunity to develop flagship courses funded at up to 150 per cent of the regular rate is a significant departure from current arrangements. The Government would need to monitor and review this initiative closely for its effectiveness from its inception to safeguard the public interest.

Given the high level of investment required, the Panel considered requiring approval for these courses, but felt that this was contrary to the view that universities should have autonomy in the use of base funding. However, the Government should work with the sector to develop the criteria and guidelines for this program.

Should the Government adopt this proposal, it would be appropriate to provide institutional certainty in planning the development of these courses by offering funding support for, say, at least five years. The Panel also recommends that an evaluation program be developed in consultation with the sector to monitor the outcomes of the initiative.

4.4 Base funding to support research and scholarship for quality teaching

As mentioned earlier, there is debate in Australia on whether too much effort and importance has been invested in research activities at the expense of teaching. It would be possible to fund either scholarship or research, or both, separately from teaching within base funding. However, the funding of these activities separately would not necessarily mean constraining how the funding

is used. Separate funding streams within base funding could be used by universities according to their own priorities, as with existing Commonwealth Grant Scheme Enabling, Regional and Medical student loadings.

Funding teaching, scholarship and research together using a single measure, as in the current base funding system, requires using a proxy cost driver as a way of reflecting the costs faced by universities in undertaking the three activities. Weighted student load performs the role of cost driver in the current system. The number of student places weighted by discipline indicates the relative size and profile of each institution and is a reasonable basis on which to estimate its costs. The attraction of having separate funding mechanisms for teaching, scholarship or base research would be the opportunity to allocate funding based on the actual costs of each activity.

4.4.1 History of residual quantum of research funding in base funding

It is important to see funding for research as more than a possible loading. To appreciate the nature and reasonable level of research that could be supported by base funding, it is necessary to understand the evolution of the so-called Research Quantum within the Relative Funding Model (RFM). The funding arrangements for universities under the RFM from 1990 until 2001 included the Research Quantum, which was initially set at about 6 per cent of Operating Grants 'to support research activities other than those directly linked to teaching and research training'. It was understood that the Research Quantum was not the maximum proportion of Operating Grants that could be used for research. From 2001 the Research Quantum was rolled into the competitive research grants. However, and in keeping with their status as autonomous institutions, it was understood that universities could direct some base funding or general revenue to research activities as well.

Government policy documents and guidelines are largely silent about universities' use of base funding to support research. However, the use of base funding for this purpose in instances such as the *Higher Education Funding Report for the 1998–2000 Triennium* is implicitly accepted. This report showed Operating Grants as being one of the sources available for university research (DEETYA 1997, p. 106).

At present, government funding for research conducted by universities is provided through grants and other sources administered by the Australian Research Council, the Department of Innovation, Industry, Science and Research, and the National Health and Medical Research Council, as well as from general revenue. There is some interdependency between these sources of funding but Australian competitive research grants cannot be used to fund the salaries of chief and principal investigators, infrastructure and capital equipment and items such as telecommunication, travel and accommodation expenses and it is assumed that they will be funded from university sources other than the grants themselves.

As a result, base funding contributes through general revenue to maintaining the capability that is needed for grant-supported research as well as supporting other research such as that of staff at an early stage of their career which is solely funded from general university funds. By common usage the sector tends to class anything not funded by competitive grants as 'unfunded' research. The Australian Bureau of Statistics has estimated that 52 per cent of university expenditure on research and development comes from general university funds, which includes base funding (2010).

As the *National Protocols for Higher Education Approval Processes* (National Protocols) specify that universities should engage in scholarship and research, there is a view that base funding should cover the costs of all 'unfunded' research. However, the Panel has concluded that not all of the current

volume of 'unfunded' research activity is necessary to support and inform teaching. Clearly the extent of any university's research activity depends on institutional decisions and university revenue that is received from diverse sources.

4.4.2 Scholarship

Scholarship provides academic staff with the up-to-date knowledge to support their teaching, and as such is a non-discretionary element of university teaching and learning. It has not been funded separately, and has not been treated to measures such as 'roll-ins' or separate funding pools. It is assumed to be part of teaching, and so was not treated separately in the costing study, which collected expenditure data on either 'teaching and scholarship' or teaching, scholarship and 'unfunded' research.

There was no support in the submissions for scholarship being funded separately from teaching, and those that mentioned scholarship supported the continued use of base funding for this activity. For instance, the submission provided by the Innovative Research Universities agreed with the Panel's Consultation Paper that 'scholarship is critical to the role of universities and their staff such that it should be supported by the base funding' and recommended that 'this should be extended to explicit recognition that base funding covers the employment of academic staff whose role covers teaching and learning, research, and scholarship' (submission no. 116, p. 4).

The Panel recognises that universities are required to conduct teaching and learning informed by scholarship and research. Universities employ staff engaged in variable quantities of research but have industrial agreements defining the time, generally 15 per cent, that they should engage in scholarship in association with their teaching load. The Panel saw no virtue in further complicating base funding by attempting to delineate a portion of base funding for scholarship in this way. The Panel considers that separating scholarship funding from teaching funding would make a difference only if universities were required to use teaching funding only for that purpose. The Panel does not support restriction of this sort on university autonomy. It would be unnecessarily complex and, furthermore, the Panel believes it would break the nexus between teaching and scholarship.

4.4.3 Base funding to support base research capability

The Panel has supported the need to fund some research activity from base funding since it is a required function of a university as defined in the National Protocols (see Chapter 1). Furthermore, the Panel recognises that universities have diverse sources of income and make decisions about the extent of research activity based on institutional priorities and general resources.

Research activities in universities are funded through a range of government programs as well as external sources. Government research programs are administered separately from base funding although some of them, including the Institutional Grants Scheme (now replaced by the Joint Research Engagement Program) and the Research Training Scheme were originally part of each university's block Operating Grant. The increase in indirect research funding provided under the Sustainable Research Excellence program will be $300 million per annum indexed, from 2013. This will exceed the equivalent of 4 per cent of base funding in current terms. This funding should reduce the level of so-called 'unfunded' research supported from general revenue.

Most submissions provided to the Panel, including those from student organisations, agreed that it is appropriate to continue to fund base capability in research within the single funding source of base funding. It was also frequently noted that the current funding arrangements for universities make

cross-subsidisation of research a necessity. For instance, the submission provided by the University of South Australia argued that:

> A decoupling of base funding from supporting research would be counterproductive to the teaching-research nexus, and would also likely create more administrative and compliance costs associated with managing another separate funding stream or acquittal process (submission no. 138, p. 8).

A number of submissions also noted that the current base funding arrangements allow universities to develop new areas of research specialisation, something which is particularly important for the more recently established universities.

The University of Tasmania and The University of Western Australia advocated a separation between funding for base research capability and funding for teaching and learning. The University of Western Australia argued that the current system where universities receive approximately the same per student level of base funding regardless of actual research activity or the quality of this research, represents a poor use of funds as it does not direct funding to where it will be used most effectively and encourages low-quality research.

Based on the evidence of the costing study and the historical level of the Research Quantum in the original Operating Grant, it could be argued that something in the order of 6 to 10 per cent of base funding could reasonably be associated with activities relating to maintenance of base research capability. This quantum could: (a) continue to be distributed on the basis of weighted student load or (b) be directed according to a measure (or set of measures) of research activity.

The Panel suggests that the Government should consider the relative merits of these two alternative approaches.

4.4.4 Adjusting funding for non-university providers not required to undertake research

The Panel recognises that the Government currently provides funding under the Commonwealth Grant Scheme to support the delivery of approved higher education courses that are delivered by providers that are not publicly funded universities. Such courses are usually funded to alleviate skill shortages in critical areas such as nursing and early childhood education. The Panel supports the use of Commonwealth Grant Scheme funding for such purposes but notes that the institutions providing the courses are not required to engage in research. It would therefore be reasonable for the Government to fund such courses at a discounted rate of up to 10 per cent (in respect of both student and government contributions).

4.5 Base funding to support infrastructure for quality teaching

In the previous chapter the costs of infrastructure were highlighted as one of the pressures faced by universities. Base funding contains a notional amount per place for infrastructure. However, recently there has been significant government funding for infrastructure through the Education Investment Fund and a number of one-off funding rounds. Despite this, ongoing issues exist around backlog maintenance and refurbishment needs. The growth to meet the attainment target suggests there also needs to be increased expenditure on university infrastructure to accommodate additional students.

4.5.1 The capital component of base funding

Since 1994, base funding has included a notional amount to meet the costs of infrastructure. The Capital Roll-in was included in Operating Grants to give responsibility to institutions for determining the appropriate levels of expenditure on maintenance, rehabilitation and refurbishment of existing stock and balance these needs against demand for new capital requirements. In 2004, the last year it was explicitly identified, the Capital Roll-in component of the $4.8 billion of Operating Grants was $277 million, or 5.7 per cent of the total (DEET 1996).[14]

The roll-in has been treated as a fixed amount per place. From 1995 the funding of additional student places included a fixed per equivalent full-time student load (EFTSL) capital funding component ($611 per EFTSL). The Operating Grant included HECS payments at the time, so this proportion of funding for a student place should be viewed in contemporary terms as the proportion of combined CGS and HECS–HELP payments to universities. The method by which the capital component operates means that every extra funded place has some notional capital funding.

The original intention of the Capital Roll-in was to meet universities' maintenance, rehabilitation and refurbishment capital needs, and the commitment has been supplemented by the use of periodic allocations of special capital funding. For example, the sector has seen recent capital injections through the Better Universities Renewal Fund (BURF) provided for campus renewal, to improve higher education institutions' infrastructure for teaching, learning and research and for improved student amenities. This suggests that the sector will not achieve ongoing sustainability for its capital needs and that allocations based on student load alone will always require periodic injections of additional capital funding.

Several submissions provided to the Panel by universities and the sector's peak bodies supported the continued 'roll-in' of funding for capital in base funding. Many of these submissions also argued that the current level of base funding is insufficient to meet capital costs. Universities Australia stated that 'both the capital costs and the operating costs of general infrastructure need to be accounted for in base funding' and identified a need for additional capital investment (submission no. 130, p. 18). Similarly, the Group of Eight (2011) argued that 'base funding should include a more realistic level of capital funding to support infrastructure needs' (p.17). Submissions from individual universities also supported the continued Capital Roll-in, though Charles Darwin University suggested that funding for infrastructure 'should be an identified value, as opposed to an unidentified roll-in' (submission no. 36, p. 10).

4.5.2 Other government funding for infrastructure

The last five years have seen unprecedented amounts of special infrastructure funding for the higher education sector. This was made possible by the Government's one-off investments of $500 million in 2008 through the BURF, over $1.084 billion from the Education Investment Fund (EIF), as well as $500 million committed to the EIF Regional Priorities Round in 2011. World-class infrastructure is being built across the university sector and there has been some much needed refurbishment of outdated buildings. This funding has been mainly competitive by nature and its focus has been on large 'transformational' initiatives.

However, the Capital Roll-in will again become the main source of capital funding from government in the next few years as the Capital Development Pool (CDP) program will cease from January 2012. While the Government has announced it will allocate a further $500 million from EIF over the next

14 Prices are in 1996 dollars.

five years to the tertiary sector via the Regional Priorities Round, it has not announced its intentions beyond this point. The termination of the CDP will also result in the sector having to rely more heavily on operating revenues to fund significant refurbishments and other moderately sized capital works.

Several submissions expressed concern about the termination of the CDP, and the Panel notes that the Bradley Review recommended its continuation. The Tertiary Education Facilities Management Association (TEFMA) notes that the EIF has addressed a number of immediate infrastructure needs. However, the majority of EIF funding has been directed towards the creation of new infrastructure rather than towards the renewal of existing facilities, and this was a major concern of universities in the Panel's consultations. Much of the need is for refurbishing existing buildings so as to allow ongoing use and make them 'fit for purpose'. Consequently 'a program of ongoing investment is necessary to progressively renew the aging infrastructure to more effectively support the academic enterprise in the 21st century' (TEFMA 2011, p.3).

The recent injections of capital funding have predominantly focused on renewing infrastructure and meeting current capital needs. Some universities continue to have high levels of backlog maintenance and much of the building stock requires refurbishment or technology and equipment upgrades. The maintenance backlog is estimated to be $2 billion to $3 billion across the sector, although there is significant variation among universities.

4.5.3 The level of capital funding for a growing system

The demand driven system for undergraduate student places is expected to put increasing pressure on university infrastructure. While there will be some existing capacity in the sector to absorb the increase, if government targets are to be met a significant investment in infrastructure will be needed over the next 10 to 15 years. Under current policy settings, the only funding available to the growing system will be the Capital Roll-in component of base funding, which, using the notional 5.7 per cent from 2004, would be valued at approximately $450 million in 2010.

In its submission to the Panel, Universities Australia (quoting Somogyi 2011) suggested an additional capital investment of $35 billion will be required by 2025 to meet participation requirements. This figure appears excessive as it is roughly equivalent to the current total assets replacement value of infrastructure across the sector. The estimate also makes no allowance for more efficient use of existing space and appears to effectively include the construction of new space for every additional enrolment.

Some universities will be able to increase in size using existing capital. However, the adequacy of capital funding should be judged from the perspective of universities' long-term capital needs. Generally, around the world the floor area per EFTSL is tending to fall and changes in patterns of use of buildings may allow enrolment growth without a pro rata change in useable floor area. Existing building stock may not be located in areas of demand but more efficient use of infrastructure is possible.

There is no doubt that universities will need additional infrastructure over the next decade. However, if funding from the Government is needed for new infrastructure, it is not clear that this could or should be through base funding and the Capital Roll-in. Increasing the Capital Roll-in would lock the additional funding into recurrent funding, which might be somewhat inflexible if it proved unnecessary in the long term. For these reasons the Panel concluded that an increase in the Capital Roll-in in base funding is not the right mechanisms for funding additional infrastructure needed to meet attainment targets.

The Panel recognises that there may be a timing issue in using existing levels of Capital Roll-in to support growth where it is occurring. The new infrastructure needs to be built now, but the aggregate Capital Roll-in amount only grows with the additional students enrolled in the future. This may not necessarily be a problem. Borrowing to fund capital expenditure is a standard business practice. Traditionally universities have low levels of borrowings and have instead used retained profits to pay for new infrastructure. The solution to funding new infrastructure may be to increase borrowings that will be repaid through the Capital Roll-in amounts from future additional places.

4.5.4 Additional capital funding

The additional funding for growth being identified by universities is beyond any reasonable expectation of government investment in the short term, and in any case is clearly outside the capacity of base funding. The Panel believed that the most compelling case for support was made regarding the dramatic change in appearance of contemporary universities and the patchy nature of these improvements in Australia.

The issue of the unprecedented changes in patterns of use and design within universities over the last two decades seems indisputable. The Panel was persuaded of the pressure for contemporary learning spaces, and noted the extended operating hours within libraries and learning areas, the ubiquity of wireless internet access, and the trend towards collaborative group learning spaces and hubs. The Panel believes that the current level of the Capital Roll-in is insufficient to allow universities to make these changes.

The Panel also believes that a focus on refurbishment has the potential to lessen the need for additional infrastructure by making better use of existing stock. TEFMA notes that:

> The renewal of the capital infrastructure would improve the functionality and utilisation of existing space, enabling its alignment with the changing expectations of students and new methods of learning, as well as enhancing the environmental efficiency of the buildings and the indoor environmental quality, all of which will potentially lead to enhanced productivity and improved academic outcomes (TEFMA 2011).

Refurbishment is a targeted and effective way to address the need for additional space. Therefore, the Government should provide infrastructure funding to universities to ensure their facilities are fit for 21st century teaching and learning and are used more efficiently. An amount equivalent to 2 per cent of the CGS base allocation should be provided for this purpose. The additional funding will provide ongoing capital support and greater capacity to develop contemporary learning spaces and more efficient use of existing infrastructure. The Government should allocate additional funding for this purpose.

BURF funding was allocated on the basis of student load and universities nominated projects for approval by the Government. The Panel believes that allocation based on student load would remove the uncertainty and burden of contestable funding and reinforce university autonomy. However, it would be important to ensure that the additional funding was focused on maintenance, refurbishment and contemporary learning spaces.

4.6 Funding for clinical placements and teaching practicums

Education and health have long included work-integrated learning (WIL) through practicums and clinical placements. As described the previous chapter, other disciplines are increasingly utilising WIL, often as a requirement for professional accreditation driven by professional bodies. These reforms reflect the global trend towards improved job-readiness for graduates.

From 2005 the CGS funding cluster rates for nursing and education units of study have included amounts in recognition of the costs of nursing clinical placements and teaching practicum ($1,126 and $773 per EFTSL respectively in 2011), and universities are required under their funding agreements to use these amounts only for such placements and practicums. Universities enrolling medical students receive a Medical Loading of around $1,198 per place under the *Higher Education Support Act 2003*.

In contrast, other university courses do not have WIL funding included in CGS amounts, and no Commonwealth funding is specifically allocated for WIL/work experience in industry units. The Panel believes that this could be addressed through a mode of teaching model for distributing base funding, as discussed in the previous chapter.

4.6.1 Nursing and medical clinical training

Universities have traditionally relied on goodwill and partnerships with organisations to provide clinical placements. However, increasingly universities are being charged a fee by providers. The Council of Deans of Nursing and Midwifery indicated that some large private health care providers are now charging $10 per hour for each nursing student undertaking a clinical placement at one of their facilities (submission no. 124).

A number of submissions argued that current funding arrangements for medical education in clinical practice are unsustainable. In consultations, the sector highlighted the recent Health Workforce Australia (HWA) initiative of providing financial support for growth in clinical placements as a significant risk. Their concern was that this funding would have the impact of setting a precedent for all health providers to charge for all clinical placements, and would undermine current pro bono arrangements and in-kind agreements with state and territory governments. The HWA initiative, announced by the Council of Australian Governments (COAG) in November 2008, committed $1.6 billion from the Commonwealth, and $0.5 billion from the states and territories for health workforce reform. For undergraduate clinical training, HWA provides subsidies to health care providers to help with the cost of placing and training students in 'growth' places.

The sector is concerned that the HWA subsidy had established a higher benchmark cost to be charged by all providers for all clinical placements, not just the additional 'growth' places. If this were to eventuate it would add significantly to clinical costs for universities. Historically, the majority of clinical places have been provided pro bono to universities (often through agreement between Commonwealth, state and territory governments). It may be too early to assess the impact of the HWA funding, but the Panel notes the sector's concerns as to these possible unintended consequences of the initiative.

The scale of the potential problem can be illustrated using the case of medical studies at James Cook University (JCU). Through the HWA initiative, $192 is available for each student per placement day. In 2010, JCU medical students utilised 31,842 placement days. If all days were paid for at the HWA 'growth' rate, the total bill would be about $6.1 million, or $2.9 million more than currently

being paid (submission no. 106, Attachment A, p. 31). In its submission to the Panel, the Medical Deans of Australia and New Zealand (MDANZ) drew attention to the new activity-based funding model being implemented in the health sector (submission no. 26, p. 28). This development may result in increased scrutiny of costs by the independent Hospital Pricing Authority and may lead to universities being charged for clinical placements. It noted that in Victoria public hospitals now charge universities for all clinical costs.

The various pressures in clinical education led the MDANZ to conclude that:

> The funding of clinical education in medicine is at a tipping point. There has been a lack of investment by governments in clinical education staffing and infrastructure to meet the doubling of medical students over the past decade. Without a sustainable funding model for existing clinical education services, medical schools will not be able to continue to innovate and transform clinical education into the future (submission no. 26, p. 36).

The available evidence related to international comparisons of the costs of teaching medicine, dentistry and veterinary science were presented in the previous chapter and indicate that by comparison Australian funding levels are below the international benchmarks.

4.6.2 Costs of health and education practicums and COAG

During its consultations, the Panel noted jurisdictional variation in charging practice between state and territory systems in health and education. Funding for WIL in health is variably supported through some government and non-government health system budgets. In some cases teaching practicums within the non-government system are supported by associated school systems. The range of Commonwealth, state and territory government funding for clinical and practicum training lacks transparency and is further complicated by some students being sent across state borders.

Practicum/clinical loadings and the broader funding requirements for training teaching, allied health, nursing, dentistry and medical students involve complex Commonwealth–state responsibilities and multiple agencies in education and health. The Panel heard of inconsistencies of treatment between states and between institutions within a single state or territory health system.

In receiving the detailed arguments of the sector regarding the costs of these elements, the Panel considered that a detailed response to this issue was beyond the scope of the Review, and that this is an area that deserves specific consideration, including at COAG level. The system appears to be in urgent need of real reform at a national level.

The Panel does not believe that unlimited funds should underwrite these activities, especially as professional bodies are apparently unrestrained in mandating their requirements. The Panel therefore recommends that following consultation with state and territory governments, including within COAG, professional bodies and with Health Workforce Australia, the Australian Government should undertake a detailed assessment of the costs of health and education placements to ascertain the variety of arrangements across Australia, the roles of Australian governments in maintaining the relevant workforces and ways to avoid cost escalation.

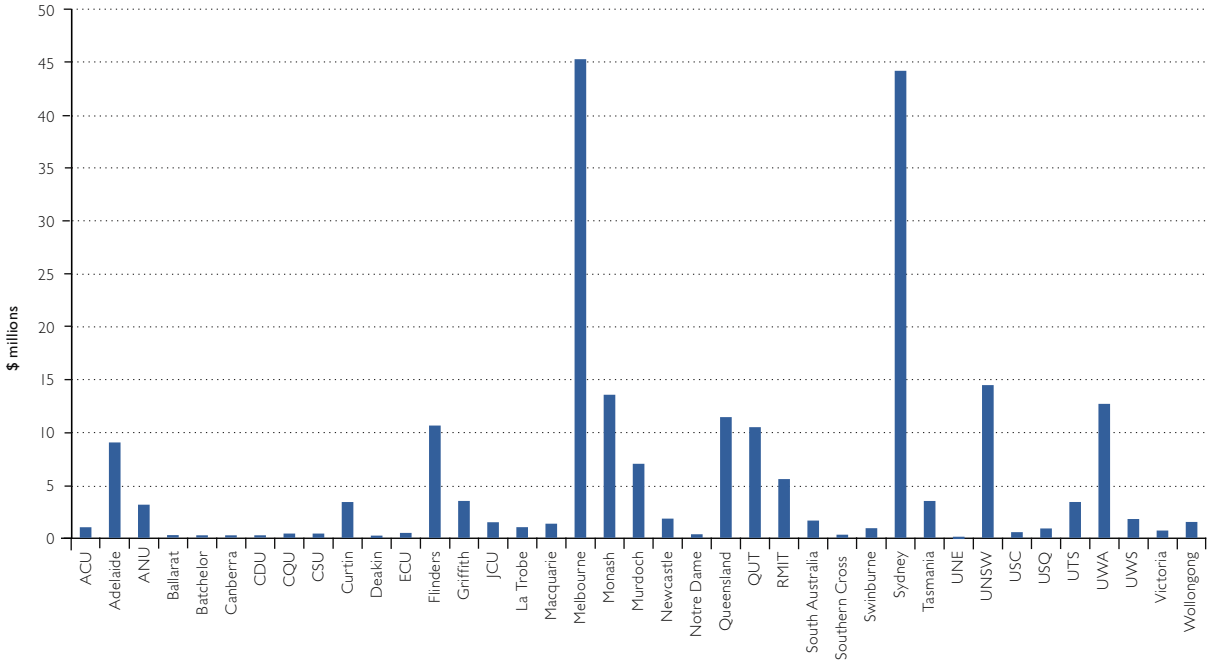
4.7 Other sources of university revenue: philanthropy

In contrast with some other countries, donations and bequests are only a minor source of income for the Australian higher education sector (representing 1 per cent of revenue in 2009). This income differs considerably between institutions (Figure 4.4), and tends to be highest in the older universities. In recent years, many institutions have been successful in increasing revenue from donations and bequests by investing resources in engaging with alumni, businesses and other potential donors. There are indications that this trend will continue but, given the low base, it is unlikely that donations and bequests will become significant sources of revenue for most Australian universities in the short term.

The Panel notes that many universities fund iconic infrastructure, and some research activity as well as areas of student support from non-government revenue and the Panel supports such uses of external funding. The same applies to the use of non-government revenue in general; universities should be encouraged to generate additional revenue to support more and better teaching, scholarship and research.

The Bradley Review recommended that the Government provide a total of $200 million over three years to match new philanthropic donations. Such an initiative remains a credible option to improve the capacity of universities to improve performance in this area, by offering a pool from which matching dollars would encourage new private donations. The Panel suggests the performance in this area could be improved by a smaller seed funding scheme to promote university endeavours.

Figure 4.4: Donations and bequests by university, 2010



Source: DEEWR 2011.

4.8 Summary and recommendations

Performance Funding

The provision of base funding should not be tied to outcome measures but should continue to be provided in a way that gives institutions the autonomy to allocate resources according to their own priorities within the broad purposes for which base funding is provided. The Panel considered that it was likely to be more effective for the Government to provide Performance Funding separately from the base using performance targets.

Recommendation 10: Performance Funding

Performance objectives to promote quality teaching should be funded separately from base funding using transparent indicators and assessment processes.

Funding for quality teaching

Performance Funding should be based on outcome measures agreed through negotiation with the sector and based on instruments that are reliable and consistent.

Recommendation 11: Funding for quality teaching

The Australian Government should continue to advance quality teaching in Australian universities through performance agreements such as the current Compacts using credible, consistent and agreed quality measures.

Measures of retention and completions in Performance Funding

The Panel believes that institutions should be rewarded for maintenance and improvement in their achievements in retention and completion rates. The presently available CHESSN data provides credible and consistent data that, following consultation with the sector, could be used as an important element of the Performance Funding framework. Such a framework must reflect and maintain standards, and be introduced in a manner that particularly acknowledges the efforts of those institutions where a student is enrolled during their first year.

Recommendation 12: Measures of retention and completions in Performance Funding

The Australian Government should include measures relating to student retention and completions in its Performance Funding framework for universities in a manner that acknowledges the provider of each year of student attainment.

Funding for flagship programs

The Panel proposes that all institutions should be supported to offer students access to innovative undergraduate and postgraduate coursework courses that may be funded up to 50 per cent more than the current rate for the discipline, to a limit of 5 per cent of an institution's total number of Commonwealth supported places. The additional costs of each unit would be met by up to 50 per cent increases in both government and student contributions.

Recommendation 13: Funding for flagship programs

The Australian Government should encourage institutions to develop outstanding programs that would be funded up to 50 per cent more than the standard base funding rate, by both government and student contributions according to the 40:60 ratio, to a limit of 5 per cent of each institution's total Commonwealth supported load.

Recommendation 14: Ongoing evaluation of flagships

In cooperation with the higher education sector, the Australian Government should evaluate institutions' flagship programs on a continuing basis to monitor their effectiveness in encouraging excellence and innovation as well as their impact on student participation and achievement.

Funding for base research capability

The Panel has stated its view that base funding supports a base capability in research and that it is appropriate that a component of base funding remains for this purpose. It has considered whether that portion of base funding should be allocated using a different mechanism to weighted student load.

Calculating how much research should be funded from base funding is difficult but the Panel does not believe that base funding should be expected to support all 'unfunded' research. Something in the order of 6 to 10 per cent of base funding could reasonably be associated with activities relating to maintenance of base research capability. This quantum could: (a) continue to be distributed on the basis of weighted student load, or (b) be directed according to a measure (or set of measures) of research activity.

Recommendation 15: Funding for base research capability

In determining the ongoing allocation of the proportion of base funding provided to universities to support base research capability, the Australian Government could choose to continue to allocate this proportion on the current basis using student load; or to distribute this proportion of base funding on a basis that reflects variations between the institutions' research outputs.

Adjusted funding for student places for non-university providers

Australian universities are required to engage in research to inform teaching so that where the Government chooses to fund non-university providers, funding should be at a lower rate in recognition that non-university providers are not required to undertake research.

Recommendation 16: Adjusted funding for non-university providers

Base funding should be adjusted by an amount of up to 10 per cent for non-university provision of higher education courses in recognition that these providers are not required to undertake research.

Funding for contemporary learning spaces

The Panel has identified high-quality infrastructure as fundamental to supporting quality teaching and learning, and expects that emerging infrastructure needs will be a major cost pressure in the future. It is also convinced by the evidence provided that the current funding for infrastructure is inadequate to meet these needs. The sector has a level of maintenance backlog and requirements for refurbishment as well as concerns related to the impact of increasing enrolments in the future.

The most compelling issue facing universities appeared to be the requirement for refurbishment to reflect demand for contemporary learning spaces. The Panel considers infrastructure costs for this purpose will exceed the amount currently provided in base funding, and believes that additional infrastructure funding should be allocated.

The Panel proposes funding in the order of 2 per cent of base funding to provide ongoing capital support and greater capacity to develop contemporary learning spaces. Additional funding should be allocated for this purpose. The Panel also recommends that when funds become available the provision for major infrastructure outside the base, through a program like the Capital Development Pool, should be reinstated.

Recommendation 17: Funding for contemporary learning spaces

Base funding should be complemented by an additional amount of approximately 2 per cent of base funding per annum distributed on the basis of weighted student load to support the provision of appropriately resourced facilities and to reflect the higher standard required of contemporary teaching and learning spaces.

Review of health and education placements

The Panel identified a lack of transparency with different clinical placement and practicum schemes operating within the public, private and not-for-profit sectors. Across jurisdictions there were differing fees, charges and arrangements that made it difficult to understand the costs and subsidies for health and education courses. The Panel recognised the cost pressures within this area but had insufficient information to suggest a funding mechanism to resolve the problems.

Recommendation 18: Review of health and education placements

Following consultation with state and territory governments, professional bodies, Health Workforce Australia and Council of Australian Governments, the Australian Government should undertake a detailed assessment of the costs of health and education placements within the range of arrangements across Australia, to define the roles of Australian governments and employers/industry in maintaining the relevant workforces and to identify ways to avoid cost escalation.

Encourage universities to pursue philanthropy

The Panel believes universities should continue to seek philanthropic revenue and believes if greater effort is made to engage with alumni, industry and business and other potential donors, the university sector will be rewarded with increases to revenue from donations and bequests.

Recommendation 19: Encourage universities to pursue philanthropy

The Australian Government should encourage universities to pursue philanthropic support by providing universities with seed funding to improve their capacity to attract donations.

Chapter 5: Sharing the investment

The Panel was asked to establish enduring principles to underpin public investment in higher education and to advise on the appropriate balance between the level of public and private contributions towards the cost of higher education. In particular, the Australian Government asked the Panel to recommend options for setting levels of student contributions for different disciplines and for undergraduate and approved postgraduate study.

In previous chapters, the Panel discussed evidence on the relative costs of undergraduate education for different disciplines and this showed that for some courses base funding was lower than the cost of delivery. The Panel has recommended that the Government address these funding issues and in the future review the basis on which units of study are classified to better reflect the real costs of different modes of teaching. In this chapter, the Panel examines evidence on the public and private benefits (or returns) from higher education courses with a view to recommending a more rational and consistent basis for determining the respective contributions from government and students. A detailed description of some of the terms used in this chapter can be found in the Technical Notes for Chapter 5 (Appendix 1).

In considering the best way to share the costs of higher education, the Panel considered alternatives to Australia's income-contingent student loans scheme; the level of Australian student contributions by international standards; and the balance of public and private benefits from higher education.

5.1 Australia's income-contingent loan scheme

In 1989, Australia was the first country to introduce a system of income-contingent loans to assist students to pay their university tuition fees through the Higher Education Contribution Scheme (HECS) and from 2005, the Higher Education Loan Program (HELP). A subsidy is provided to students in the form of an income-contingent loan, which students repay when their taxable income reaches a specified threshold. The Government does not charge a real interest rate on the loan, but its value is indexed in line with movements in the Consumer Price Index. The longer the time taken to repay the loan, the greater is the implicit subsidy from government to the student. Australia's income-contingent loan scheme is recognised as a world-leading model for funding higher education and has been credited with supporting Australia to achieve tertiary enrolment rates that are as high as or higher than in countries with fee-free higher education (Gilboa and Justman 2009, p. 2).

A major benefit of Australia's HELP scheme is that it diminishes the potential financial barrier to participation in higher education caused by requiring students to pay upfront tuition fees. Although students are charged a student contribution when they enrol in a Commonwealth-funded higher education place, they can access an income-contingent loan, incurring a HELP debt that they pay off progressively through the taxation system.

The average time to repay a HELP debt is approximately eight years. The weekly repayment amount is modest and although it increases as a graduate's taxable income increases, it remains at a relatively low portion of take-home earnings. For example, based on the 2010–11 repayment schedule, a graduate earning the 2010 median graduate wage of $49,000 (based on Graduate Careers Australia 2010) will repay $38 per week, while a graduate earning $80,000 will pay $123 per week.

The HECS–HELP repayment thresholds have undergone two significant changes; the first in 1997 reduced the threshold by around $7,000, while the second in 2005 increased it by nearly $10,000. Although it might be anticipated that these changes would impact on particular groups of students more than others, such as mature-age students studying part time while working, studies into this area have not been conclusive (Chapman and Beer 2005). Changes to the repayment thresholds were made at the same time as changes to contribution levels, which has complicated analysis of the impact on demand and has made interpretation of any results ambiguous. Despite these combined changes, however, the total number of enrolments continued to rise. While the evidence is inconclusive any potential deterrence effect should be taken into account when setting repayment thresholds, particularly given participation targets for low SES students. This concern will be taken into account and discussed further in the next chapter.

The time taken to repay a HELP debt varies significantly depending on the taxable income of a student. Under the HELP scheme, the contribution made by students is linked in a way to the private benefits that they achieve from their degree. Those who do not achieve high private benefits, and earn low taxable incomes post-graduation, can take many years to repay their loan or may never earn enough to do so. Students who take longer or never repay their HELP debt receive a higher implicit public subsidy. Conversely, students who achieve a high private benefit as measured by post-graduation taxable income are required to repay their debt more quickly and by doing so receive a lower public subsidy. The Wran Committee, which recommended the introduction of HECS–HELP, identified this as one of the major benefits of an income-contingent loan scheme for higher education (1988, p. xiv).

As a result of the repayment arrangements for the income-contingent loan scheme, the Government provides an average subsidy to students of about 33 per cent of the value of the loan. At 30 June 2011, the Australian Government Actuary estimated that the value of the accumulated HELP debt not expected to be repaid was around $5.2 billion and that the accumulated deferral cost was $2.3 billion.

Some commentary has centred on the loan scheme failing to recoup loans from those who reside offshore. Setting up reciprocal repayment schemes in countries with similar systems may be possible but would be unlikely to capture all graduates in a globalised workforce. It might be possible or worthwhile in the future and this strategy could be explored, but was not seen as a priority currently.

5.1.1 Alternative models

Alternative models for collecting student contributions towards the cost of higher education include graduate taxes, commercial loans and increased taxation rates.

Under a graduate tax model students do not pay tuition fees, but instead are subject to a tax that is levied for a period of time, or indefinitely after graduating. The graduate tax model, which received some support in submissions, was also seriously considered by the 2010 Independent Review of Higher Education Funding and Student Financing (Browne Review) in England. This model has benefits similar to income-contingent loans in that it removes upfront fees and repayments are linked to income. However, the Panel notes that a graduate tax scheme breaks the link between the cost of higher education and student contributions, meaning that high-earning students could pay their higher education costs several times over (Greenaway and Haynes 2003). It would also require substantial government funding over many years before it was self-sufficient. Modelling undertaken by the Browne Review found additional funding would be required until at least 2041, based on England's current funding arrangements (Browne 2010, p. 51).

In countries such as the United States and South Korea there are no universal government-sponsored loan schemes similar to Australia's income-contingent arrangements. Students may be eligible for needs or merit-based government or institutional scholarships, grants or subsidised loans, but many must seek commercial loans. This removes the cost of a loan scheme from government, but upfront tuition fees are a barrier to participation, particularly for disadvantaged students, who may be deterred from participating in higher education (Neill 2009, Heller 1997). It also results in students bearing significant commercial debt that they may not be able to repay if they do not achieve high earnings and that may prevent them from taking on other debts, such as mortgages.

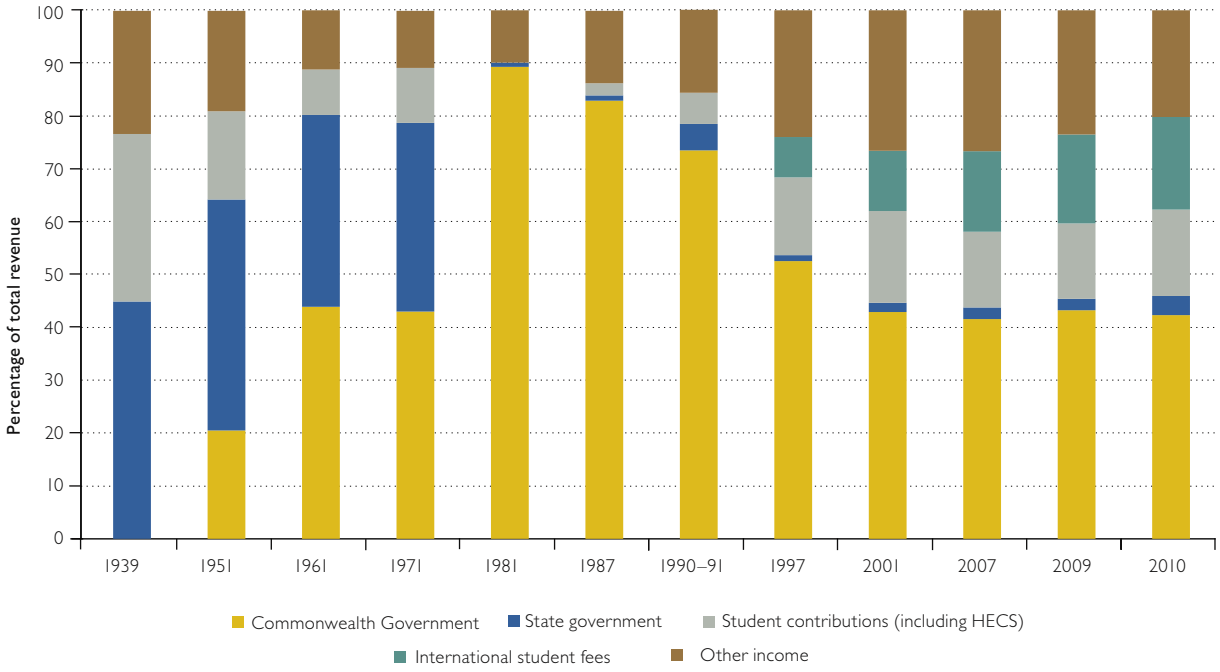
Finally, governments have the option of increasing taxation rates and using the additional revenue to fund higher education, either in conjunction with student contributions or to replace them. The Panel acknowledges the complexity of making comparisons of tax rates, as income tax systems are subject to significant variation across countries and numerous features, such as social security contributions, need to be accounted for in any comparison.

However, the Panel notes that countries that have fee-free higher education, such as Sweden and Denmark, have average personal income tax rates of 43 and 38 per cent respectively, compared with an average of 26 per cent for Australia (OECD 2010). Additionally, some evidence exists to suggest that universities which rely on government revenue as the main source of income do not receive adequate funding and are increasingly pursuing alternative revenue sources. For instance, international student fees were recently introduced in Denmark (OECD 2011a). The Panel views any consideration of increasing taxation rates to fund higher education as beyond its terms of reference but notes that without higher tax revenues it would be difficult to abolish student fees.

5.2 The level of the student contribution

Students in Australia, with the exception of the period from 1975 to 1986, have always contributed towards the cost of their higher education (Figure 5.1).

Figure 5.1: University revenue by source, 1939–2010



Source: Department of Employment, Education and Training 1993 (1939–1990); DEEWR various years (1991–2010).

When the income-contingent loan scheme was introduced in 1989, the level of student contribution was set at a single rate regardless of the discipline or the unit of study. In 1997, the level of student contribution was differentiated into three bands or discipline groups and further changes in 2005 resulted in four bands. As a result of incremental policy changes, the proportion of the funding for a unit of study borne by students now varies widely between disciplines. For example, students undertaking units in law, accounting, administration and commerce contribute 84 per cent of the funding for their studies, students in humanities contribute 52 per cent, students in teacher education contribute 37 per cent, nursing students 31 per cent and science students 19 per cent of total funding for their courses. In absolute terms, the lowest fees ($4,355 per annum) are paid by students in science, mathematics and statistics, and the highest ($9,080 per annum) by students in law, accounting, administration, economics, commerce, dentistry, medicine and veterinary science (see Table 1.1).

The average proportion of base funding contributed by students depends on the actual discipline mix of units of study undertaken in a given year but is around 40 per cent of total base funding. This does not include additional non-base government funding for teaching and learning from other programs. It should be noted that the Government's share is higher when Commonwealth Grant Scheme (CGS) loadings (e.g. Enabling, Regional and Medical) are included in the calculations.

5.2.1 International comparisons

Compared with tuition fees in other OECD countries, the level of student contributions in Australia is approximately the fifth highest (OECD 2011a), exceeded only by Japan, Korea, the United Kingdom and the United States. However, the proportion of Australian students that receive subsidised loans to meet the cost of their contribution to tuition costs is the highest in the OECD.

Both England and New Zealand now have contribution arrangements similar to Australia in the form of income-contingent loan schemes. The United Kingdom lacks uniformity and Scotland offers fee-free higher education to domestic students. The relative student contribution amounts for humanities and medicine courses are shown in US dollars in Table 5.1.

It should be noted that from 2012–13, the English Government intends to remove government funding from courses in English universities in Price Group D (courses other than those with medical, clinical, laboratory, studio or fieldwork components), where student fees will provide 100 per cent of funding.

Despite concerns that Australian student contributions are high by international standards, the proportion of base funding contributed by Australian students is similar to the levels in other countries with income-contingent loan schemes. The HECS–HELP system is characterised by having indexation without interest; an income-contingent repayment threshold close to average pay rates; and no requirement for the loan to ever be repaid or transferred to a deceased estate. With an average subsidy of 33 per cent on the value of the loan, the student liability is minimised and more attractive than making an upfront payment.

The Panel recognised the advantages of the current system for students as strengths and saw no reason to change these features, only additionally recommending that the repayment threshold not be lowered to a level that might deter participation.

Table 5.1: Comparison of maximum domestic undergraduate student contributions for humanities and medical courses, 2011

Average contribution amounts, USD PPP (local currency in brackets)	Humanities				Medical			
	Australia	England[a]	Scotland	New Zealand[b]	Australia	England[c]	Scotland	New Zealand[b]
Maximum student contribution	$3,604 ($A5,442)	$5,046 (£3,290)	$0	$3,087 ($NZ4,662)	$6,013	$5,046 (£3,290)	$0	$8,128 ($NZ12,274)
Government funding	$3,297 ($A4,979)	$4,050 (£2,641)	$7,768 (£5,065)	$3,982 ($NZ6,014)	$12,942 ($A9,080)	$22,230 (£14,494)	$25,046 (£16,330)	$23,463 ($NZ35,430)
Student contributions as proportion total funding	52%	55%	0%	44%	32%	18%	0%	26%

a Funding for humanities in England relates to Price Group D, which includes most subjects but excludes subjects with medical, clinical, laboratory, studio or fieldwork components.

b In 2011 New Zealand moved away from Government-set fee maximums for student fees. As a result, the values shown are an average for the universities offering the courses.

c Funding for medical courses in England relates to Price Group A, which includes subjects with medical or clinical components.

Note: Currencies are converted to US dollars using 2010 OECD Purchasing Power Parities for GDP (OECD 2011b).

Source: Secretariat, using Higher Education Statistics Agency and HEFCE funding data for English universities, Scottish Funding Council data for Scottish universities (2011), Tertiary Education Commission data for New Zealand universities (2011) and DEEWR administrative data for Australian universities.

5.2.2 Price competition

The current student contribution levels determined by the Government are maximum levels at which universities are able to charge students for units of study within particular disciplines. The Panel is not aware of any public universities currently charging less than the maximum contribution amount. Many institutions now offer incentives to high-achieving students in the form of scholarships and bursaries to assist with living expenses, which appears to be more widespread than the practice of reducing student contribution amounts. With the removal of the cap on undergraduate Commonwealth supported places from 2012, it is possible that some universities may choose to lower prices to attract more students, although many may choose to expand efforts in terms of offering bursaries and scholarships. The current legislative arrangements do not prevent any institution from lowering the level of student contribution that they charge for any unit of study in any discipline.

Most of the current student contribution amounts were introduced in 2005 when the maximum amount that a university could charge was set at an amount 25 per cent above previous HECS rates. Universities were given the flexibility to set student contributions anywhere from zero up to the maximum for each discipline, in the expectation that this might result in some price competition between institutions in the higher education sector (DEST 2003). However, in practice, within one year of the policy change, most universities were charging students the maximum rate. The last university to change, the Australian National University, had moved to the maximum by 2007.

A pattern of rapid general movement towards a maximum was seen recently in England, where initially almost all universities increased fees close to a newly introduced maximum that was three times the previous amount.

These experiences illustrate the difficulty of attempting to encourage price competition in a regulated higher education system in which price is seen as a proxy for quality. The regulation of the higher education sector has ensured that Australian universities deliver world-standard degrees efficiently and effectively. However, it appears that price is used as a signal for quality and therefore competition between universities for students will take place primarily through non-price means. These include advertising, selective discounts, teaching quality, support and ancillary services and diversity of offerings.

Several submissions argued that there is an inconsistency between the demand driven system of undergraduate places and capped student contribution amounts. It was argued that this will limit the provision of differentiated and higher-quality course offerings that require funding more than the current combined government and student contributions. The Panel's view is that Australian universities currently have the freedom to diversify offerings, lower student contribution levels and subsidise courses internally in any way they choose as autonomous institutions. In addition, the Panel is recommending that institutions be given the opportunity to provide 'flagship' degrees, which will attract higher funding than other courses (see Chapter 4). Finally, the Panel notes the experience of New Zealand, where a demand driven system was implemented with deregulated prices. Funding demands became unsustainable and in 2008, the New Zealand Government reintroduced limits on the number of funded student places.

5.2.3 Workforce shortages and engagement with industry

HECS–HELP concessions

Since 2005 the Government has at times sought to use targeted student contribution reductions to stimulate demand for certain courses. For example, education and nursing were originally classified as HECS Band 1 subjects, but in 2005, they were identified as 'national priority' courses and the maximum student contribution level was set at $3,847, compared with $4,808 for all other courses in Band 1. Similar changes were introduced in 2009 for mathematics and science courses.

While it is important to ensure that the higher education funding system encourages students to enrol in courses which lead to employment in occupations where skill shortages exist, evidence suggests that these policies have had limited effect in stimulating demand.

Several submissions expressed support for HELP holiday-type schemes for students who undertake work in a specific industry. Under this type of scheme, students are able to delay making repayments on their HELP debt, or have their debts waived or reduced depending on the length of time they work in the industry. The HECS Reimbursement Scheme already exists in the medical field, where doctors who work in rural areas may be eligible for their HELP debts to be paid. Such schemes need to be promoted effectively to ensure that potential students are aware of the incentives they provide to enrol in courses of high priority. The existing reimbursement scheme is a government program, but it could be adapted for a range of employers to make payments to reduce employees' HELP debts. Skills Australia undertakes assessment of skill shortages and labour market needs and may be able to play a role in supporting the identification of appropriate occupations and industries for these types of programs. However, correcting labour market shortages is not an efficient objective or the core responsibility of base funding.

As there is no evidence to suggest student demand is affected by reducing student contributions, the Government should phase out these types of national priority programs. Instead, the Panel considers that strategic objectives such as alleviating skill shortages would be better pursued through labour

market measures, such as improved wages and employment conditions, and information about job openings and careers, rather than adjustments to base funding. In addition, labour shortages may be addressed through targeted programs that provide incentives for students to enrol (such as scholarships and bursaries) or provide incentives for graduates to take jobs in a specific field subject to skill shortages by waiving HELP debt repayments for employees in areas of skill shortage. Furthermore, some skill shortages, as in science, seem to reflect poor attainment of Year 12 prerequisites, so greater attention could be paid to secondary education.

Employer and industry contributions

The Panel also considered whether it was appropriate to seek formal contributions from employers, industries or state governments who are, for example, the major employers of nursing and education graduates. Not only do these groups gain significant benefits from higher education by having a pool of qualified and high-quality graduates to draw on as potential employees, but they also impact on the demands made on higher education teaching and learning. These demands relate not just to the quantity of graduates, but in some cases, the structure of courses, material taught and particular skill sets that are identified as important. Industry bodies can set accreditation standards for a range of degrees and as a result of these standards, the requirements and components of courses are changed. For example, eligibility to practise as an architect requires a postgraduate qualification and hours of clinical supervision are prescribed in clinical psychology courses.

In 1993 the Government introduced employer-sponsored places to encourage greater cooperation between industry and universities. Under this program, employers could negotiate places within existing courses or entirely new courses directly with universities. Employers were responsible for the full cost of the place, with students exempt from fee charges, and the place attracting no CGS funding. In 2005 this scheme was revised to seek contributions jointly from students and employers. 'Employer-reserved places' continue to be exempt from CGS funding and are offered to students on a full-fee basis, for which students can access FEE–HELP.

Depending on the arrangement between the employer and the university, enrolments in the particular course or unit of study are wholly or partially restricted to sponsored students. Examples of these courses include the Associate Degree in Aviation Studies at Swinburne University, which has places reserved for students undertaking cadetships with airlines, or the Associate Degree in Policing Practice offered by Charles Sturt University which is limited to students employed by the New South Wales Police Force. The arrangement between the Australian Defence Force and the University of New South Wales for the Australian Defence Force Academy is also based on an employer-reserved arrangement.

The arrangement for employer-reserved places has provided additional capacity for universities to offer places under the capped system. Under the demand driven system it can be expected that industries may seek to have courses delivered through Commonwealth supported places with the cost met by the Government and students. However, the Panel believes that the existing policy of industry and employers contributing to the cost of tailored courses continues to have merit, particularly as greater involvement from industry and employers is the best mechanism to match graduates to skills requirements.

It seems possible to build on the existing scheme by encouraging universities to seek contributions from employers as well as receiving contributions from the Government and students. The employer contribution could be additional to current base funding levels or it could be a replacement. An example of the latter would be to decrease the Government contribution by one dollar for every two dollars of employer contribution. The additional revenue to universities would encourage university

engagement with employers, while the employer contribution would recognise the benefits to employers of having a course tailored to their training needs. This change would require an amendment to the *Higher Education Support Act 2003*.

However, even in the absence of a specific funding program, employers still make a contribution towards higher education. This is primarily delivered through the higher incomes that are paid to graduates. Both undergraduates and postgraduates are targeted specifically through graduate recruitment programs, which operate in both private and public sectors. Many industry bodies, corporate foundations and private organisations provide scholarships and grants to both students and institutions. These are available at both undergraduate and postgraduate levels of education, for study in specific fields or generally for disadvantaged or high-performing students. Some sectors identify hosting students engaged in work experience or work-integrated learning as an investment rather than a cost. Additionally, in many cases, employers will also make direct contributions to student costs of tuition through employer-sponsored study, particularly for professional postgraduate qualifications.

The Panel noted that the Innovative Research Universities and the Australian Chamber of Commerce and Industry have entered into a memorandum of understanding to develop a suite of information for Australian businesses and to encourage them to work with universities to provide opportunities for students. This is an excellent initiative and it is hoped that it will grow and provide a model for other such partnerships.

5.3 Estimating the public benefits of higher education

The Panel considered the question of the appropriate level of government and student contributions by examining evidence on the level of public[15] and private benefits from higher education.

The Government is justified in providing funding for higher education because there is clear evidence that graduates bestow benefits on the wider community. Theoretically, private benefits might not be sufficient to motivate a student to pay full fees, and so government subsidies aim to encourage more people to participate in higher education. Such subsidies are justifiable because society reaps some of the benefits from having a more highly educated population. These wider benefits, which are referred to as public benefits in this report, include a more rapid rate of technological change, lower crime rates and a more robust civil society.

The Panel commissioned Professor Bruce Chapman from the Australian National University to prepare a study that estimated the value of the public benefits of higher education. Estimates of this kind are extremely complex and rely on various assumptions that are not subject to agreement among economists. Professor Chapman's report (Chapman and Lounkaew 2011) also emphasised the difficulties inherent in making such estimates, pointing out that many public benefits (such as technological progress) cannot be easily quantified. Nonetheless, it would be misleading and costly to overlook the existence and importance of public benefits just because they are difficult to measure.

Graduates traditionally earn higher wages than non-graduates and one of the key components of public benefits, as well as the most easily quantifiable, is the additional taxation revenue generated

15 In this report, the Panel uses public benefits to refer to externalities. Externalities of higher education are the costs or benefits to third parties that are generated by an individual's decision to invest in higher education. The use of the term 'public benefits' is consistent both with the terminology used in the Panel's terms of reference and that which is in common use within the higher education sector and government. It also clearly indicates that only positive externalities (or benefits) are being considered within this discussion.

by these higher wages. However, it may be expected that graduates of higher education have innately higher ability than non-graduates and may, in part, have achieved higher wages regardless of their education level. Therefore, it is also necessary to impose assumptions about the extent of the contribution made by higher education as opposed to the effect of any innate ability on the part of graduates. The study concluded that between 25 to 40 per cent of the higher wages graduates receive over their non-graduate counterparts is because of their university studies (Chapman and Lounkaew 2011, p. 14). Having made this conclusion, the study measured the overall increase in future taxation revenue generated by an individual undertaking higher education as a starting point for estimating the value of public benefits.

The study then incorporated the findings from many international studies with respect to the presumed benefits from expansion of higher education, including reduced crime, improved health, more informed political debate, and the higher likelihood of attainment of 'civil society'.

Using the average of their results, within the confines of the stated assumptions, Professor Chapman estimated an approximate range for the public benefits associated with an individual undertaking higher education (Table 5.2). The results should be considered to be an estimate of the value to government, as measured at the point of the enrolment of the student, over a graduate's expected lifetime.

Table 5.2: Present values of higher education externalities (public benefits) for four year degrees

	Assumed contribution from human capital (25 % or 40%)	
	0.25	0.40
Total four-year degree ($)	24,392	39,028
Per year of higher education ($)	6,098	9,757

Note: Calculations assume a 10 per cent downward ability/motivation adjustment.
Source: Chapman & Lounkaew 2011.

The approximate range of the public benefits associated with an individual undertaking higher education is between $24,392 and $39,028 for the working life of the graduate. The authors' best estimate of the additional non-pecuniary and direct fiscal dividend to government from higher education lies between $6,098 and $9,757 in 2011 terms, for each year of an average university graduate experience. In other words, the public benefit of a higher education degree is between approximately $6,000 and $10,000 for each year of study, assuming a four year degree, over the lifetime of the graduate. However, it should be noted that because of the extent of unquantifiable benefits (e.g. contribution of higher education to civil society), these figures are likely to significantly underestimate the true value of higher education.

5.4 Estimating the private benefits of higher education

When deciding whether or not to undertake a higher education course, people will typically consider the benefits to themselves. The expectation that students should make a contribution towards the cost of their studies is based on the evidence that graduates receive substantial private returns from their investment in higher education. Most submissions, including some from student groups, agreed that students should make some contribution towards the cost of their education in recognition of the substantial private benefits accruing to individuals with higher education degrees. A small

number of submissions argued for fee-free higher education, although many recognised the financial constraints limiting the feasibility of such an option.

Several submissions, including those from the National Tertiary Education Union and the Council of Australian Postgraduate Associations, raised understandable concerns about the validity of basing contributions on estimates of benefits, either public or private.

Curtin University stated:

> Measurements of the private benefit of education are crude, regionally biased, time-related and do not take into account, for example, issues such as what a graduate might choose to do with his/her degree. The assumption that graduates will always earn more than their non-university educated counterparts is not proving true in Western Australia currently (submission no. 33, p. 2).

The Panel recognises that using private benefits as a basis for determining student contribution levels is complicated by the fact that the measured private benefits can only ever be averages and that this obscures the wide variations in benefits in, for instance, the levels of increased salary that graduates derive from their degree. A commonly cited example was of law graduates whose career paths range from corporate law to careers in the public service or legal aid. However, the Panel has concluded that differences in the level of the private financial benefits of higher education are acknowledged partly through the progressive repayment arrangements under Australia's income-contingent loan scheme. As the level of government subsidy increases according to the time a student takes to pay their HELP debt, the subsidies are implicitly aligned with the rate at which students accrue a private financial return to their higher education investment. The average subsidy is 33 per cent but is above average for low-paid graduates.

A further complication in determining the level of student contributions on the basis of the private benefit is that there is no direct relationship between the cost of a course of study and the level of public or private return. For example, costs of courses in the visual and performing arts can be very high but there is, on average, often no private benefit, in terms of increased wages to graduates of this field of study.

It is possible that the introduction of the demand driven higher education system may have implications for the level of private benefits to higher education qualifications, particularly if it results in an over-supply of graduates, insufficient employment opportunities or perhaps a decrease in the average ability of graduates. These factors appear to have been at play recently in the United Kingdom where it was found that the large difference in wages earned by higher education graduates and workers with no post-school qualifications has reduced between 1993 and 2010 (National Office of Statistics 2011). However, there is evidence that in Australia private benefits have persisted historically, even though the number of graduates has increased significantly in recent decades (Wei 2010). Further, the *Future demand for higher education* report prepared for the Bradley Review found that predicted economic growth for Australia and the current trend towards high-skill employment means that demand for graduates of higher education was likely to exceed supply (Access Economics 2008). This suggests that sizeable private benefits will continue into the future even with higher numbers of graduates.

5.4.1 Private rates of return by discipline of study

The Panel commissioned the Centre for Labour Market Research (CLMR) to undertake research on estimates of the private benefits of higher education in Australia according to different disciplines of study (Daly, Lewis, Corliss and Heaslip 2011). The chief investigators, Professors Anne Daly and Philip Lewis, identified extensive literature in this field with a wide range of results. A selection of the values provided in the literature, using Australian data, is provided in Table 5.3. They noted that differences in the underlying assumptions and methodologies of the studies made direct comparisons difficult. Nevertheless, overall, the evidence suggests that investment in an undergraduate education is highly profitable from an individual's perspective. Estimates of the private benefits of higher education are generally calculated as the private rate of return to the investment. In other words, it is a calculation of the percentage gain on investment, taking into account the costs of making this investment.

Table 5.3: Selected estimates of the private rate of return

Source	Estimate of private rate of return (year of data in parentheses)
Miller 1984	21.1% (1976)
Chapman and Salvage 1997	9.4% (1996)
Borland, Dawkins, Johnson & Williams 2000	15.0% (1997)
Borland 2002	14.5% or $380,958 lifetime monetary gain (2001)
Daly, Fleming & Lewis 2006	Law degrees 16.4%, commerce degrees 13.4%, other degrees 15.9% (males only, 2001)
Wei 2010	15.3% for males, 17.3% for females (2006)

Source: Daly, Lewis, Corliss and Heaslip 2011.

The studies also indicate that the private rates of return to higher education in Australia are sizeable, have persisted over time, and have been sustained since the introduction of income-contingent student loans in 1989 (Wei 2010).

Using data from the Australian Bureau of Statistics, CLMR found considerable variation in the private benefits to higher education for different fields of study. The highest private rates of return were experienced by graduates of dentistry, medicine and information technology courses, while the lowest private rates of return were for graduates of courses in the visual and performing arts, humanities and architecture (Table 5.4).

Overall, the average annual rate of private return to a higher education degree is 15 per cent for males and 12 per cent for females in Australia. The study found that the private rate of return to a university degree decreased, in many cases, quite considerably, for both men and women if the duration of the degree was extended by an additional year of study (Daly, Lewis, Corliss and Heaslip 2011, p. 18). This is understood intuitively by many students. Other factors that influenced the private rates of return included employment status on graduation (full-time, part-time, unemployed) and participation in paid work while studying.

Table 5.4: Private rates of return for a Bachelors degree

Discipline	Length of degree	Male (%)	Female (%)
Humanities	3	3	9
Science	3	10	11
Allied health	4	13	14
Mathematics and statistics	3	13	12
Information technology	3	17	15
Engineering	4	15	14
Architecture	5	9	6
Medicine	5	16	15
Nursing	3	17	14
Dentistry	5	20	17
Education	4	11	10
Visual and performing arts	3	a	a
Commerce	3	17	15
Law	4	17	15
Economics	3	18	15
Average all courses	**3**	**15**	**12**

a Internal rate of return of zero or less.
Source: Daly, Lewis, Corliss & Heaslip 2011.

5.4.2 Private rates of return for students working part time and using HELP

Students undertake higher education courses on a full-time or part-time basis, often in conjunction with full time or part-time work and most students defer their student contribution through HELP.

Part-time work influences the estimates of foregone income in calculating the private rate of return. In general, the majority of Australian university students work part-time while studying full-time, working on average 15 hours per week and earning an average of $18 per hour (McInnes and Hartley 2000, cited in Daly, Lewis, Corliss and Heaslip 2011, p. 24). To derive the most accurate possible estimates of the private rate of return to higher education degrees by discipline, the researchers re-calculated their estimates on the assumption that all students, other than those in laboratory-based programs (engineering, science, medicine and dentistry), were working an average of 15 hours per week while studying full-time and would repay their HELP debt on graduation (Table 5.5).

Table 5.5: Private rates of return for Bachelors degrees studying full-time, working part-time and paying HELP on completion of study

Discipline	Male (%)	Female (%)
Humanities	8	35
Science	10	13
Allied health	15	17
Mathematics and statistics	35	39
Information technology	54	40
Engineering	42	42
Architecture	23	21
Medicine	18	17
Nursing	18	15
Dentistry	23	19
Education	34	29
Visual and performing arts	20	26
Commerce	51	48
Law	45	40
Economics	58	51
Average all courses	**45**	**40**

Source: Daly, Lewis, Corliss & Heaslip 2011.

When comparing Table 5.4 and Table 5.5, the private rates of return to university degrees increase considerably when students work part time while studying and use HELP to pay their student contribution. The most notable improvements are for the fields of economics, commerce (males and females) and information technology (males). The private rate of return to degrees in the humanities and the visual and performing arts also increases substantially under these assumptions. Overall, while the level of paid work undertaken by some students is of concern, the private rate of return to Bachelors degrees in Australia for students who work part time while studying is 45 and 40 per cent per annum for men and women respectively.

5.5 The appropriate balance of public and private contributions

It is well established that higher education provides both public and private benefits. In Australia, the public rate of return to males and females appears slightly higher than the private rate of return. In this respect, Australia is different from the average for all OECD countries where the average private rate of return to tertiary education is slightly higher than the public rate of return (Table 5.6).

In Australia, the Panel notes that the rate of private benefits varies widely across disciplines, with some disciplines having very low or negative benefits. However, these estimates are very sensitive to changes in the underlying assumptions, and the rates of private return increase substantially for students who work part time while studying and access HELP (Daly, Lewis, Corliss and Heaslip 2011).

Table 5.6: Public and private rates of return to tertiary education

Country	Private rate of return (%)		Public rate of return (%)	
	Male (%)	Female (%)	Male (%)	Female (%)
Australia	9.1	11.3	12.4	12.5
OECD average	12.4	11.5	11.1	9.2

Source: OECD 2011a.

While the rates of private return to education vary considerably by discipline of study, the Panel considers that it would be inappropriate to determine levels of student contributions on this basis. In the Panel's view, the progressive repayment schedules of the income-contingent loan scheme address the issue of variations in the rate of private returns to higher education and adequately compensate individuals who receive lower private rates of return to their qualifications. Conversely those with higher rates of return, with associated higher taxable incomes, provide additional funds to the treasury via the more rapid repayment requirements and the progressive taxation system. The Panel therefore considers that in establishing the appropriate balance of public and private contributions towards the cost of higher education, it is sufficient for policymakers to make estimates based on aggregate average measures of private benefits.

Economic theory suggests that the public contribution towards a good should be based on the public benefits of that good (Barr 2000). Although there is evidence that private benefits vary across disciplines, most public benefits appear to be generated regardless of discipline. Public benefits such as dynamic innovation, lower crime rates and better health outcomes are associated with higher education in general and do not vary across courses. There is no evidence that the value of public benefits differs in a systematic way across disciplines of study. The Panel therefore considers that in establishing the appropriate balance of public and private contributions towards the cost of higher education, it is sufficient to make estimates based on aggregate average measures of public benefits.

Under the current funding model, the average base funding amount per student across all funding clusters was $16,530 in 2010, the latest year for which full-year student figures are available. Applying Professor Chapman's results to this figure suggests that public benefits account for approximately 40 to 60 per cent of the average base funding amount. This would therefore indicate that the Government should contribute anywhere between 40 to 60 per cent of the total base funding for a unit of study, with students contributing the balance.

Given that the range of public benefits is between 40 and 60 per cent of the average base funding

amount, it could be argued that governments and students should 'split the difference' and contribute in equal proportions towards the cost of higher education. However, the Panel felt that the Government should contribute at a higher rate than students. This is based on a range of factors, including the fact that unlike the average OECD system, Australia has a higher public than private benefit from education (Table 5.6). In addition, it seems fair that the Government should bear greater responsibility than students for funding the broader institutional activities supported by base funding. The Panel also considered that in light of the difficulties in quantifying all of the public benefits of higher education, it would be appropriate for the Government to make a higher contribution than students in recognition of these unquantifiable, but no less important, benefits. Finally, the Panel was concerned that a change towards equal proportions would result in a very significant increase in student contributions that could not be adequately justified by the evidence.

In summary, the Panel concludes that the most appropriate balance of contributions is for the Government to contribute at the top end of the given range (60 per cent) with students contributing the balance (40 per cent). The higher proposed contribution from Government acknowledges the difficulties in quantifying precisely the extent of public benefits from higher education and reflects the relatively high student fees already paid in Australia, which are the fifth highest in OECD.

5.5.1 Approved postgraduate courses

The commissioned study of private benefits by the CLMR found evidence that the private benefits at the postgraduate level are generally higher than undergraduate study alone. Estimates of private return were influenced heavily by assumptions regarding the employment status of students, which varies considerably at the postgraduate level (Daly, Lewis, Corliss and Heaslip 2011). A further complication is the recent increase in universities offering Commonwealth supported places in approved postgraduate professional entry courses, which may not have the same private benefit as postgraduate courses such as Masters of Business Administration.

There is no evidence that postgraduate professional entry courses have private benefits different from undergraduate courses in the same professional area. Furthermore the Lewis and Daly data comprised incomes of those currently in the workforce who studied before the trend to upgrading the qualification level required became common. In terms of public benefits, Professor Chapman did not identify whether these are different at the postgraduate level. However, a study based in the United States found that postgraduate degrees had similar public benefit to undergraduate degrees in the United States. It found that the public rate of return to a Bachelors degree was 14 per cent compared with 13 per cent for a postgraduate professional degree (McMahon 2009, p. 187). The Panel therefore concludes that the 40:60 ratio should also be applied to approved Commonwealth-funded courses at the postgraduate level.

5.6 Applying the 40:60 ratio

Most submissions to the Panel argued for simplicity in the determination of public and private contributions towards the cost of higher education. The Panel considered three possible approaches:

- a fixed government contribution amount to the funding for all units of study calculated as 60 per cent of the average total base funding, around $10,000 in 2010, with students making up the difference between the government contribution and total resourcing. However, it was found that this would result in some students paying around $1,000 for their course (less than 10 per cent of the funded rate for their discipline) while others would pay $20,000 (around 66 per cent of the 2010 funded rate)
- a fixed student contribution amount to the funding for all units of study calculated as 40 per cent

of the average total funding, around $6,500 in 2010, with government making up the difference between student contributions and total resourcing. As with a fixed government contribution, this system would result in significant variation in the proportion of total resourcing contributed by students (for example, some would pay 60 per cent of the funding for their courses while others would pay only 20 per cent)

- fixed proportions of student (40 per cent) and government (60 per cent) contributions towards the base funding for a unit of study within each funding category.

While the costs of different disciplines of study appear to be converging, as discussed in Chapter 3, there remains a significant difference between the funding levels for the lowest- and highest-cost courses. While the imposition of either a fixed student contribution or a fixed government contribution might have benefits in terms of simplicity, both options create issues of equity because they lead to some students paying either very low or very high proportions of the funding for their degree. In the Panel's view, such differences cannot be justified.

There was strong support in submissions for a consistent student contribution, either as a flat dollar amount or as a consistent proportion across all funding categories. The Panel considered that the objectives of simplicity and equity would be best achieved through applying a fixed proportion of student (40 per cent) and government (60 per cent) contributions towards the funding for a unit of study within each funding category.

Under this model, the balance of contributions would be determined on a proportional basis that applies across all funding groups. Although this would lead to a variation in the dollar values of contributions, both students and government would be required to contribute a consistent proportion of total base funding towards the total funding for their courses that reflected, as far as possible, the real costs of course delivery.

The total funding of expensive courses would thus be borne more equitably by both students and government, rather than one party having a disproportionately large burden. It would also remove the unequal distribution of public subsidies, with students subject to the same proportional subsidy regardless of their choice of course of study.

5.6.1 Phased implementation

The Panel recommends that the current split between government and student contributions be modified to be 40:60 for every course, instead of the current range that has students making a contribution of between 19 and 84 per cent of the total funding per unit of study depending on its funding category. Although on average students contribute around 40 per cent of total funding for all disciplines, moving to a ratio of 40:60 suddenly would involve considerable increases for students in some courses. The Panel therefore recommends that the new ratio be introduced for new students only, and that existing students continue to have their fees 'grandfathered', or charged at the levels that currently apply, until they graduate from their degree.

In courses of study such as science, where the student contribution is 19 per cent in 2011, the Panel notes that a move to 40 per cent would be a very significant change in one year. Although the Panel has observed that labour market shortages are not necessarily addressed by modifying student contribution amounts, the Panel is concerned that sudden large changes might have a short-term deterrent effect on enrolments. This potential effect could be mitigated by introducing the 40:60 ratio in a sequence of smaller steps with ongoing monitoring for impacts on demand.

Based on 2011 contributions, students currently contribute at a proportion higher than 40 per cent for several disciplines. These are clusters 1 (law, accounting, commerce, economics, for which students pay 84 per cent), 2 (humanities, 52 per cent), part of cluster 3 (computing, built environment, other health only, 47 per cent) and allied health from cluster 5 (for which students pay 42 per cent). These disciplines accounted for 42 per cent of student load in 2010. The cost pressures that a dramatic change would impose on government, coupled with the imminent transition to a demand driven system, should be taken into consideration in phasing in the 40:60 ratio. The Panel therefore proposes that in disciplines where the student percentage contribution is currently above 40 per cent of the funding for their course, the student contribution should be frozen until the indexation of other contributions brings them in line with the targeted 40:60 ratio.

5.7 Summary and recommendations

The Panel considers that the Australian income-contingent loan scheme is highly effective because it enables students to make a contribution towards the cost of their higher education course while minimising any disincentives to participation posed by upfront tuition fees.

Income-contingent loan scheme arrangements should remain

Australia's income-contingent loan scheme is more effective and equitable than alternative models of collecting student contributions such as graduate taxes and commercial loans. It provides a fair and progressive means of recouping the student's contribution under its current repayment thresholds.

Recommendation 20: Income-contingent loan scheme arrangements should remain

The current income-contingent loan system should remain in place and its repayment threshold should be set at a level that does not deter participation.

Contribution amounts to remain regulated

The Panel notes that attempts to introduce price competition between eligible institutions by raising the cap on student contribution amounts that institutions may charge does not lead to price differentiation between courses or lower costs for students. Recent experiences in England and Australia suggest that higher education institutions tend to raise tuition fees across the board to the maximum permissible level.

Recommendation 21: Contribution amounts to remain regulated

The Australian Government should uphold the current policy of capping student contribution amounts at maximum levels, recognising that universities have the autonomy to set lower student contribution amounts if they choose.

Measures to address skill shortages

While it is important to ensure that the higher education funding system does not deter students from enrolling in courses leading to employment in areas with skill shortages, the Panel considers that strategic objectives such as alleviating skill shortages would be better pursued through measures other than adjustments to base funding.

Recommendation 22: Measures to address skill shortages

The Australian Government should phase out existing measures that aim to increase student demand in areas of skill shortages using student contribution reductions and should consider more targeted measures to address skill shortages. In some cases, this could be in partnership with employers and state governments to provide information and incentives for students to undertake courses in priority areas and seek employment in relevant industries on graduation.

Appropriate balance of contributions

The level of private benefits from higher education courses varies considerably according to discipline. However, the Panel considers that such variations are acknowledged by the progressive repayment schedules of the income-contingent loan scheme. This system adequately compensates individuals who receive lower rates of private return from their qualifications. It is therefore appropriate for policymakers to only use aggregate measures of private benefits in determining the appropriate balance of public and private contributions to the cost of higher education.

There is no doubt that post-secondary qualifications lift the lifetime earnings of individuals and also bestow benefits on society as a whole. The presence of extensive public and private benefits was confirmed by the Panel's commissioned research, and the Panel considers it appropriate that both students and the Government should make a contribution in recognition of these benefits.

Across all disciplines, the average balance of contributions between students and the Government

is 40 per cent by students and 60 per cent by the Government. However, across disciplines there is significant variation, with students contributing as little as 19 per cent of total resourcing for their discipline and as much as 84 per cent. There is no rational basis for these wide variations. Therefore, the Panel considers that it would be fair for all students to contribute at a consistent proportion of total resourcing for their discipline.

The Panel recommends that the appropriate balance of contributions for both undergraduate and approved postgraduate courses should be for students to contribute 40 per cent of the funding for a unit of study while the Government contributes 60 per cent.

Recommendation 23: Appropriate balance of contributions

The balance of student and government contributions should be set at a fixed proportion with students contributing 40 per cent and the Government contributing 60 per cent of the funding for each Commonwealth supported place.

Phased implementation of the new balance of contributions

The Panel recognises that under the current funding system, students are expected to contribute towards the total funding for their courses in a range from 19 to 84 per cent of the total funding for units of study depending on the funding category. While overall students have historically contributed 40 per cent of the average funding for all disciplines, moving to a ratio of 40:60 suddenly would involve dramatic changes for many courses of study and this should be taken into account in phasing in the new arrangements.

Existing students should continue to be charged the contribution levels that currently apply, in real terms, until they graduate from their degree. In courses of study where the student contributions are currently very low, the changes may need to be introduced in a sequence of smaller steps with ongoing monitoring for impacts on demand. In disciplines where the student percentage contribution is currently above 40 per cent of the total funding for their course, it should be frozen until the indexation of other contributions brings it in line with the targeted 40 per cent student amount.

Recommendation 24: Phased implementation of the new balance of contributions

The new 40:60 ratio applying to student and government contributions of the total base funding should be phased in as follows:

- existing students should continue to be charged the contribution levels that currently apply until they graduate from their degree
- in disciplines where the student contributions are currently considerably lower than 40 per cent, the changes may need to be introduced in a sequence of smaller steps with ongoing monitoring for impacts on demand
- in disciplines where the student contributions are currently above 40 per cent of the base funding amount, the student contribution should be frozen at the current dollar amount until indexation of the government contribution produces the 40:60 ratio.

Chapter 6: Ensuring access and equity

In undertaking this Review, the Panel was asked to take into account the need to increase access and participation of disadvantaged students in higher education. Responding to the Bradley Review, the Australian Government set a target of 20 per cent of all undergraduate students being from low socioeconomic status (SES) backgrounds by 2020. The target was supported with financial incentives for universities to improve participation through the Government's Higher Education Participation and Partnerships Program (HEPPP).

The Panel considered enabling courses to be within base funding since most of the students enrolled in these are in Commonwealth Grant Scheme (CGS) funded places where the Enabling Loading is a substitute for student contributions. While outside the base, HEPPP funding was considered within the scope of this Review since it is a core element of funding for disadvantaged students and a financial incentive to enrol these students.

Specifically, the terms of reference asked the Panel to recommend options to maintain the substantial financial incentive for institutions to enrol low SES students as the system grows. This chapter considers the factors contributing to the under-representation of low SES students in the higher education system; current and future measures to increase their participation; the role of enabling courses in widening participation in higher education; and the extent to which student financial contributions are a disincentive to participation in higher education.

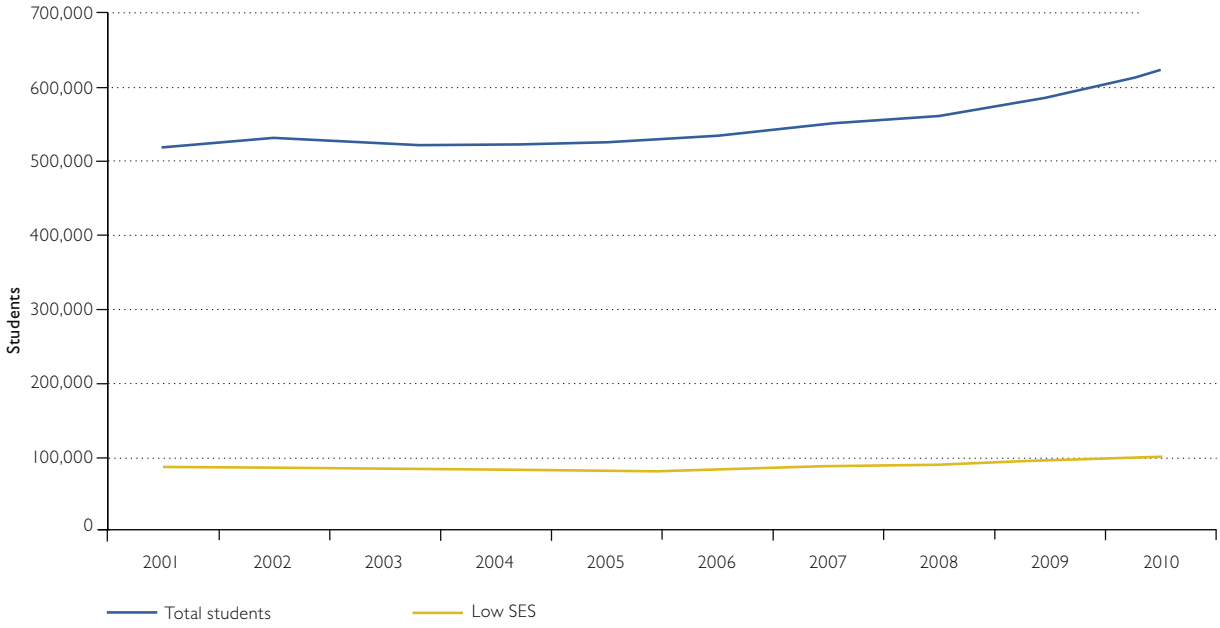
6.1 Low SES participation

Students from low SES backgrounds[16] are under-represented in Australian higher education. On average, a student from a high SES background is about three times more likely to attend university than a student from a low SES background. Students from low SES backgrounds are under-represented in professional fields of study such as architecture, law and the creative arts, and are particularly under-represented in medicine, dentistry and economics. At the postgraduate level, less than 10 per cent of students are from a low SES background.

In 2010, the proportion of undergraduate students from the lowest SES quartile who participated in higher education was 16.5 per cent (using the postcode measure of low SES). The proportion of undergraduate students from a low SES background has not changed significantly over the last decade, remaining at around 16 per cent of the total over this period. Since 2001, the number of undergraduate low SES students has risen by 18 per cent from 86,715 to 102,027 in 2010. This is in comparison to an increase of 20 per cent over the same period for all domestic undergraduate students, an increase from 517,626 to 619,625 (Figure 6.1).

16 Previously, the SES of higher education students has been determined by the geographic area or postcode of the student's home address, using the ABS Socio-Economic Indexes for Areas (SEIFA) Index of Education and Occupation. An improved measure of SES is being developed by DEEWR to support the Government's equity in higher education agenda. While this measure is being developed, an interim measure is being used by DEEWR based on a combination of SEIFA information for Census Districts (a more precise geographic basis than postcode), combined with information on Centrelink payments to university students. Unless otherwise stated, data on higher education students in this report is based on the postcode of the student's home address, since this is the basis on which participation targets have been set.

Figure 6.1: Total domestic undergraduate students enrolled in all higher education providers and students from the lowest SES quartile of postcodes, 2001–2010



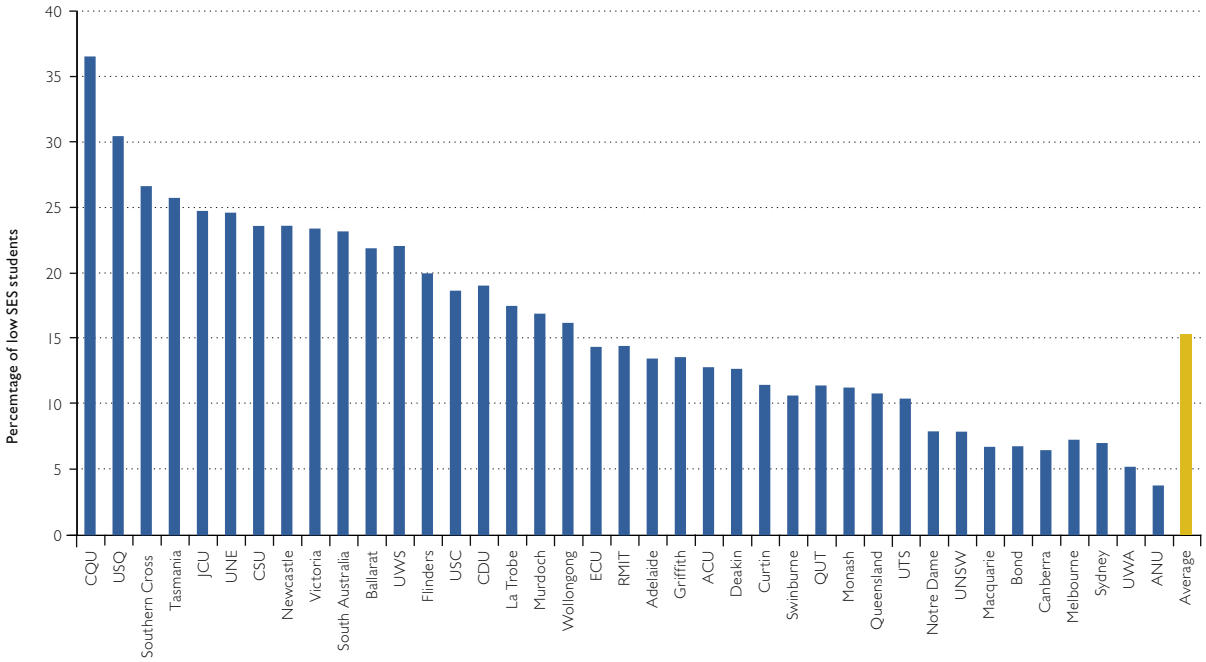
Source: DEEWR (various years), selected Higher Education Statistics Collection; Students 2010 full year, Appendix 2: Equity Groups.

There is significant variation in the rate at which individual universities enrol students from the lowest SES quartile of the population. Regional universities enrol higher proportions of undergraduate low SES students while metropolitan patterns of participation vary considerably between institutions. The participation rate of low SES students in Australian institutions ranges from 4 to 37 per cent (Figure 6.2). Currently, 13 universities have achieved proportions of undergraduate low SES students at or above the 20 per cent target. However, in a number of universities, participation remains below 10 per cent.

The reasons for low levels of participation in higher education among low SES students are complex. DEEWR administrative data illustrates the extent to which low SES students are under-represented at key transition points on the educational pathway from school to higher education. For example, in 2009, the apparent Year 12 retention rate (the rate at which Year 7 students complete Year 12) of low SES students was 67 per cent compared with 78 per cent for all students. Of those students who completed Year 12, 62 per cent of low SES students achieved an Australian Tertiary Admissions Rank (ATAR) compared with 75 per cent of all students. Of the students who achieved an ATAR, 53 per cent of low SES students entered higher education compared with 77 per cent for all students.

Taken together, the findings of relevant studies suggest that the factors that contribute to the below-average participation of students from low SES backgrounds in higher education fall under three main headings: aspiration, achievement, and retention.

Figure 6.2: Domestic students from lowest SES quartile of population (at collection district level), as a proportion of total undergraduate domestic enrolments, by institution, 2010



Source: DEEWR (various years), selected Higher Education Statistics Collection; Students 2010 full year, Appendix 2: Equity Groups.

International studies have shown that in countries such as the United Kingdom, New Zealand, the United States and Canada, students from low SES backgrounds are under-represented in higher education. While definitions of low SES or economic disadvantage vary (making comparisons difficult), the evidence suggests that no country has been able to achieve significant improvements in participation rates in comparison to higher SES groups (Centre for the Study of Higher Education 2008, p. 71). For example, Canada has higher tertiary participation rates than Australia but 'high income students' are almost twice as likely to participate in university as young people from the lowest income quartile (DEEWR 2010, p. 53). In the United Kingdom young people from 'higher social groupings' are five to six times more likely to attend university than those from the most disadvantaged backgrounds (DEEWR 2010, p. 59).

6.1.1 Aspirations to attend university

Research suggests that SES background has an impact on students' aspirations to attend university. In the majority of OECD countries, including Australia, 15-year-olds from the lowest SES quartile are about half as likely to aspire to tertiary study compared with their peers from the highest SES quartile (OECD 2008, p. 25). A similar result was found in a survey of Australian Year 12 students in 2008. Based on the ABS Index of Education and Occupation (IEO), 66 per of students from high SES-IEO areas expressed a preference to attend university in comparison with 47 per cent of students from low SES-IEO areas (DEEWR 2009, p. v). The evidence is now fairly strong that decisions affecting the participation of low SES students in higher education are made many years earlier, during the first few years of secondary school.

A major study by Cardak and Ryan showed that among young people with similar levels of academic ability at 14 years of age, students from a low SES background were less likely to aspire to higher

education or to achieve a Year 12 qualification. In other words, young people from a low SES background are less likely to turn their early academic capability into successful Year 12 completion and subsequent participation in higher education (Cardak and Ryan 2009). Raising the aspirations of lower secondary school students from low SES backgrounds is a complex issue that must be tackled jointly by schools and higher education providers.

There are several examples in Australia of programs that aim to lift aspirations and entry to higher education, including school–university partnerships, mentoring schemes and residential programs. Non-profit organisations also operate programs, such as the Smith Family's 'Learning for Life' program, which involves the sponsorship of students from disadvantaged families (DEEWR 2010). Commonwealth, state and territory governments also provide a range of programs aimed at lifting aspirations and providing career advice. Some states also fund systemic early secondary initiatives as well as 'first in family' and transition programs linked with Year 12 completion.

Policies that aim to raise low SES students' aspirations need to acknowledge the complex factors that influence student aspirations across the SES spectrum. For example, for a young person from a low SES background, the short-term rewards of securing paid employment may outweigh any potential long-term rewards from remaining at school and pursuing higher education. A young person from a low SES background might also perceive the potential risks of engaging in full-time study—in terms of foregone income and the prospects of academic failure—differently from students from higher SES backgrounds (Savage 2011, p. 53).

The survey of Year 12 students mentioned earlier found that a range of expectations and attitudes were associated with the aspiration to attend university. For example, nearly three fifths (59 per cent) of respondents from high SES backgrounds thought that 'it seems to be the natural thing to go onto university after school' in comparison with one third (33 per cent) of respondents from low SES backgrounds (DEEWR 2009, p. 76).

As in Australia, other countries have recognised the importance of lifting the achievement rate of low SES school students as a way of improving participation in higher education. For example, in Canada policies are moving away from an explicit focus on financial assistance like scholarships and bursaries to early intervention schemes which address barriers and raise the aspirations of school students (DEEWR 2010, p. 97). Similarly, England's 'Aimhigher' program involved partnerships between universities and schools to offer visits, mentoring, summer schools and master classes (James 2008, p. 76).

6.1.2 School retention and achievement

It is well accepted that low SES students are less likely to complete secondary school (Year 12) and achieve an ATAR than young people from higher SES backgrounds. Furthermore, low SES students generally have lower ATAR scores and these were associated with lower levels of school achievement in Years 9 and 10 (Cardak and Ryan 2009).

Students with lower tertiary entrance scores were more typically students from low SES backgrounds, but with a given tertiary entrance score were equally likely to attend university, irrespective of their SES status (Cardak and Ryan 2009).

While improving the Year 12 (ATAR) attainment level of low SES students will undoubtedly improve participation levels, all 'ability-based' selection mechanisms have the potential to favour higher SES students as they tend to have educational, cultural and financial advantages. In recognition of the limitations of the ATAR process, universities have adopted more flexible selection processes, such as

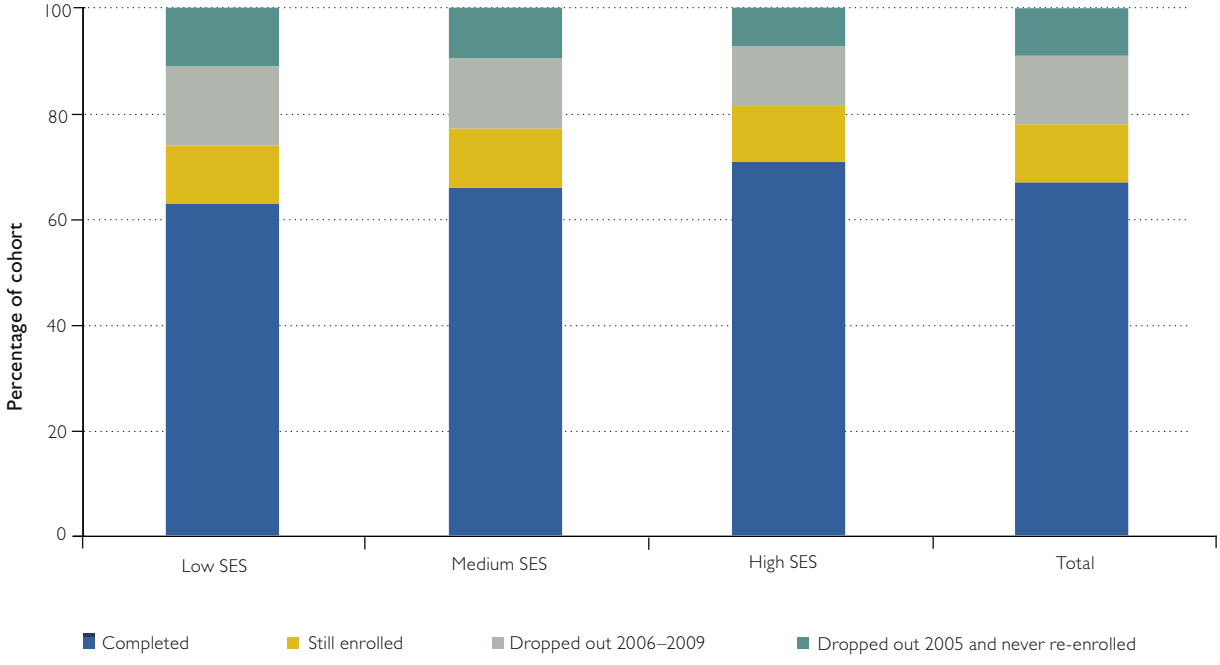
aptitude testing, individual interviews, recognition of prior learning, preparatory courses, auditions and portfolio assessments (James et al 2009). Universities may also take educational disadvantage into account and give more weight to scores from disadvantaged schools (Group of Eight 2011, p. v).

It is clear that further effort should be made by the secondary schooling system in partnership with the higher education sector. While there are specific COAG targets for school retention, these should be enhanced by explicit attention to aspiration as well as retention.

6.1.3 Retention beyond the first year of higher education

Evidence suggests that SES background has only a minor impact on higher education student retention rates. Analysis using Commonwealth Higher Education Student Support Numbers (CHESSNs) has been discussed in Chapter 4. They can also be used to more accurately track low SES (and all other) student attrition, re-enrolment in other institutions, and completions than was previously possible. This data indicates that while a higher proportion of undergraduate students from a low SES background drop out during or after their first year compared with students from a high SES background, the completion rate of low SES students is only slightly below the total rate for all students (Figure 6.3). The Bradley Review observed that once enrolled in higher education, low SES students achieve 97 per cent of the pass rates of medium and high SES students (DEEWR 2008, p. 30). Similarly, analysis using data from the Longitudinal Surveys of Australian Youth found that SES background does not affect retention, and instead, the strongest predictor of retention rates is a student's ATAR (Marks 2007).

Figure 6.3: 2010 status of the 2005 cohort of undergraduate students by SES status



Source: DEEWR administrative data based on Commonwealth Higher Education Student Support Numbers.

While analyses of participation data over the past decade suggest that the retention and completion rates of low SES students in higher education are almost comparable to the rate for all students, the Panel cannot be confident that this would be sustained if the overall participation rate of low SES students in higher education increased. As only 16 per cent of undergraduate enrolments are from

the lowest SES quartile, the students in this group may have characteristics that are not typical of all students from low SES backgrounds.

Two Australian studies have found that first-year university students from low SES backgrounds tend to outperform their peers from higher SES backgrounds with the same tertiary entrance score during the first year of university (Dobson and Skuja 2005; Birch and Miller 2006). Given the barriers low SES students have to overcome to reach university, the performance of these students might indicate that they are not representative of all potential students from the lowest quartile of the population.

The Panel cannot assume that all low SES students will have similar levels of performance or retention in higher education. Universities may face new challenges in meeting the educational needs of low SES students if they are successful in attracting a higher proportion of low SES students in the future.

Evidence from submissions to the Panel revealed concern among universities that the Government's participation agenda will result in an increase in the number of students who are less well prepared for higher education, including low SES students. It will be important to monitor the CHESSN data and continue to evaluate the intervention strategies at the institutional and systemic level.

6.2 Improving low SES aspirations and participation through the HEPPP

There was almost unanimous support in submissions for the Government's targets for participation by low SES students and students from other under-represented groups. However, on average, universities indicated that low SES students are more expensive to teach and support than other students, although it is not clear whether these views conflate the costs of low ATAR students with the costs of low SES students. If low SES students are to achieve outcomes comparable to other students and they are associated with higher costs of teaching and support, these costs should be recognised by government and reflected appropriately in the funding model.

In its response to the Bradley Review, the Government allocated additional funding to assist in increasing the participation rate of low SES students in higher education through the HEPPP.

The HEPPP comprises distinct 'partnership' and 'participation' elements. The partnership element of the HEPPP aims to assist universities to undertake outreach activities and build relationships with schools, VET providers and other organisations that comprise the community of potential students from low SES backgrounds. Funding will be available from late in 2011 for collaborations and partnerships that aim to raise low SES student aspirations and provide encouragement and support for low SES students to engage in higher education.

The 'participation' element of the HEPPP provides an incentive for universities to enrol low SES students and to help meet the costs of achieving the Government's participation target that 20 per cent of higher education students will be from the lowest SES quartile by 2020. The funding is provided to institutions as an enrolment loading in respect of each domestic low SES undergraduate. Over the first four years, funding per annum for participation is $42.9 million, $84.9 million, $133 million and then continues at $133 million (indexed) each year after that.

From 2013 the HEPPP incentive payments for low SES participation targets are drawn from a fixed allocation that means that the per capita amount awarded to institutions will reduce as the number of low SES students increases. This prediction is based on the evidence seen in the way the per capita

value of Enabling Loading has declined as the enrolment numbers have increased. This would be an undesirable outcome because universities will continue to bear the costs of programs and activities aimed at increasing the participation and retention of low SES students. While the ongoing costs of increasing low SES participation are not known, it is likely that the larger cohort of low SES students expected to enrol in university over the next decade will have different needs compared with the more highly selected group of low SES students that is currently in the higher education system.

There was broad agreement in submissions to the Panel that the participation funding that will be provided under the HEPPP is a positive initiative. However, views differed on the adequacy of its value, which will be approximately $1,000 per EFTSL. According to information provided by universities to the Panel, the estimated additional cost of increasing the participation of low SES students ranged from nothing to around $2,000 per EFTSL. The majority of institutions put the figure at between $500 and $1,000 per EFTSL. The University of South Australia argued that the costs of low SES students were approximately $2,000 per EFTSL. Regional universities and universities that enrol a high proportion of low SES students were more likely to emphasise the extra costs and support structures that were needed. In contrast, those universities where low SES students comprised a relatively small proportion of total enrolments were less likely to raise as an issue the extra cost of low SES students. It is possible that these institutions enrol only a selective group of high-performing low SES students who do not require additional support.

The Batchelor Institute of Indigenous Tertiary Education also raised concerns about funding for students with disability and the impact on learning outcomes. During consultations they referred to high levels of hearing impairment, diabetes, blindness and other disabilities among Indigenous students and the high costs of some treatment and supports, such as hearing loops, which were necessary for student participation. The Panel noted this concern and the fact that low SES disadvantaged Indigenous students present a range of costs in addition to those for educational support. However, the issue was considered generally beyond the scope of the Review since it relates to the Disability Support Program.

The Panel concluded that the cost to universities in meeting the needs of low SES students was a core component of funding for teaching and learning.

6.2.1 Supporting low SES participation in the long term

The Panel concluded that universities should continue to receive incentives to enrol low SES students and that such an incentive should be included as a loading on base funding.

The Panel therefore recommends that the participation allocation currently earmarked for distribution through the HEPPP should be maintained in real terms, at the value of $1,000 per EFTSL, as an enrolment loading for low SES students. This low SES loading would be implemented in a similar manner to the current Enabling and Regional Loadings which are part of the Commonwealth Grant Scheme and used to supplement base funding.

Submissions varied on whether to keep the HEPPP separate or whether it should be rolled into the base. Some universities argued that all funding for equity, including programs for Indigenous students and people with disability, should be rolled into the base as these costs were intrinsic to overall teaching costs. The Panel considers that as it is recommending simplifying the balance of contributions between government and students, a loading for low SES students is the best option, rather than rolling the funding into base funding.

6.2.2 Supporting school–university partnerships

The Panel was impressed at the number of partnership activities that universities reported they were developing. Many interesting and innovative arrangements are now being developed through universities taking the initiative to build stronger partnerships with schools and other organisations serving lower SES status communities. Universities are also responding to the call to build stronger partnerships with VET providers to provide successful articulated pathways between VET and higher education qualifications.

Allocation of the majority of the HEPPP partnership funding is starting in late 2011, so its impact cannot be assessed. When projects are implemented they will build on current initiatives to provide universities with further resources to improve partnerships with schools and education providers to improve participation. The HEPPP partnership funding will help universities expand their role in establishing pathways to higher education and will complement the range of assistance and support provided by universities, education providers and governments.

Partnership activities can be strengthened and improved in many different ways to ensure that they are sustainable in the longer term. The Panel recommends that the Government consider options to extend and strengthen partnership activities when the HEPPP is reviewed. In particular, the Panel suggests that the Government should consider expanding the funding for partnership activities to other parties such as VET providers, non-profit agencies, and especially schools. More direct funding of all partners, rather than just one—the universities—may assist in widening the range of activities and initiatives aimed at increasing the incentives for low SES students to engage in higher education. However, the Panel considers it important that there should be additional funding allocated, rather than expecting expansion of these activities under the existing funding allocation.

6.3 The role of enabling courses and the Enabling Loading

The Enabling Loading provides targeted funding within the CGS to universities for courses that provide additional academic support to students either as a pathway to award study or in addition to their regular classes. The funding is specifically attached to places in courses that prepare or assist a person to undertake a course that leads to a higher education award. Although enabling places can be offered as full fee–paying places, the majority of enabling students (97 per cent) are in Commonwealth supported places. Universities choosing to offer Commonwealth supported places in enabling courses are unable to charge a student contribution, as they do for undergraduate students, and so receive the Enabling Loading in lieu of student contributions and in addition to CGS funding for those Commonwealth supported places. Total estimated funding in 2010 for all enabling places was $66 million (including both the usual CGS amount for the unit of study and the Enabling Loading). The Enabling Loading accounts for $14 million of this amount.

Enabling courses are not specifically targeted to under-represented groups, but approximately 50 per cent of students enrolled in enabling courses are identified as being from several equity groups such as Indigenous students, regional and remote students and low SES status students, compared with 30 per cent of all domestic undergraduate enrolments. The remainder comprises students who for a range of reasons are underprepared. Those students are technically outside equity categories and, while not contributing to the 20 per cent low SES target, are nonetheless part of wider attainment goals.

Enabling courses can provide either a distinct pathway to higher education, or may be a supplementary course undertaken by students who have qualified by other means (for example,

secondary education). Each stream needs to be considered separately, as they have very different roles to play in supporting underprepared learners in higher education.

6.3.1 Enabling courses as a pathway to higher education

Enabling courses as pathways

Students engaging in enabling courses as a pathway to higher education are those students who generally would not otherwise qualify for entry to an undergraduate course. There has been steady growth in the number of students accessing this option. In 2010, there were 4,061 students who had progressed to a Bachelors degree level course out of the 12,411 students who undertook a pathway enabling course in 2009.

As would be expected, students who have entered higher education from enabling pathway courses generally have lower educational outcomes compared with students who have entered from other pathways. However, it was not possible for the Panel to conduct extensive analysis of the effectiveness of enabling courses as a pathway to higher education as there was no reliable control group to assess whether enabling courses were a more effective means of overcoming education disadvantage than other options.

Alternative pathways to higher education

There are a number of pathways to higher education other than enabling courses. Although institutions set their own policies and arrangements, diplomas and advanced diplomas are often sufficient for entry into undergraduate courses. Many institutions offer vocational education and training (VET) pathways and qualifications, either collaboratively with TAFE providers and other training providers or on their own. For example, the University of Southern Queensland offers Foundation Diplomas in business, engineering, social science and science through its Open Access College.

Institutions also work with TAFE providers to offer dual award courses, which provide students with direct entry into an undergraduate course and credit for a full year of study after completing a linked VET award. Examples include the Diploma of Business/Bachelors of Business offered by the Central Queensland Institute of TAFE and the Central Queensland University and the Diploma of Nursing/ Bachelors of Nursing offered by the Southbank Institute of Technology and the University of the Sunshine Coast.

In some states, students may have the option of studying a Certificate IV in Adult Tertiary Preparation Program which provides an ATAR for entry to university.

There are also programs offered in conjunction with high schools, such as the University of the Sunshine Coast (USC) program which allows high school students to study at USC and earn credit towards an undergraduate degree while still completing Years 11 and 12. At least one university also offers entry pathway programs in conjunction with adult re-entry schools, offering a one-year full-time program to prepare students for undergraduate study.

Finally, although not a prior study pathway to university study, most universities also offer special entry provisions. Students who have experienced educational disadvantage and had their academic results affected can apply for consideration of this disadvantage when applying for their studies. Disadvantage is normally defined as circumstances beyond the students' control, such as lack of opportunity due to ethnic, cultural, gender, language, disability and health difficulties such as

hearing impairment or chronic medical conditions, and compassionate circumstances such as trauma, bereavement or relocation.

Most pathways to entry incur some form of cost to the student. For example, students undertaking a VET course are subject to the same course costs regardless of whether they will use that course to qualify for entry to higher education, although some students may be eligible to access VET FEE-HELP. However, unlike enabling courses, these pathways also offer students a qualification and are generally counted as credit towards undergraduate study.

The role of enabling pathway courses in the tertiary sector

The place of enabling courses in the new tertiary sector is somewhat unclear. Enabling courses provide a pathway to university for disadvantaged learners, but numerous other pathways are available, including lower-level qualifications. The rationale for funding enabling courses in which students are exempt from contributing to the cost of the course contrasts to the funding of VET programs or other pathway courses where students gain a qualification on completion but course fees are charged. This reflects the respective responsibilities of state and territory governments and the Australian Government for VET and higher education, but the current cost differential could result in disadvantaged learners choosing less appropriate pathways based on financial considerations only.

Enabling courses are not part of the Australian Qualifications Framework and seem not to have been subject to a targeted review of effectiveness despite having existed since 1990. Since enabling courses were first introduced the VET – higher education interface has seen enormous changes. The role filled by pathway enabling courses may be diminishing or provided more effectively through other pathway models. A report by the Department of Education, Science and Training in 2004 which focused on Indigenous participation in higher education found that enabling courses had limited success in encouraging students to access higher education and suggested that VET-based enabling courses may be better targeted to meet the needs of underprepared learners rather than university-based courses (DEST 2004).

The Panel recommends that the Government should review the role of enabling courses in the tertiary education sector in a way that includes an assessment of the effectiveness of enabling courses compared with other forms of pathway to higher education. It will be essential in the new demand driven environment to ensure that public funding is provided in the most effective manner to support students to enrol in higher education, and to encourage students to make decisions about appropriate pathways that are not based on financial considerations.

6.3.2 Enabling courses as a support mechanism for disadvantaged learners

The second stream of enabling courses is for those students who generally are qualified to enter higher education, particularly from secondary education, but who are academically underprepared and need additional help with their studies. Of all students in enabling courses in 2009, those taking them as concurrent remedial courses accounted for nearly 36 per cent. The total number of students undertaking concurrent enabling courses is relatively low, 6,887 out of a total of 19,298 enabling students.

Unlike enabling students in pathway programs, it is possible to undertake reasonable analysis of outcomes for concurrent enabling students by using as a control group students who did not undertake enabling study but who came into university through the same pathway or who have the

same ATAR. This analysis suggests that enabling courses are successful in increasing the retention of students in higher education. Across nearly all ATAR ranks and types of pathways, students who took an enabling course have better retention than comparable non-enabling cohorts. For example, of students with an ATAR below 40 in 2009, 86 per cent of those who undertook enabling and undergraduate courses concurrently remained in study in 2010, compared with 82 per cent not in enabling courses.

It is possible to speculate as to other differences between the two cohorts that might have led to certain students perhaps at greater risk of withdrawing being encouraged to undertake enabling courses, but this information was not available. In addition, students who undertake enabling study concurrently have consistently higher retention rates than students accepted on the same basis who do not undertake enabling study. This effect is particularly pronounced for students who are accepted on the basis of VET study, with 85 per cent of these students retained in study in 2010 if they completed an enabling course concurrently, compared with 78 per cent if they did not.

It is interesting that students undertaking concurrent enabling study generally have lower progress rates than students who do not complete enabling study. This is to be expected as students who complete enabling courses are typically less academically prepared than those who do not. It would normally be expected that low progress rates would be associated with low retention rates. A situation where enabling students fail their first-year units of study more often but are more likely to continue on to second year may suggest that enabling courses are providing more than just academic preparation and also help the adjustment to the university environment.

Given this evidence, the Panel considered that although the place of enabling courses as a pathway to higher education needs to be reviewed, enabling courses as remedial courses have a clear and important place in retaining students in higher education. These courses are likely to become more important as universities enrol increasingly academically underprepared and educationally disadvantaged students. Enabling courses have been identified as 'essential if the sector is to meet the Federal Government's access and participation goals' (University of Newcastle, submission no. 80, p.1). Other submissions made similar comments. Additionally, a paper prepared for the Group of Eight in 2009 identified that increased employer demand for qualitative skills, especially for engineering degrees, means universities may need to increase their remedial enabling load to support students to succeed in a range of courses, particularly in mathematics and science (Brown 2009). It is therefore important that the funding for enabling places be appropriate and set at a level that does not discourage institutions from offering these courses to all students who would benefit.

6.3.3 Clarifying the role of the Enabling Loading

Under the current model, the Enabling Loading is paid as a per capita amount, but the total amount of funding is fixed. As enrolments in enabling courses have increased, the loading paid per student has decreased. Since 2005, increased enrolments in enabling courses have resulted in a steady reduction in the amount of enabling funding per student place. Compared with $3,592 in 2005 when the total pool was $12.2 million the rate per EFTSL was estimated at $2,044 in 2011 when indexation brought the total pool to just under $14 million. This was a reduction of 43 per cent in the rate per student over this period.

Several submissions to the Panel raised concerns that the structure of the Enabling Loading and the reduction in value over time were disincentives for universities to offer Commonwealth supported places in enabling courses. In its submission, the University of Newcastle (submission no. 80, p. 4) argued that by capping the funding for Commonwealth supported places providers were discouraged from recruiting more students.

The funding pressures on enabling courses are likely to become more acute under the demand driven system. Although enabling enrolments are likely to increase, the total funding amount for the Enabling Loading will not change.

The recommended review may require more extensive longitudinal data collection than is presently available. In the interim the Government should set the per capita level of Enabling Loading to the 2010 per capita rate, indexed for subsequent years. Ideally the per capita rate would apply to concurrent enrolments only while a review of enabling pathway courses is undertaken, but the Panel realises the administrative burden this may create. However, the Panel does give urgency to conducting a review of the pathways so that a final set of arrangements for enabling courses and the Enabling Loading can be implemented as soon as possible.

6.4 Monitoring financial barriers

Some studies have suggested that the tuition cost of higher education may have an impact on the attitudes and aspirations of low SES students and their families while at school. For example, a report by James states:

> The financial cost of studying at university, and the perceptions of the cost, may have significant influence on the post-schooling choices of students from low SES and rural backgrounds ... low SES students are more likely than other students to believe the cost of university fees may stop them attending university (39 per cent, compared with 23 per cent of higher SES students) (2008, p. 35).

The Panel commissioned a study (Deloitte Access Economics 2011b) to investigate whether changes to the level of student contributions or the repayment thresholds under Australia's income-contingent loan scheme had an impact on student demand for higher education, with particular reference to students from low SES backgrounds.

The study found that the reforms to HECS and HECS–HELP in 1997 and 2005 when fees rose and repayment thresholds changed, were linked to a reduction in the total number of university applications, compared with the levels that would have been expected had the reforms not taken place. The study estimated that the reforms on these two occasions led to around 18,000 fewer applications per year (8 per cent) compared with those that would have been expected had the reforms not taken place. Despite this impact, the total number of applications continued to rise in those years. As changes to the repayment thresholds were made at the same time as changes to contribution levels, it is not possible to identify the cause of the identified changes.

The consultant was not able to isolate the impact of the policy changes to HECS/HECS–HELP and observed that the reduction in applications may have been influenced by other factors, such as changing workforce or economic conditions. Additionally, the introduction of differential HECS amounts in 1997 resulted in some courses with high private benefits on average having the highest contributions. This may have cushioned the impact on demand, as students tend to study these courses regardless of cost as it is perceived that the benefits will outweigh the costs. While the study was not able to examine whether the impact on applications varied according to SES groups due to data limitations, analysis of university commencements found that low SES students appeared to be more affected by price changes than other students. However, the proportions were very small. The analysis found that a 1 per cent increase in the price of all courses appeared to result in the share of commencements by students from a low SES background decreasing by 0.042 of a percentage point. Students from high SES backgrounds showed no price sensitivity to changes in relative price.

While the Panel was concerned about the implications of these findings regarding the impact of the level of student fees on participation by low SES students, it notes that the consultant's findings differ from some previously published studies (Chapman and Ryan 2003, Marks 2007) which found that the introduction of HECS and the 1997 policy changes did not deter low SES students from participating in higher education. Additionally, a study by Gilboa and Justman (2009) found that in the presence of an income-contingent loan scheme there will be no impact on demand from increasing fees.

A number of submissions to the Panel stated that there was little convincing evidence that increases in student contributions had deterred participation in higher education or that low SES students are more debt averse than other groups. Nevertheless, some stakeholders expressed concern that an increase in fees could deter participation among prospective students (National Union of Students, submission no. 112). Others expressed concern that there may be a point above which fee levels begin to have an impact on participation rates (e.g The Australian National University College of Arts and Social Sciences, submission no. 101).

The Panel recognises that if the Government adopts its recommendations concerning student contributions, it will lead to higher student contributions in some disciplines. Potentially, this may be a disincentive for some students to enrol in higher education courses. However, the Panel also acknowledges that not all parts of a pricing system have to be progressive for the system as a whole to be progressive. The Panel therefore suggests, if evidence emerges that changes to student contribution levels appear to be having an impact on student enrolments in some fields, that the Government should address such concerns directly through targeted student income support, labour market programs or higher education programs.

6.5 Summary and recommendations

The terms of reference for the Review asked the Panel to take into account the Government's equity agenda of increasing access and participation of disadvantaged groups by providing universities with financial incentives to enrol low SES students when developing policy options on student contributions. The Panel considers that it is consistent with the purposes of the base funding system for it to promote access to universities and broaden participation in higher education.

Supporting the cost of low SES students

The Panel notes that the proportion of low SES students in higher education has remained low over the last decade but is likely to rise in response to the Government's target that 20 per cent of undergraduate students should be from a low SES background by 2020. Universities are likely to face new challenges in meeting the educational needs of low SES students as the proportion of low SES students enrolling in higher education increases.

Recommendation 25: Supporting the cost of low socioeconomic status students

The Australian Government should continue to support the differential cost of students from low socioeconomic backgrounds.

Monitoring impact on participation by low SES students

It has been suggested that the levels of student contribution towards the cost of higher education influence rates of enrolment among students from lower SES backgrounds. Although the evidence for this claim is contested, the Panel recognises that its recommendation to rationalise student contribution levels will lead to higher student contributions in some courses of study. The Government should therefore monitor the impact of changes to student contribution levels on low SES enrolments. Should it appear that the changes are having an impact on low SES enrolment patterns, the Panel considers that a targeted program providing incentives for universities to enrol low SES students would be the most appropriate response. Pursuing such objectives through a targeted program would be more effective than making changes to levels of student contributions in the base funding system that will impact on all students rather than only the targeted group.

Recommendation 26: Monitoring impact on participation by low socioeconomic status students

The Australian Government should monitor the potential impact of the changes in student contribution levels recommended by the Panel on the levels of participation by low socioeconomic status (SES) students, so that should the levels of participation in some courses fall below desirable levels, the Government could address this through appropriate targeted programs that offer incentives for institutions to enrol low SES students in particular courses of study.

Funding for the Higher Education Participation and Partnerships Program

The total funding provided under the HEPPP as an enrolment loading in respect of each domestic undergraduate low SES EFTSL increases in the first two years, but from the third year the forward estimates provide $133 million per annum. The Panel considered that if participation of low SES students continued to grow, the funding should also grow so that the effective per capita amount does not diminish.

Recommendation 27: Funding for the Higher Education Participation and Partnerships Program

The participation component of the Higher Education Participation and Partnerships Program (HEPPP) should be uncapped and paid on a demand driven basis to universities as a low socioeconomic status (SES) loading on base funding. In order to maintain the value at full implementation of the HEPPP in 2012 of about $1,000 per low SES student equivalent full-time student load, the funding allocation should be increased.

Expanding funding for partnerships

The Panel was impressed at the array of partnership and collaborative activities that universities are currently developing in response to the partnerships element of the HEPPP. Affecting aspirations, especially among secondary school students, is complex. An evaluation of the effectiveness of the HEPPP is being planned. The Panel considered that one way to strengthen and improve partnership activities would be to extend the funding for partnership activities to all parties in the partnership, such as schools, VET providers and non-profit agencies, and suggests that this be considered following the Review.

Recommendation 28: Expanding funding for partnerships

Following the planned review of the effectiveness of the partnerships component of the Higher Education Participation and Partnerships Program, the Australian Government should consider expanding the partnerships component of the program. Funding could be provided directly to partners such as schools, vocational education and training providers and agencies working with disadvantaged communities.

Adjustment to Enabling Loading and review of effectiveness of courses

The Enabling Loading is a targeted program that provides support for students in preparing for study in courses leading to a higher education award. However, as the total amount of funding is fixed, the per capita amount is almost half the value it was in 2005. For this reason the Panel recommends that the funding should be demand driven, uncapped, indexed and set at the per capita level for 2010.

While concurrent enabling courses appear to be successful in contributing to retention of underprepared students in higher education, the place of pathway enabling courses in the new tertiary education sector, with its multiple pathways to higher education, is unclear. The absence of student contributions for these enabling courses compared with award vocational courses may lead students to make inappropriate choices and for this reason, the Panel recommends the comparative effectiveness of these pathways should be examined. Since the data may take some time to obtain, the funding should be set at the per capita rate for 2010 as an interim measure.

Recommendation 29: Adjustment to Enabling Loading and review of effectiveness of courses

A review should be conducted to assess the effectiveness of pathway enabling courses in comparison to other pathways to higher education, and in the interim the Enabling Loading should be set at the 2010 per capita rate (indexed for subsequent years).

Acronyms and abbreviations of titles

ABS	Australian Bureau of Statistics
AEI	Australian Education International
ALTC	Australian Learning and Teaching Council
APA	Australian Postgraduate Awards
AQF	Australian Qualifications Framework
ARC	Australian Research Council
ATAR	Australian Tertiary Admission Rank
AUQA	Australian Universities Quality Agency
AUSSE	Australasian Survey of Student Engagement
BURF	Better Universities Renewal Fund
CDP	Capital Development Pool
CEQ	Course Experience Questionnaire
CGS	Commonwealth Grant Scheme
CHESSN	Commonwealth Higher Education Student Support Number
COAG	Council of Australian Governments
CPI	Consumer Price Index
DEEWR	Department of Education, Employment and Workplace Relations
DIISR	Department of Innovation, Industry, Science and Research
EFTSL	equivalent full-time student load
EIF	Education Investment Fund
FOE	field of education
FTE	full-time equivalent
GDP	gross domestic product
HDR	higher degree by research
HECS	Higher Education Contribution Scheme
HECS–HELP	*see* Glossary
HEFCE	Higher Education Funding Council of England
HELP	Higher Education Loan Program
HEPPP	Higher Education Participation and Partnerships Program
HESA	Higher Education Support Act 2003
HWA	Health Workforce Australia
ICT	information and communication technology
ISCED	International Standard Classification of Education
NHMRC	National Health & Medical Research Council
NUS	National Union of Students
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing Power Parity
R&D	research and development

RFM	Relative Funding Model
SES	socioeconomic status
SRE	Sustainable Research Excellence
TEFMA	Tertiary Education Facilities Management Association
TEQSA	Tertiary Education Quality and Standards Agency
VET	vocational education and training
WIL	work-integrated learning

Glossary

Actual prices: Actual prices are prices in nominal value. Nominal value is expressed in money of the day.

Australian Tertiary Admission Rank (ATAR): The primary criterion for entry to undergraduate university programs, awarded to students who complete Year 12.

Base funding clusters: The Commonwealth Grant Scheme funding and student contributions for a discipline or a set of disciplines.

Bradley Review: The Review of Australian Higher Education, chaired by Professor Denise Bradley AC. The Bradley Review delivered its final report in December 2008.

Browne Review (Independent Review of Higher Education and Student Finance in England): The review of higher education funding in England which delivered its final recommendations in October 2010.

Commonwealth supported place: A higher education place which is funded by the Australian Government through the Commonwealth Grant Scheme. Previously called a 'HECS' place.

Education Investment Fund (EIF): Announced in the 2008–09 Budget to support world-leading, strategically focused infrastructure investments that will transform Australian tertiary education and research.

Equivalent full-time student load (EFTSL): One EFTSL is a measure of the study load, for a year, of a student undertaking a course of study on a full-time basis.

Full-time equivalent (FTE): A member of staff who at a reference date has a full-time work contract in respect of their current duties, has an FTE of 1.00. The FTE for a member of staff who at a particular reference date has a fractional full-time work contract in respect of their current duties (ie. is working a fraction of a normal full-time working week, will be less than 1.0).

Higher Education Contribution Scheme (HECS): The system introduced in 1989 which required higher education students in places subsidised by the Australian Government to make a contribution to the cost of their course, underpinned by income-contingent loans. 'HECS' places are now called Commonwealth supported places for which there is a 'student contribution amount' with loans and discounts for upfront payment under HECS–HELP.

Higher education institutions: Refers to all institutions offering accredited higher education qualifications. This includes both public and private and self-accrediting and non-self-accrediting institutions.

Higher Education Loan Program (HELP): A program to help eligible students pay their student contributions (HECS–HELP for Commonwealth supported students), tuition fees (FEE–HELP for fee–paying students) and overseas study expenses (OS–HELP) through loans that are repaid through the taxation system (through either compulsory or voluntary repayments). HECS–HELP also covers the discount that Commonwealth supported students receive if they pay student contributions up front. There are bonuses for voluntary repayments.

Higher Education Support Act 2003 (HESA): The main legislation governing funding for higher education in Australia.

Income-contingent loan: A loan for which repayments are not required unless a person's income reaches a certain threshold and with repayments that vary according to income above that threshold. HELP loans (and previously HECS and loans under other schemes that have been subsumed by HELP) have income-contingent repayment arrangements.

Low socioeconomic status (SES) students: The Index of Education and Occupation from the latest available Australian Bureau of Statistics Socio-Economic Indexes for Areas is used. The index value for each postcode is used to identify a postcode nationally as low (bottom 25 per cent of the population), medium (middle 50 per cent) or high (top 25 per cent). The number of students from a low SES background is then calculated by summing the number of students whose home postcodes as reported by university enrolment data are low SES postcodes.

Productivity: Productivity is defined as the ratio of output to input for a specific production situation.

Real terms (constant prices): Nominal value is the value of the grants expressed in the money of the day, that is, the actual amount of cash received by the universities each year. Real value is the nominal value adjusted for the effects of inflation so as to show the change in the purchasing power of the funding received. Unless otherwise stated in this report the index used to calculate constant prices is the Consumer Price Index Weighted Average of Eight Capital Cities [Australian Bureau of Statistics Cat. no. 6401.0] and the base year is 2009.

Sector: Categories of educational activity which are defined in terms of course type and award. Sectors within tertiary education are the higher education sector and the vocational education and training sector.

Tertiary education: In Australia tertiary education is generally understood to be post-secondary education. The OECD defines tertiary education as programs at International Standard Classification of Education (ISCED) levels 5B, 5A and 6. Programs below ISCED level 5B are not considered tertiary level (OECD 2010).

Transforming Australia's Higher Education System: The Australian Government's response to the Bradley Review, announced in 2009.

University: An Australian university is an institution which meets nationally agreed criteria and is established or recognised as a university under state, territory or Commonwealth legislation (Section 1.13, National Protocols for Higher Education Approval Processes).

Vocational education and training (VET): Vocational education and training provides skills and knowledge for work through a national system of public and private training providers. A wide range of qualifications are available, including certificates, diplomas and some graduate courses.

Appendix 1: Technical and statistical notes

Notes for Table 2.1

(Average base funding level per student in selected countries)

a. Other currencies converted using OECD Purchasing Power Parities for 2009 (OECD 2011b).

b. Source: State Higher Education Executive Officers 2010. Includes all two and four year public institutions. Government contribution excludes state appropriations for research, agricultural extension and medical education. Student contribution is net tuition revenue; ie gross amount less state and institutional financial aid, tuition waivers or discounts, and medical student tuition and fees. FTE students include HDR and exclude medical students.

c. Source: College Board 2011. Student contribution is average published tuition for an undergraduate student. Actual cost to student estimated at approximately $1,700 after netting for institutional, state and federal grant aid and federal tax benefits.

d. Source: Secretariat estimates using Jen and Bowermann 2011. Government contribution per FTE student calculated by dividing state appropriation by the FTE of students resident in Michigan (ie. out-of-state and international students who pay higher tuition fees are excluded) this differs from standard US figures which include all student FTE and are therefore lower. HDR students are included in above because of lack of separate accounting for them in data sources. Quoted student contribution rates are for resident students at undergraduate/postgraduate (including HDR) level. Michigan has no untied government research funding so base funding levels are more directly comparable with base funding plus research block grant funding in Australia.

e. Source: DEEWR estimates based on Higher Education Statistics Agency 2011 and Higher Education Funding Council for England 2009. Government contribution is HEFCE teaching funds per UK and other EU student FTE. Teaching funds include 'Widening participation', 'Teaching enhancement and student success', 'Other targeted allocations' and 'Other recurrent teaching grants' funds, which in aggregate are 17 per cent of total teaching funding.

f. Estimate based on data in Danish Ministry of Education (2010) and personal communication with the Danish Ministry of Education. Estimate based on average taximeter payment of DKK70,000 plus annualised completion bonus of DKK14,000. Actual funding will be less than estimated base funding rates because funding is paid on completions rather than load: expected Bachelors completion rates are approximately 74 per cent (Danish Ministry of Education 2010, p. 92).

g. Source: Tertiary Education Commission 2011. Based on government funding (EFTS: Vote Education), Fee income (Domestic), EFTS (TEC funded).

h. Secretariat, using DEEWR data.

Technical notes for Chapter 5

Below are further explanations of several of the terms and concepts used in Chapter 5.

Externalities

An externality is a cost or benefit incurred by a third party (i.e. a party who is not the buyer or seller of a good or service) for which no compensation is paid. In the case of higher education, externalities are the benefits (or costs) experienced by the wider society, rather than just the individual studying. For the purposes of this report, the term 'public benefit' has been used to refer to externalities.

Public benefits

Public benefit is not necessarily an economics term, but has been used in this report to reflect terminology in existence within the higher education sector and community. Public benefits are defined as the positive externalities from higher education. Public benefits can be either pecuniary (financial) or non-pecuniary (non-financial).

The financial public benefits are primarily the additional taxation revenue gathered by governments as a result of higher wages earned by graduates. Graduates also generate increased productivity in the workplace, which provides a financial return to the government. Pecuniary benefits can be quantified in a relatively straightforward manner. For example, to estimate public benefits Professor Chapman calculated the additional taxation revenue generated over a graduate's lifetime.

Non-pecuniary benefits of higher education are more complex and difficult to both define conclusively and to then calculate. These benefits include lower crime rates or improved public health that are associated with higher levels of education. There have been numerous attempts to quantify these benefits, but it is not possible to be precise.

Private benefits

The private benefits of higher education are those captured by the graduate. They are primarily, but not wholly, the increased wages for graduates. They also include the ability to obtain a more fulfilling job, better personal and family health and higher levels of education for the children of graduates and improved life satisfaction activities. There is a range of evidence that supports a link between an individual's level of education and higher wages. For the purposes of this report, the measure of private benefits was limited to higher wages but it should be borne in mind that this represents a conservative estimate. As with public benefits, private benefits are difficult to quantify.

Calculations used to estimate benefits

Public and private benefits can be calculated either as a rate of return or as a net present value. Both calculations can be used to make decisions about the value of an investment, and both are used in the wider literature on the benefits of higher education. In this report, both calculations have been used depending on the context.

Net present value

The net present value of an investment is the difference between the present value of future cash flows from an investment and the present value of the initial investment amount. The present value is calculated by discounting the expected cash flows by the required or estimated rate of return.

A discount rate is applied because resources have alternative uses. These uses may include other forms of investment (such as research and development, physical infrastructure) or forms of current enjoyment due to higher levels of consumption. A discount rate is used like a shadow price for these foregone opportunities.

To calculate net present value a discount rate needs to be selected. The normal candidate is the real rate of return from alternate forms of investment, although there is a wide range in estimates of returns.

For higher education, the present value of private net benefits is the difference between the lifetime monetary gain from completing additional qualifications and the cost of making the investment in those qualifications.

Rate of return

In technical terms, the rate of return to an investment is the discount rate that makes the net present values of all cash flows equal to zero. In other words, it is the interest rate at which the sum of all future cash flows equals the initial cash investment. Simplified, the rate of return to an investment is the rate of profit that will be generated by a project, or the rate of return to the initial investment. In the case of higher education, the public rate of return is the return to society from the investment into more higher education. Similarly, the private rate of return is the return that students will obtain from their investment.

Pure human capital (PHC)/ability bias

The PHC is the assumed contribution of an individual's education to their returns from higher education after taking into account their innate ability. Some of the higher wages a graduate receives over a non-graduate may be due to a difference in innate ability and not related to differences in education. Therefore, it is possible that not all of the additional taxation revenue or public benefits generated by a graduate are due to the contribution of higher education. This needs to be considered when calculating the public benefits of higher education.

For the purposes of his research, Professor Chapman assumed that an individual's higher education study contributes approximately 25 to 40 per cent of the higher wages that the individual achieves after graduation. This means that an individual's innate ability is responsible for 60 to 75 per cent of their higher wages. These estimates were derived from the existing literature.

Ability/motivation adjustment

The ability/motivation adjustment applied to calculations of public benefits is a result of the need to account for the 'screening hypothesis'. This hypothesis states that education acts as a signalling device to employers. It indicates those people have higher ability/motivation, as indicated by their completion of higher education study, will potentially be more desirable employees. This needs to be accounted for by any calculation of public benefits, as it indicates that a proportion of the higher wages achieved by a graduate (and so taxation revenues that they provide) are due to employer biases towards more highly educated employees.

For the purposes of his report, Professor Chapman assumed that the signalling aspect of higher education accounts for about 10 per cent of all benefits generated by higher education. This figure is based on estimates within existing literature.

Appendix 2: Higher education providers receiving Commonwealth Grant Scheme funding

Table A providers

- Australian Catholic University (ACU)
- Batchelor Institute of Indigenous Tertiary Education (Batchelor)
- Central Queensland University (CQU)
- Charles Darwin University (CDU)
- Charles Sturt University (CSU)
- Curtin University of Technology (Curtin)
- Deakin University (Deakin)
- Edith Cowan University (ECU)
- Griffith University (Griffith)
- James Cook University (JCU)
- La Trobe University (La Trobe)
- Macquarie University (Macquarie)
- Monash University (Monash)
- Murdoch University (Murdoch)
- Queensland University of Technology (QUT)
- RMIT University (RMIT)
- Southern Cross University (Southern Cross)
- Swinburne University of Technology (Swinburne)
- The Australian National University (ANU)
- The Flinders University of South Australia (Flinders)
- The University of Adelaide (Adelaide)
- The University of Melbourne (Melbourne)
- The University of Queensland (Queensland)
- The University of Sydney (Sydney)
- The University of Western Australia (UWA)
- University of Ballarat (Ballarat)
- University of Canberra (Canberra)
- University of New England (UNE)
- University of New South Wales (UNSW)
- University of Newcastle (Newcastle)
- University of South Australia (South Australia)
- University of Southern Queensland (USQ)

- University of Tasmania (Tasmania)
- University of Technology, Sydney (UTS)
- University of the Sunshine Coast (USC)
- University of Western Sydney (UWS)
- University of Wollongong (Wollongong)
- Victoria University (VU)

Table B providers

- University of Notre Dame Australia (Notre Dame)

Other providers

- Avondale College
- Christian Heritage College
- Northern Melbourne Institute of TAFE
- Holmesglen Institute of TAFE
- Tabor Adelaide
- Tabor College Victoria

Appendix 3: Terms of Reference

Context: Australian Government reforms and commitments

In response to the findings of the Bradley Review of Australian Higher Education, the Australian Government introduced a comprehensive package of reforms to Australian higher education in the 2009 Budget. The reform plans were articulated in '*Transforming Australia's Higher Education System*', which stated the purpose as enabling Australia to participate fully in, and benefit from, the global knowledge economy. 'Funding that meets student demand—coupled with ambitious targets, rigorous quality assurance and full transparency—is the only way Australia can meet the knowledge and skills challenges it faces. In that process the nation must provide educational opportunity for all, not just the few'.

The Government response is designed to support high quality teaching and learning, improve access and outcomes for students from low socioeconomic backgrounds, build new links between universities and disadvantaged schools, reward institutions for meeting agreed quality and equity outcomes, improve resourcing for research and invest in world class tertiary education infrastructure. The Government's package of measures is designed to transform the scale, potential and quality of the nation's universities and open the doors of higher education to a new generation of Australians.

The review of base funding levels and cluster funding was commissioned in response to the Bradley Review. The Review took place in a rapidly changing higher education environment, in anticipation of demand driven funding for teaching and learning to commence in 2012. Postgraduate courses are becoming a much more common entry into the professions, rather than a form of professional upgrading. The proportion of the population participating in higher education is increasing.

As announced in its response to the Bradley Review, the Government is now commissioning a review of base funding levels and cluster funding. This review is the next element in the Government's commitment to delivering on its reform package.

Terms of Reference

On 26 October 2010, the Minister for Tertiary Education, Chris Evans, announced the following terms of reference for the Higher Education Base Funding Review. This announcement marked the formal commencement of the review:

This review is to deliver the Government's commitment to:

> 'commission a review of the base funding levels for teaching and learning in higher education to ensure that funding levels remain internationally competitive and appropriate for the sector, together with work on options for achieving a more rational and consistent sharing of costs between students and across discipline clusters as recommended by the Bradley Review. This review will report in 2011.'

The review will establish enduring principles to underpin public investment in higher education, including the appropriate balance between public and private contributions towards the cost of

undergraduate and postgraduate education. The review should identify and articulate the principles that should underpin the appropriate distribution of funding by discipline, the share of funding from Government, students and other sources and the best funding model to deliver increased teaching quality.

Benchmarks

The review will identify international benchmarks and trends for undergraduate and postgraduate coursework education and the level of base funding required for Australian universities to deliver competitively. Without limiting the matters considered by the review, it should identify international benchmarks for course quality and student engagement.

In identifying benchmarks the review should have regard to the future development of a standards framework by the Tertiary Education Quality and Standards Agency.

Cost relativities

The review will examine the cost relativities of undergraduate education for different disciplines and compare this with the funding relativities of the Commonwealth Grant Scheme funding clusters.

The review will examine the cost of delivery of quality postgraduate education and whether it is higher than undergraduate education and, if so, whether this is in general or is a feature of particular disciplines or teaching methodologies.

Student contribution amounts

The review will consider the relative maximum student contribution amounts for different disciplines and propose options for setting maximum student contribution amounts to reflect a fair contribution to the cost of delivering high quality courses and the level of public and private benefit.

In developing options the review should ensure that they are consistent with the Government's equity agenda of increasing access and participation of disadvantaged groups by providing financial incentive to enrol low socioeconomic status students. It should be consistent with the Government's agenda to ensure that fees should not be a barrier to participation in higher education.

Access

In considering matters related to undergraduate student places at public universities, the review should be conducted on the basis of the Government's commitment to abolish full fee places for domestic undergraduate students at public universities.

Options

The review will provide advice and make recommendations to the Government on:

- what is needed to ensure that Australian Government funding for Australian undergraduate and postgraduate coursework education remains internationally competitive and appropriate for the sector
- options for achieving a more rational and consistent basis for:
  - funding across discipline clusters

  - the student contributions for different disciplines and for undergraduate and postgraduate coursework study
- options to ensure that universities are provided support on the basis of the cost of delivering courses of high quality while students make a contribution which bears some relation to the private return for their education
- options for funding models that give all institutions a strong incentive to focus on investing in and delivering high quality teaching and maintaining strong academic standards
- options to maintain the substantial financial incentive for institutions to enrol low socioeconomic students as the system grows.

Completion of report

The review will provide a report to the Government at the end of October 2011.

Appendix 4: Conduct of the Review

The conduct of this review

The Higher Education Base Funding Review Panel was committed to wide engagement and at the end of 2010 released a consultation paper to provide a framework to obtain views and evidence about the major issues identified in the terms of reference. To assist those making submissions the Panel also prepared a Background Paper describing the existing system, giving details of recent policy reforms and some relevant data and references. This information has been superseded to some extent by ongoing reform.

The Panel commissioned research, sought expert advice and visited each state and territory, meeting representatives of each of the universities, business groups, students, professional bodies, State Ministers, State Government officers and interested individuals. In addition, over 160 written submissions were received, which are available on the Review website.

As indicated in the terms of reference, the Panel's tasks included defining enduring principles to underpin the provision of base funding; estimating the total quantum required to maintain Australia's global competitiveness; assessing the reasonable and differential costs of different types of courses; determining a basis for establishing the proportion of these costs that should be met by students through income-contingent loans; considering ways to maintain the substantial financial incentive for institutions to enrol low socioeconomic status students as the system grows; and developing options to ensure that all institutions continue to have a strong incentive to focus on investing in and delivering high-quality teaching and maintaining strong academic standards.

Higher Education Base Funding Review Panel

Review was led by an expert panel, chaired by Jane Lomax-Smith, former South Australian Minister for Education. The other members of the Panel were:

Professor Louise Watson	Director, The Education Institute, University of Canberra
Professor Beth Webster	Professorial Research Fellow at the Melbourne Institute of Applied Economic and Social Research Director, Intellectual Property Research Institute of Australia
Emeritus Professor Dennis Gibson AO	Former Vice-Chancellor of Queensland University of Technology Former Chancellor at Royal Melbourne Institute of Technology (Served on the Panel until retirement on 15 August 2011)

Secretariat

The Higher Education Base Funding Review Secretariat comprised:

Susan Bennett	Branch Manager
Mathew Pearson	Director
Alison Sewell	Director
Nicholas Dowling	Assistant Director
Graeme Grant	Assistant Director
Guy Kretschmer	Assistant Director
Alex Nockels	Assistant Director
Kate Woodall	Assistant Director
Joanna Larvin	Policy Officer
Jenny Brown	Administrative Officer
Lynn Connell	Administrative Officer
Charmine Bailey	Executive Assistant

Consultants

David Phillips of Phillips KPA was contracted to provide independent, external advice to the review. Mr David Phillips is widely recognised as one of Australia's foremost experts in higher education management and policy.

Emeritus Professor Ross Williams, Professorial Fellow at the Melbourne Institute in the Faculty of Business and Economics at the University of Melbourne, was contracted to provide advice specifically in relation to the *Cost of Higher Education Teaching and Learning* research project. Professor Williams has a particular interest in performance indicators for universities, economics of education and federal–state finance.

Commissioned research

The Panel commissioned the following research:

The Cost of Higher Education Teaching and Learning

Deloitte Access Economics: a research project to determine the costs associated with teaching and learning in Australian public universities. The project identified the differences in costs by discipline, location, level of study and other cost drivers such as disadvantaged students, metropolitan/nonmetropolitan and international/domestic students.

Public Benefits of Higher Education

Bruce Chapman of Phillips KPA: a research project to identify existing methodologies used for measuring the public (external) benefits of higher education. The project included conducting both a theoretical and empirical literature review. A chosen methodology was tested to generate values of external benefits across a number of coursework levels.

Private Benefits of Higher Education

Centre for Labour Market Research: a research project to identify applicable and reliable methodologies to measure the private benefits of higher education. The project included conducting both a theoretical and empirical literature review. A chosen methodology was used to generate the private values of a university degree at both undergraduate and postgraduate coursework levels across a number of disciplines.

Impact of the Higher Education Contribution Scheme on the Demand for Higher Education

Deloitte Access Economics: a research project to analyse the impact of student contribution levels and repayment thresholds on the demand for higher education in Australia since 2005. The project involved reviewing both national and international research. The project provided an analysis and discussion on whether Australia's system of student contributions and income-contingent loans encourages or deters participation in higher education. The analysis detailed the resultant effects of decreasing or increasing student contributions for particular disciplines.

Appendix 5: Public consultations and submissions

Appendix 5.1: List of submissions

On 17 December 2010, the Panel released a Consultation Paper and an accompanying Background Paper to assist parties who were interested in lodging a submission to the review. The Consultation Paper identified key issues and questions relevant to the Review's terms of reference and provided a framework for seeking stakeholders' views. The Background Paper provided a description of the current higher education funding system, details of recent policy reforms, some relevant data and references to related information.

The period for making submissions closed on 31 March 2011.

Submissions were received from the following organisations and individuals listed in alphabetical order. Submissions for which permission was received have been posted on the Higher Education Base Funding Review page of the Department of Education, Employment and Workplace Relations website. The web address is: **www.deewr.gov.au/basefundingreview.**

Organisation / individual	Submission number
Adelaide University Union	107
Animal Health Australia	66
Association of Architecture Schools of Australasia	17
Australasian Institute of Mining and Metallurgy	133
Australian Academy of the Humanities	93
Australian Catholic University	89
Australian Chamber of Commerce and Industry	131
Australian Collaborative Education Network	74
Australian Council for Private Education and Training	94
Australian Council of Deans of Arts, Social Sciences and Humanities	30
Australian Council of Deans of Education	95
Australian Council of Deans of ICT	88
Australian Council of Deans of Science	58
Australasian Council of Dental Schools	67
Australian Council of Engineering Deans	21
Australian Council of Heads of Schools of Social Work	2
Australian Council of University Art and Design Schools	42

Organisation / individual	Submission number
Australian Deans of Built Environment and Design	20
Australian Institute of Architects	141
Australian Law Students' Association	100
Australian Mathematical Sciences Institute – The University of Melbourne	87
Australian Medical Student's Association	135
Australian Pharmacy Council	29
Australian Pharmacy Liaison Forum	10
Australian Political Studies Association	117
Australian Psychological Society	139
Australian Technology Network of Universities	145
Australian Veterinary Association	85
Bond University	75
Box Hill Institute	96
Boyd, David – individual submission	64
Business Council of Australia	157
Central Queensland University	71
Charles Darwin University	36
Charles Sturt University	50
Community and Public Sector Union	121

Organisation / individual	Submission number
Consortium of Regional Universities: Central Queensland University Charles Sturt University Southern Cross University University of Ballarat University of New England University of Southern Queensland University of the Sunshine Coast	149
Consult Australia	15
Council of Australian Law Deans	54
Council of Australian Librarians	31
Council of Australian Postgraduate Associations	146
Council of Deans of Nursing and Midwifery Australia and New Zealand	124
Council of Pharmacy Schools: Australia and New Zealand	13
Council of Private Higher Education	128
Council of Veterinary Deans of Australia and New Zealand	142
Cram, Lawrence – individual submission	103
Curtin University of Technology	33
Deakin University	57
Dieticians Association of Australia	34
Drynan, Ross – individual submission	105
Edith Cowan University	83
Education Action Group, Students' Representative Council – The University of Sydney	73
Education Youth Affairs Policy Committee, Victorian Branch, Australian Labor Party	119
Engineers Australia	63
Fielding, Angela – individual submission	129
Group of Eight	132
Griffith University	49
Heads of Schools/Programs in the areas of Exercise and Sports Science and Clinical Exercise Physiology	65
Health Sciences Australia – Australian Council of Pro Vice–Chancellors and Deans of Health	153
Health Sciences Deans – James Cook University, La Trobe University, The University of Sydney and Curtin University of Technology	106
Indigenous Higher Education Advisory Council	125
Innovative Research Universities	116
InterMediate Government Liaison and Advisory	137
James Cook University	152

Organisation / individual	Submission number
James Cook University – Department of Social Work and Community Welfare	5
James Cook University – Faculty of Medicine, Health and Molecular Sciences	113
Julia Farr Association	109
Julia Farr Youth Group	52
La Trobe University	156
La Trobe University – Faculty of Health Sciences	9
Lawless, Ann – individual submission	48
Macquarie University	160
Medical Deans of Australia and New Zealand	26
Mineral Council of Australia	53
Minister for Education, Western Australia	161
Monash University	140
Monash University – Department of Nutrition and Dietetics	11
Monash University – Department of Physiotherapy	19
Monash University – Department of Social Work	1
Monash University – Faculty of Medicine Nursing and Health Sciences	14
Murdoch University	118
Music Council of Australia	98
Music Council of Australia – Supplementary submission	104
National Association of Graduate Careers Advisory Services	51
National Council of Tertiary Music Schools	27
National Tertiary Education Union	91
National Tertiary Education Union – The Australian National University	79
National Tertiary Education Union – Central Queensland University	78
National Tertiary Education Union – Charles Sturt University Branch	37
National Tertiary Education Union – The University of Queensland Branch	90
National Tertiary Education Union – The University of Sydney Branch	47
National Tertiary Education Union – University of Newcastle Branch	38
National Tertiary Education Union – University of South Australia Branch	45
National Union of Students	112
National Union of Students – National Indigenous Department	81

Organisation / individual	Submission number
National Union of Students – Queensland Branch	39
Newcastle University Students Association	110
Northern Territory Department of Education and Training	127
O'Sullivan, Jane – individual submission	158
People with Disabilities Western Australia	32
Queensland Government	159
Queensland University of Technology	70
Queensland University of Technology – Student Guild	23
Royal Melbourne Institute of Technology – School of Global Studies, Social Science and Planning	123
Royal Melbourne Institute of Technology	143
Skills Australia	44
South Australia Department of Further Education Employment Science and Technology	46
Southern Cross University	18
Stokes, Tony and Wright, Sarah – individual submission	6
Sutcliffe, John – individual submission	114
Swinburne University of Technology	28
Swinburne University of Technology – Faculty of Engineering and Industrial Sciences	25
Sydney Conservatorium Students Association	40
Sydney University Postgraduate Representative Association	150
TAFE Directors Australia	120
The Australian National University	82
The Australian National University – College of Arts and Social Sciences	101
The Australian National University Student's Association	69
The Flinders University of South Australia	59
The Institute of Chartered Accountants in Australia	77
The University of Adelaide	56
The University of Melbourne	72
The University of Melbourne – Music Students' Society	76
The University of Melbourne – Student Union	99
The University of Notre Dame Australia	126
The University of Queensland	155
The University of Queensland – School of Social Work and Human Services	4
The University of Sydney	102

Organisation / individual	Submission number
The University of Sydney – Dean, Sydney Medical School	151
The University of Sydney – Faculty of Veterinary Science	154
The University of Sydney – Student Representative Council	108
The University of Western Australia	111
The University of Western Australia – Supplementary attachment to submission Number 111	12
The University of Western Australia – Student Guild	122
The University of Western Australia – Social Work and Social Policy	35
Thomas, Jan – individual submission	84
Universities Australia	130
University of Ballarat	97
University of Ballarat – School of Business	41
University of New England	144
University of New England – Faculty of Professions	7
University of New England – School of Health	8
University of New South Wales	134
University of New South Wales – Student Representative Council	86
University of Newcastle	80
University of South Australia	138
University of South Australia – School of Pharmacy and Medical Sciences	61
University of Southern Queensland	148
University of Tasmania	115
University of Tasmania – Conservatorium of Music	22
University of Tasmania – Faculty of Education	24
University of Tasmania – School of Sociology and Social Work	16
University of Technology Sydney	62
University of the Sunshine Coast	60
University of Western Sydney	147
University of Western Sydney – Department of Social Work	3
University of Western Sydney – Student Support Services	92
University of Wollongong	55
University of Wollongong – Faculty of Arts	68
Victoria University	136
White, Tim – individual submission	43

Appendix 5.2: Consultations

Venues and dates of consultations

Following the release of the Consultation Paper and Background Paper on 17 December 2011, the Secretariat invited all universities, state governments and stakeholders who had registered an interest in the Review, to participate in a face-to-face forum with the Panel. The forums were conducted between 27 January 2011 and 18 March 2011 in each capital city as follows:

Canberra	27–28 January 2011
Brisbane	2–4 February 2011
Sydney	9–11 February 2011
Adelaide	16–17 February 2011
Melbourne	21–23 February 2011
Hobart	7 March 2011
Darwin	15 March 2011
Perth	17–18 March 2011

The forums provided participants with an opportunity to discuss with the Panel issues raised in the Consultation Paper.

Notes:

1. Not all participants signed the attendance sheets. As a result, the lists below are not exhaustive.
2. The Panel or its chair also met with various other people during the course of the Review including:
   - Health Workforce Australia – Mark Cormack, Chief Executive Officer
   - Tertiary Education Facilities Management Association – Mr Darren McKee, Executive Director, Property Services, Royal Melbourne Institute of Technology, and Mr Bart Meehan, Associate Director, Facilities and Services, Australian National University
   - Australian Chamber of Commerce and Industry – Mr Peter McMullin, Chair of the Employment, Education and Training Policy Committee
   - Australian Learning and Teaching Council – Dr Carol Nicoll, Chief Executive Officer.
3. The discussions held in these sessions helped to inform the view of the Panel and, while notes were taken, there was no formal record kept of these discussions.

Canberra, 27–28 January 2011

Universities

Institution	Attendee names
The Australian National University	• Professor Ian Chubb AC, Vice-Chancellor and President • Ms Jessie Borthwick, Senior Executive Officer, Research
University of Canberra	• Professor Stephen Parker, Vice-Chancellor and President • Mr David Hamilton, Strategic Analyst

Territory government

Organisation	Attendee names
ACT Government	• Mr Andrew Barr, MLA, Minister for Education and Training
Department of Education and Training	• Ms Leanne Cover, Executive Director, Tertiary and International Education Unit • Ms Kaaren Blom, Senior Manager, Tertiary and International Education Unit

Stakeholder forum

Organisation	Attendee names
Australasian Council of Deans of Arts, Social Sciences and Humanities	• Professor Toni Makkai, Dean, College of Arts and Social Sciences
Australian Council of Deans of Education	• Professor Toni Downes, President • Ms Helen Kenneally, Executive Officer
Australian Institute of Architects	• Mr Paul Berkemeier, Chair, NSW Education Committee • Ms Martha Liew, National Education Manager
Group of Eight	• Mr Mike Teece
Skills Australia	• Ms Sue Beitz, Head of Secretariat
Universities Australia	• Dr Glenn Withers, Chief Executive Officer • Professor Paul Greenfield, Chair

Brisbane, 2–4 February 2011

Universities

Institution	Attendee names
Central Queensland University	• Professor Scott Bowman, Vice-Chancellor and President • Mr Alastair Dawson, Deputy Vice-Chancellor (University Services) • Professor Jenelle Kyd, Deputy Vice-Chancellor (Academic and Research) • Mr David Turner, Chief Finance Officer
Christian Heritage College	• Pastor Dr Brian Millis, President • Ms Eija Bunch, Business Manager
Griffith University	• Professor Ian O'Connor, Vice-Chancellor and President • Professor Sue Spence, Deputy Vice-Chancellor (Academic) • Mr Colin McAndrew, Pro Vice-Chancellor (Administration) • Mr Rangan Srinivasan, Director, Planning and Financial Services • Mr Terry Hogan, Senior Policy Adviser
James Cook University	• Professor Andrew Vann, Senior Deputy Vice-Chancellor • Ms Vicki Hamilton, Director, Corporate Planning and Performance • Mrs Tricia Brand, Executive Director, Finance and Resource and Planning • Ms Danella Lane, Director, Financial and Business Services • Mr Carl Lawback, Manager, Budgeting Financial and Business Services
Queensland University of Technology	• Professor Peter Coaldrake, Vice-Chancellor • Dr Lawrence Stedman, Principal Policy Adviser • Mr Stephen Pincus, Executive Director, Finance and Resources Planning • Ms Patricia Alner, Director, Planning and Budget
The University of Queensland	• Professor Paul Greenfield, Vice-Chancellor • Professor Debbie Terry, Deputy Vice-Chancellor (Academic) • Professor Alan Lawson, Pro-Vice-Chancellor (Research and International) • Mr Ken Richardson, Director Planning • Ms Jo Connah, Executive Officer
University of Southern Queensland	• Professor Graham Baker, Deputy Vice-Chancellor (Scholarship) • Mr Bernard Lillis, Chief Operating Officer
University of the Sunshine Coast	• Professor Greg Hill, Vice-Chancellor • Professor Birgit Lohmann, Deputy Vice-Chancellor • Mr Don Maconachie, Director, Executive Projects Unit

State government

Organisation	Attendee names
Queensland Government	• The Hon Geoff Wilson, MP, Minister for Education and Training
Department of Education and Training	• Mr Greg Thurlow, Manager, Office of Higher Education • Mr Ian Kimber, Executive Director, Office of Higher Education • Ms Pam Deakin, Acting Executive Director, Strategic Policy and Research • Ms Lilian Oh, Senior Policy Officer, Office of Higher Education
Department of Employment, Economic Development and Innovation	• Mr Grant Woolett
Department of the Premier and Cabinet	• Mr Mark Lynch, Director, Social Policy • Ms Annette Whitehead, Executive Director, Social Policy
Queensland Health	• Ms Diana Schmalkuche, Acting Nursing Director, Clinical Education and Training • Ms Jen Egan, Manager, allied Health Clinical Education and Training • Mr Chris Setter, Acting Principal Project Officer, Clinical Education and Training
Queensland Treasury	• Ms Joanne Paterson, Acting Team Leader, Education and Justice Branch • Mr Siraj Ismail, Senior Treasury Analyst, Education and Justice Branch
Skills Queensland	• Ms Glenda Sacre, Project Officer, Industry Development

Stakeholder forum

Organisation	Attendee names
Bond University	• Mr Chris Hogan, Associate Director, Information and Planning

Sydney, 9–11 February 2011

Universities

Institution	Attendee names
Australian Catholic University	• Professor Greg Craven, Vice-Chancellor • Ms Fleur Edwards, Director, Office of the Vice-Chancellor • Mr John Ryan, Director, Finance • Professor Pauline Nugent, Executive Dean, Faculty of Health Sciences
Avondale College	• Dr Ray Roennfeldt, President • Dr Vivienne Watts, Vice-President (Administration and Research)
Charles Sturt University	• Professor Ian Goulter, Vice-Chancellor • Professor Ross Chambers, Deputy Vice-Chancellor (Academic) • Mr Col Sharp, Director, Planning and Audit • Mr Paul Dowler, Director, Finance
Macquarie University	• Professor Steven Schwartz, Vice-Chancellor • Professor Judyth Sachs, Deputy Vice-Chancellor Provost • Professor Jim Piper, Deputy Vice-Chancellor (Research)
Southern Cross University	• Professor Peter Lee, Vice-Chancellor • Mr Malcolm Marshall, Executive Director, Corporate Services
The University of Sydney	• Dr Michael Spence, Vice-Chancellor and Principal • Professor Stephen Garton, Provost and Deputy Vice-Chancellor • Professor Derrick Armstrong, Deputy Vice-Chancellor Education • Mr Tim Payne, Director, Policy Analysis and Communication • Mr Mark Easson, Chief Financial Officer
University of Newcastle	• Professor Nicholas Saunders, Vice-Chancellor • Professor Kevin McConkey, Deputy Vice-Chancellor (Academic and Global Relations) • Professor Mike Calford, Deputy Vice-Chancellor (Research)
University of New England	• Professor Jim Barber, Vice-Chancellor • Ms Kim Cull, Chief Governance and Planning Officer and Legal Counsel • Ms Sue Campbell, Principal Policy and Project Officer • Dr John Kleeman, Director, Strategy and Engagement
University of New South Wales	• Professor Fred Hilmer, President and Vice-Chancellor • Mr Jason Coombs, Director, Strategy
University of Technology, Sydney	• Professor Ross Milbourne, Vice-Chancellor
University of Western Sydney	• Professor Janice Reid, Vice-Chancellor and President • Trish Mullins, Senior Policy Adviser

State government

Organisation	Attendee names
Department of Education and Training	• Mr Andrew Rolfe, Director, Higher Education • Mr Martin Graham • Ms Leslie Loble, Deputy Director-General, Strategic Planning and Regulation • Professor Mary O'Kane, NSW Chief Scientist • Mr Gary Eisner, Principal Policy Officer, NSW Office of the Chief Scientist

Stakeholder forum

Organisation	Attendee names
Australian Deans of Built Environment and Design (ADBED) (NSW)	• Professor Martin Betts, President of ADBED, Executive Dean, Faculty of Built Environment and Engineering, Queensland University of Technology • Professor Hisham Elkadi, ADBED member, Head of the School of Architecture and Building, Deakin University
Council of Deans of Nursing and Midwifery (Australia and New Zealand)	• Professor Patrick Crookes, Chair • Ms Eithne Irving, Health Workforce Adviser
Council of Private Higher Education	• Mr Adrian McComb, Executive Officer • Emeritus Professor Tony Shannon, Member • Ms Kara Martin, Policy Communications Adviser • Dr Robyn Tudor, Director, Teaching and Learning Enhancement
Medical Deans of Australia and New Zealand	• Professor Justin Beilby, Vice-President, Executive Dean, Faculty of Health Sciences, The University of Adelaide • Professor Peter Smith, Treasurer and Dean, Faculty of Medicine, University of New South Wales • Ms Mary Solomon, Executive Officer
Student Representative Council, The University of Sydney	• Ms Donherra Walmsley, 83rd President • Ms Neha Madhok, President, Students' Association
TAFE New South Wales	• Ms Pam Christie, Director and Deputy Director-General
Think: Education Group	• Ms Phillipa Blakey, Chief Executive Officer • Mr Josh Nester, Head of Strategy
University of Wollongong	• Mr Matthew Wright, Director, Finance • Mr Aden Steinke, Director, Planning Services

Adelaide, 16–17 February 2011

Universities

Institution	Attendee names
Tabor College Incorporated	• Dr Don Owers, Principal • Dr Phil Daughtry, Head of School Social Sciences (Youth Work and Counselling)
The Flinders University of South Australia	• Professor Michael Barber, Vice-Chancellor • Professor Andrew Parkin, Deputy Vice-Chancellor (Academic) • Mr Shane McGregor, Vice-President (Strategic Finance and Resources)
The University of Adelaide	• Professor James McWha, Vice-Chancellor and President • Mr Paul Duldig, Vice-President (Services and Resources) • Professor Peter Dowd, Executive Dean, Faculty of Engineering, Computer and Mathematical Sciences • Mr Gary Martin, Director, Strategy, Planning and Recruitment • Mr Dan McHolm, Deputy Director, Strategy and Planning
University of South Australia	• Professor Peter Hoj, Vice-Chancellor • Professor Joanne Wright, Deputy Vice-Chancellor (Academic) • Professor Caroline McMillen, Deputy Vice-Chancellor (Research and Innovation) • Paul Beard, Chief Operating Officer

State government

Organisation	Attendee names
South Australian Government	• The Hon Jack Snelling, MP, Minister for Employment, Training and Further Education
Department of Further Education, Employment, Science and Technology	• Ms Adrienne Nieuwenhuis, Director, Quality and Tertiary Education Policy • Mr Peter Mylius-Clark, Director, Planning and Evaluation • Dr Sophia Matiasz, Principal Policy Officer

Stakeholder forum

Organisation	Attendee names
Australasian Council of Dental Schools	• Professor Johan de Vries, Member
Australian Qualifications Framework Council	• Ms Di Booker, Senior Policy Officer
National Indigenous Higher Education Network	• Professor Peter Buckskin, Chair

Melbourne, 21–23 February 2011

Universities

Institution	Attendee names
Deakin University	• Professor Jane den Hollander, Vice-Chancellor • Mr Andrew Walters, Chief Financial Officer • Mr Neil Taylor, Consultant, Risk Management Unit • Mr Michael Crocker, Head, Planning Unit
La Trobe University	• Professor Paul Johnson, Vice-Chancellor
Monash University	• Professor Ed Byrne, Vice-Chancellor • Mr Reynold Dias, Director, Financial Resources Management • Professor Merran Evans, Pro Vice-Chancellor (Planning and Quality)
Northern Melbourne Institute of TAFE	• Dr Christine Spratt, Deputy Director Programs, Higher Education • Ms Melissa Giffard, Acting Associate Director, Faculty of Business
Royal Melbourne Institute of Technology	• Professor Margaret Gardner, Vice-Chancellor • Dr Julie Wells, University Secretary and Vice-President • Ms Luisa Abiouso, Senior Manager, Research and Planning Consultancy, Policy and Planning Group
Swinburne University of Technology	• Professor Andy Flitman, Acting Vice-Chancellor • Mr Brian Rossy, Chief Executive Officer • Dr Michael Thorne, Executive Director, Chancellery
Tabor College (Victoria) Inc	• Rev Cheryl Osment, Executive Director, Operations • Rev Dr John Capper, Dean of Teaching and Learning
The University of Melbourne	• Professor Glyn Davis, Vice-Chancellor • Mr Sam Rosevear, Chief of Staff • Mr Ian Marshman, Senior Vice Principal • Mr Andrew Norton, Policy Adviser
University of Ballarat	• Professor David Battersby, Vice-Chancellor • Professor Andy Smith, Pro Vice-Chancellor (Schools and Programs) • Professor Todd Walker, Pro Vice-Chancellor (Learning and Quality) • Mr Greg Jakob, Director, Planning, Quality and Review • Mr John Blair, Acting Chief Financial Officer
Victoria University	• Professor Peter Dawkins, Vice-Chancellor • Dr Rob Brown, Pro Vice-Chancellor (Institutional Services) • Professor Linda Rosenman, Deputy Vice-Chancellor (Research) and Provost

State government

Organisation	Attendee names
Victorian Government	• The Hon Peter Hall, MP, Minister for Higher Education and Skills
Department of Innovation, Industry and Regional Development	• Mr Philip Clarke, Branch Manager, Tertiary Education Policy, Governance and Planning • Mr Chris Ingham Harris, Deputy Director, Youth Transitions

Stakeholder forum

Organisation	Attendee names
Australian Council for Educational Research	• Associate Professor Hamish Coates, Director, Higher Education Research
Australian Council for Private Education and Training	• Mr Ben Vivekanandan, Manager, Policy and Research • Ms Laura Hougaz, Executive Officer
Australian Council of Deans of Science	• Professor William Price, University of Wollongong • Professor Aidan Byrne, The Australian National University
Australian Mathematical Sciences Institute	• Professor Geoff Prince, Director • Professor Hyam Rubinstein, Chair, National Committee
Australian Psychological Society	• Dr Nicholas Voudouris, Senior Manager, Science and Education • Emeritus Professor Gina Geffen, Chair, Science, Academic and Research Advisory Group
Business Council of Australia	• Mr Patrick Coleman, Director, Policy
Business/Higher Education Round Table	• Mr Christopher Goldsworthy, Assistant Executive Director
Council of Australian Postgraduate Associations	• Mr John Nowakowski, President • Ms Tammi Jonas, Policy and Research Adviser
National Union of Students	• Mr Jesse Marshall, National President • Mr Graham Hastings, Research Officer
National Tertiary Education Union	• Ms Jeannie Rea, President • Mr Paul Kniest, Policy and Research Coordinator
Open Universities Australia	• Mr Stuart Hamilton, Chief Executive Officer • Mr David Masters, Executive Director, Finance and Strategy
TAFE Directors Australia	• Mr Darrell Cain, Deputy Chief Executive Officer • Ms Pam Caven, Director, Policy and Stakeholder Engagement • Ms Virginia Simmons, Consultant

Hobart, 7 March 2011

Universities

Institution	Attendee names
University of Tasmania	• Professor David Rich, Acting Vice-Chancellor • Mr David Clerk, Executive Director, Finance • Mr Paul Barnett, Executive Director, Planning and Development • Mr Garry Hennessy, Director, Financial Services

State government

Organisation	Attendee names
Tasmanian Government	• The Hon Lin Thorp, MLC, Minister for Education and Skills
Department of Premier and Cabinet	• Ms Julia Hickey, Assistant Director, Policy Division
Skills Tasmania	• Mr Mike Brough, Acting General Manager • Mr Keith Thompson, Acting Deputy General Manager • Dr Rob Dobson, Senior Project Officer, Higher Education • Ms Bec Evans, Manager Strategy

Darwin, 15 March 2011

Universities

Institution	Attendee names
Batchelor Institute of Indigenous Tertiary Education	• Mr Adrian Mitchell, Director • Professor Jan Schmitzer, Faculty of Health, Business and Science • Mr Peter Stephenson, Head of Research and Teaching and Learning • Mr Karl Ashton, Registrar and Head of Corporate Services • Ms Claire Kilgariff, Head of Faculty of Education, Arts and Social Sciences
Charles Darwin University	• Professor Barney Glover, Vice-Chancellor • Mr Scott Snyder, Faculty Pro Vice-Chancellor, Engineering, Health Services and Environment

Territory government

Organisation	Attendee names
Northern Territory Government	• Dr Chris Burns, MLA, Minister for Education and Training
Department of Business and Employment	• Mr Ian Prince, Director, Economics and Policy
Department of Education and Training	• Ms Wendi Masters, Director, Strategic Policy • Mr Howard Lai, Acting Manager Education and Training Strategy
Department of the Chief Minister	• Ms Marj Morrissey, Executive Director, Intergovernmental Relations
Northern Territory Treasury	• Mr Bruce Michael, Acting Assistant Under Treasurer – Economic

Stakeholder forum

Organisation	Attendee names
Indigenous Higher Education Advisory Council	• Professor Steve Larkin, Chairperson

Perth, 17–18 March 2011

Universities

Institution	Attendee names
Curtin University of Technology	• Professor Jeanette Hacket, Vice-Chancellor • Professor Robyn Quin, Deputy Vice-Chancellor, Education • Mr David Menarry, Chief Financial Officer • Mr Marco Schultheis, Executive Director, Strategy and Planning
Edith Cowan University	• Professor Arshad Omari, Deputy Vice-Chancellor (Academic) • Mr Tony Lazzara, Director, Planning, Quality and Equity • Mr Gary Zlnay, Manager, Resource Planning and Operations • Mr Stephen Seeds, Senior Financial Administrator
Murdoch University	• Professor Gary Martin, Interim Vice-Chancellor
The University of Notre Dame Australia	• Professor Celia Hammond, Vice-Chancellor • Professor Jan Thomas, Deputy Vice-Chancellor
The University of Western Australia	• Professor Alan Robson, Vice-Chancellor • Mr Peter Curtis, Executive Director (Academic Services) and Registrar • Mr Robert McCormack, Director, Planning Services

State government

Organisation	Attendee names
Department of Education Services	• Mr Terry Werner, Director, Higher Education and Legislative Review • Mr Alan Marshall, Manager, Higher Education Projects • Mr Richard Miles, Manager, Higher Education Policy and Planning

Stakeholder forum

Organisation	Attendee names
Council of Australian University Librarians	• Ms Imogen Garner, University Librarian, Curtin University of Technology

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