

Australian Catholic University (ACU) Submission to the Review of Research Policy and Funding Arrangements

September 2015

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EXECUTIVE SUMMARY

Australian Catholic University (ACU) welcomes the opportunity to make a submission to the Review of Research Policy and Funding Arrangements.

The research sector plays a vital role in supporting Australia's social, economic and national advancement, and ensuring the international competitiveness of our nation in an increasingly dynamic and competitive global setting. ACU considers this Review of Australia's Research Policy and Funding Arrangements to be a timely and important initiative that provides an opportunity to articulate and develop sound public policy on research in Australia.

National research policy and funding arrangements should endorse and align with the following public policy principles if Australia is to ensure quality and excellence in research, with respect to both training and outcomes, into the future. Namely, government must:

- Strongly affirm that engagement in research activity is a fundamental characteristic of an Australian university.
- Protect Commonwealth Grant Scheme (CGS) funding that allows universities to pursue their research objectives, improve the quality of their teaching, and meet their community service obligations.
- Support a diversified research landscape where universities are funded to undertake high quality research and play to their particular demonstrated research strengths.
- Support concentrations of expertise, accepting that concentrations of research strength can occur in a variety of locations. In this respect, Australia aims for a large and diverse research sector rather than a binary system.
- Secure a policy environment that recognises that universities with growing research capacity need to be supported and allowed sufficient time to develop their research strengths.
- Allow an easier flow of ideas and contacts between university and industry.
- Focus on quality over quantity in the assessment and administration of Research Block Grant (RBG) funding, and make the research funding system more responsive.

Research is fundamental to all universities

Australia's research base and its diversity depend on the premise that research is fundamental to all universities. It has been said that Australia has 'some of the best universities in the world and the best higher education system in the world.'¹ Our strong and diverse research system is a national asset to be nurtured and developed, not undermined by removing research, the central plank that defines a university, from some institutions' mission. The nation's research capability and innovation would diminish if this occurred.

If Australia were to accept that research was not central to the idea of a university, it would also diminish the quality of teaching and the capacity of universities to promote a spirit of inquiry amongst their students, because quality teaching often aligns with university research strengths.

¹ Pyne, C. (26 February 2014). 'Embracing the new freedom: Classical values and new frontiers for Australia's universities.' Address to the Universities Australia 2014 conference dinner. <https://www.pyneonline.com.au/media-centre/speeches/address-to-the-universities-australia-conference-dinner>

Australia's rich and diverse higher education system has developed partly because of the nation's large geographic spread, and research often flourishes in response to community concerns and the environment in which it is embedded. Restricting research communities diminishes Australian communities, with profound equity as well as economic consequences.

Protecting the CGS funding structure

The CGS recognises that universities are best placed to determine and adjust how funding is allocated internally to support the delivery of quality higher education to students most effectively. The system allows universities to establish their own funding priorities – a fundamental feature of university autonomy that must be protected. The CGS ensures that universities can continue to support all its activities including research and teaching as appropriate. Such flexibility also allows universities to fulfil their community service obligations in appropriate, context-specific ways, which enriches the university experience and teaching and learning in higher education.

Any attempt to change the existing CGS system by, for example, sequestering a portion for a competitive research pool, would seriously damage the fruitful connection in all universities between research, teaching and learning, and expose higher education funding to greater uncertainty. Such a proposal would shrink the university sector and damage Australia's rich and diverse higher education system.

Strategic research intensification

ACU endorses strategies that support research intensification that promotes competitive and strategic allocation of resources based on well-articulated research plans and rigorous assessment of performance.

Competition and diversity in research funding are welcome. Competition forces universities to play to their respective strengths and develop excellence in priority areas. It also drives diversity in the sector. Policies that support this objective should be encouraged.

There are many examples of unique and valuable research in newer universities that help to create a healthy and diverse research system and which need to be supported in their development stage. For example, the Excellence in Research for Australia (ERA) scheme demonstrates the growth in excellence outside of Australia's Group of Eight (Go8) universities, while Category 1 grants have increased as a proportion of total income amongst many newer universities (see Figure 1 at page 13 for more detail). But universities should be given time and support to develop research strengths that are not created overnight.

Research and commercial outcomes

There needs to be a clear conception of what 'commercial returns' in research means. Such a concept should include outcomes from research which is not limited to endeavours that return profits in a private sector sense. In particular, it should include research that helps to create economies and efficiencies in the public sector and non-government service-delivery contexts.

Industry and university researchers should also be encouraged to work together through easier funding processes, while the Australian Research Council's (ARC) Linkage scheme should be granted more funding.

Relationship with industry

Aside from increasing support for ARC Linkage funds, lifting the profile of university research, and reconceptualising commercial outcomes to include increased efficiency as well as profit, ACU supports policies that foster an increased uptake of fractional appointments or staff secondments between universities and industry, and ensures that administrative burden is reduced and grant amounts are adequate to encourage industry engagement.

Research quality, not quantity

ACU believes that there is a serious contradiction in current policy between incentives for quality and incentives for quantity of research. The RBG allocations are primarily driven by quantitative metrics unrelated to the quality of the research produced. These quantitative metrics influence university behaviour and encourage high output, potentially to the detriment of concentrated, quality research. For example, the 18 years from 1995 to 2013 saw a three-fold increase in Australia's university research output, with articles in refereed journals increasing by 350 per cent.

ACU strongly supports the ERA and its focus on research quality but does not consider that this laudable focus on quality is assisted by a methodology that requires the collection and reporting of every single publication irrespective of its worth. It is hard to see what benefit can flow from the assessment of such a large quantity of research that contains a significant amount of relatively low quality work. There is a significant and unnecessary cost associated with the collection of all of the data that is currently reported, not only for the ERA but also for the Higher Education Research Data Collection (HERDC).

The ERA should change from a process in which all publications are submitted to one in which a smaller amount of work is assessed, with the ERA occurring more frequently (every three years, based on the previous four years of output), and appropriately recognising multi-disciplinary research.

Australia's research funding system should also respond to current levels of research performance by removing the current 'stabilising' elements in the system that reduce the impact of changing levels of achievement. These 'stabilising' elements should be removed so that funds are allocated to universities based on current performance without reference to past levels of achievement.

THE ROLE OF UNIVERSITIES IN THE AUSTRALIAN RESEARCH SECTOR

An essential characteristic of a modern Australian university is an active engagement in research.

Research activity is fundamental to the conception of universities as the bastions of scholarship and inquiry-based learning, which fuels innovation.

In recent times some have questioned the role of universities in the research landscape. One argument which has been canvassed is that only some universities should engage in research, while others should focus on teaching. Such a proposition should be strongly refuted on two main public policy grounds.

First, it would significantly diminish the strength, research breadth and international competitiveness of the university sector. If fewer universities were funded and supported to engage in research, this would shrink Australia's research base. It would also severely dampen the diversity of the research sector, which stimulates innovation across a broad range of fields and communities across the nation.

Second, it would be counter to the modern conception of universities as institutions that advance knowledge, which is facilitated through research and teaching. Universities are not bastions of barren scholasticism but essential to economic development and social growth, where skills, knowledge and a spirit of inquiry is generated by a close and fruitful relationship between research and teaching. For example, Australian universities earn more than \$16 billion annually in national income by providing education services to international students, making it the fourth largest export earner for the country and our largest services export earner.²

Universities also play an indispensable role as intellectual engines that educate and produce quality graduates who not only generate export income but who also drive the future Australian workforce, foster active inquiry, and advance research-led innovation across the nation. As the Go8 articulated in its submission to the 2014 Senate Inquiry into Australia's Innovation System:

The purpose and role of a university is not to produce students equipped to move into a particular job or type of job; it is to prepare students to live in a complex and unpredictable world in which they will need to respond to situations, challenges and opportunities which we cannot forecast, and take advantage of them; and produce graduates who are flexible, resilient and have the self confidence necessary to take responsibility for their own actions.

...

A pervasive research culture is important because it enables universities to focus on learning rather than teaching, thinking as well as doing, debate not just assertion...³

Research is vital to ACU's mission as a Catholic University. Writing about the context of research in Catholic universities more generally Pope (now Saint) John Paul II said in *Ex Corde Ecclesiae*, 'By means of a kind of universal humanism a Catholic University is completely dedicated to the research of all aspects of truth in their essential connection with the supreme Truth.'⁴

² Universities Australia. (3 June 2015). 'Response to the Re:Think tax discussion paper.'

<https://www.universitiesaustralia.edu.au/news/submissions-and-reports/Response-to-the-Re-Think-tax-discussion-paper/Response-to-the-Re-Think-tax-discussion-paper#.Vd1GIfmqpBc> & Robinson, B. (11 March 2015) 'Higher Education - A tryst with destiny: Address to the National Press Club of Australia.'

<https://www.universitiesaustralia.edu.au/news/media-releases/Higher-Education---A-tryst-with-destiny#.Vd11APmqpBc>

³ Group of Eight submission to the Senate Inquiry into Australia's Innovation System (2014).

⁴ Pope John Paul II, *Apostolic Constitution of the Supreme Pontif John Paul II on Catholic Universities* (1990).

Available at http://w2.vatican.va/content/john-paul-ii/en/apost_constitutions/documents/hf_jp-ii_apc_15081990_ex-corde-ecclesiae.html

RECOGNISING THE NEXUS BETWEEN RESEARCH, TEACHING AND LEARNING

The fundamental connection between research, teaching and learning means that Australian universities are required under the *Higher Education Standards Framework (Threshold Standards) 2011 (Cth)* to engage in activity that:

- Demonstrates the commitment of teachers, researchers, course designers and assessors to the systematic advancement of knowledge; and
- Demonstrates sustained scholarship that informs teaching and learning in all fields in which courses of study are offered.

Under the current system, the research, teaching and learning activities of universities work in a complementary manner to support quality research and teaching, which underpin and support Australia's research and innovation system by building research and workforce capacity. For example:

- Every Australian university is required to undertake research “that leads to the creation of new knowledge and original creative endeavour” in at least the broad fields of study in which they offer masters or doctoral degrees by research.⁵ If research funding and support is only directed to a select few universities, there will be far-reaching implications for the future Australian research workforce as fewer universities will be able to meet the requirements to take on research students. This would lead to a decline in research capability and innovation, and have wider economic implications for the nation.
- The research strengths of universities such as ACU align with their areas of teaching. For example, ACU's teaching strengths in Health Sciences and Education (ACU is a major educator of nursing and teaching graduates in Australia), are also our areas of research priority and rapidly developing strength.
- Universities that develop research strengths in important niche areas may also offer specialised courses in these areas. For instance, James Cook University (JCU), which specialises in tropical health and medical research, offers the only Master of Public Health and Tropical Medicine in Australia, an important area which builds capacity in addressing public health and tropical medicine issues.⁶ Similarly, the University of New England (UNE), which has developed research capacity in precision agriculture, offers Australia's only dedicated Master of Science in Precision Agriculture.⁷

Universities attract and house some of the best minds across a diverse range of fields of research, which if diluted or diminished could negatively impact on Australia's research capabilities.

⁵ Ibid.

⁶ James Cook University, 'Master of Public Health and Tropical Medicine, at http://www-public.jcu.edu.au/courses/course_info/index.htm?userText=74204-&mainContent=home#.U88DjhDYSwk.

⁷ University of New England, 'Precision Agriculture Research Group' at <http://www.une.edu.au/about-une/academic-schools/school-of-science-and-technology/research/precision-agriculture>.

What are the Links between Research and Teaching?

The advancement of scholarship, which calls upon universities to facilitate academic inquiry and achievement at the highest levels, requires an engagement in both research and teaching. The links between teaching and research are “multiple, diverse, dynamic and discipline-specific.”⁸ Recognising this complexity, the connection between university research and teaching – supporting scholarship and enquiry-based learning – can be said to be conceptualised in at least five broad ways:⁹

- Research informs the content of the courses being taught. Research that is at the fore of the particular discipline being taught as well as the research of the individual academic teaching in the classroom can enrich course content and student engagement.
- Students can be taught research methods, which support their learning.
- Students can be engaged in active, research-based learning, which can be found in degree programs that are predominantly structured around problem-based or inquiry-based learning but which can be implemented at the level of the individual course where students undertake a research project.
- Students can be engaged in discovery research, normally where students work (often one-on-one or as part of research teams) with academics to undertake discovery research or complete dissertations.
- The research-teaching nexus encourages academics to engage in pedagogical research, or the scholarship of teaching and learning.

Universities, through their research activities, afford students the opportunity to be taught by the brightest minds and ‘expert authorities’ in their areas of study – sometimes by those who have written the material or textbooks being taught. While every student in every field may not always be directly taught by these active researchers, involvement in and exposure to a scholarly community have flow-on benefits to university teaching and learning. Additionally, non-research teaching staff may also build upon their own knowledge through the interactions they can have with their research active colleagues, which also benefits student learning.

Protect Commonwealth Grant Scheme (CGS) Funding Structure

The Government must protect the Commonwealth Grant Scheme (CGS) funding structure if Australia is to maintain a quality higher education and research sector into the future.

University research in Australia depends on the CGS. In 2012, total higher education expenditure on research and development (HERD) was \$9.6 billion,¹⁰ while the total Research Block Grant (RBG) was \$1.6 billion. The majority of the HERD comes from General University Funds, which includes the CGS.¹¹ The CGS appropriately supports a proportion of the research that occurs in a university.

⁸ University of South Australia, ‘Teaching-research nexus’, at <http://w3.unisa.edu.au/academicdevelopment/engagement/nexus.asp>

⁹ Wuetherick, B., (4 October 2009) ‘Unpacking the teaching-research nexus and its influence on academic practice’, *Academic Matters - The Journal of Higher Education*, at <http://www.academicmatters.ca/2009/10/unpacking-the-teaching-research-nexus-and-its-influence-on-academic-practice/>

¹⁰ This is the latest available data.

¹¹ Australian Bureau of Statistics (ABS). 8111.0 - Research and Experimental Development, Higher Education Organisations, Australia, 2012. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/8111.0Main+Features12012?OpenDocument>

Government must protect CGS funding and retain the ability for universities to use CGS funding flexibly and effectively to support the delivery of quality higher education to students, by:

- Recognising that universities are best placed to flexibly determine and adjust how CGS funding is distributed and allocated internally to best support the delivery of quality higher education to students.
- Upholding university autonomy.
- Ensuring that universities can continue to support research as appropriate, in recognition of the vital connection between research and teaching, which underpins scholarship and innovation.
- Ensuring that universities continue to be funded for important community service obligations, which enrich the university experience and teaching and learning in higher education.

The CGS is the most flexible funding that is available to universities. There is no specific statement on what the CGS is meant to support in the HESA because the CGS supports all of the activities that define a university: teaching, research, administration, capital, repairs, and community engagement. As each university is unique, they are best placed to determine the most effective and efficient use of the CGS funding they receive in order to achieve their distinctive mission.

In his 2014 address to the Universities Australia conference dinner, Minister Pyne urged his listeners to ‘be clear about the mission of your university, identify how that mission can be pursued to the highest international standards, and get on with it as well as you are able.’¹² This belief that universities should have the freedom and autonomy to determine their own strategy is at the core of the Government’s current reform package. As the Minister has subsequently stated, the reforms ‘will give universities the autonomy and flexibility to work to their strengths and make the best choices to respond to the changing economic and social environment.’¹³

Upholding the autonomy that universities have to determine how best to use the CGS funding they receive is essential to ensuring it continues to provide an enrolment-based incentive for universities to develop the knowledge base of the nation. The CGS allows universities to achieve their objectives and fulfil their missions in ways they consider best. To use Minister Pyne’s expression, the CGS allows universities to ‘get on with it.’

How a university decides to use their CGS funding will depend on their social and economic environment. The work on tropical environment and health at James Cook University and Charles Darwin University, the highly applied science and engineering work at the Australian Technology Network of universities, or the Antarctic research at the University of Tasmania, spring from the communities they serve.¹⁴ This is the result of universities understanding and responding to the priorities of their students and local communities who value research and teaching in these areas so highly.

Funding through the CGS is also important to ensure that universities are able to fulfil their community service obligations. As the Government recognised in its Regulatory Impact Statement on the 2014-15 Budget Higher Education Reforms, ‘research activities and the provision of community services are

¹² Pyne, C. (26 February 2014). ‘Embracing the new freedom: Classical values and new frontiers for Australia’s universities.’ Address to the Universities Australia 2014 conference dinner. <https://www.pyneonline.com.au/media-centre/speeches/address-to-the-universities-australia-conference-dinner>

¹³ Pyne, C. (10 July 2014), ‘Engaging with the potential of the new – Innovation and Economic Transformation: the role of universities.’ Innovative Research Universities (IRU) Senior Staff Forum. <https://ministers.education.gov.au/pyne/innovative-research-universities-iru-senior-staff-forum>

¹⁴ Craven, G. (4 September 2012). ‘Elitists Threaten University Quality: Investing in a few big players to climb world rankings would drop the average.’ *The Australian*, p. 12.

critical to the mission of all universities and are partly supported through CGS funding.’¹⁵ ACU fulfils its community obligations via research and teaching that aims to enhance the dignity of people and contribute to the common good within and across particular communities. For example, ACU has used its CGS funding to:

1. *Promote inter-religious dialogue.*

Internal ACU research funding (ACURF) has been used for research in the field of inter-religious dialogue while ACU participates in an inter-religious dialogue network that hosts international conferences on this topic, including research on, for example, the role of religious conviction in the radicalisation of young Muslims and their relationship with other Australian citizens.

2. *Participate in social outreach and intervention in Australian communities and amongst our poorer international neighbours.*

ACURF has been used to investigate biomedical ethics in relation to vulnerable members of society, while ACU has also helped community organisations attract volunteers from diverse backgrounds by researching pathways that increase their volunteer base, while separate projects have researched the better delivery of relationships education in schools.

ACU offers ‘Clemente Australia,’ a university course for Australians experiencing multiple disadvantage and social isolation. Student fees are covered by ACU and those who successfully complete four units are awarded a Certificate in Liberal Studies.

ACU has provided in-service support for teachers in Timor-Leste and has played a significant role in helping re-establish teacher training in that country.

3. *Improve government policies*

ACURF has also been used to research the legacy of past welfare practices in the areas of child removal, adoption and surrogacy, family law and women’s policies. ACU’s research on out-of-home care, institutional abuse and adoption has been widely disseminated to practitioners and policy makers and extensively cited in government reports.

ACU has also researched forms of inter-organisational collaboration in communities such as South West Sydney to increase the sustainability and cost-effectiveness of these initiatives.

ACU’s community service obligations are deeply embedded in its research and teaching activities. These community activities enhance the university experience for students and support the provision of a quality, holistic higher education. As the Go8 has articulated, a quality university education extends beyond just what happens in the classroom:

A good university is one that provides an exciting environment, one that stimulates the passion and motivation of its students by exposing them to zealous and motivated educators in a setting permeated by the creation of new knowledge and the application of rigorous debate. The benefits of this learning go beyond the provision of particular disciplinary information – which is readily available elsewhere and will often quickly become out of date. University education aims to support the balanced development of the whole person. Achieving this outcome requires the application of rigorous standards of academic excellence and an emphasis on generic characteristics such as curiosity, probity, rational inquiry, and placing a higher reliance on

¹⁵ Department of Education, ‘Regulation Impact Statement: 2014-15 Budget Higher Education Reforms’, p. 112. http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r5325_ems_42e6ed2b-c7e4-4260-aa09-89b543934a21/upload_pdf/RIS%20397765.pdf;fileType=application%2Fpdf

evidence than on authority; it is also an outcome of the academic environment as a whole, requiring an academic community that transcends disciplines and builds on the interactions that take place outside any formal teaching arrangements.¹⁶

What Research Funding Arrangements Should Not Look Like

Australia does not have a binary higher education system characterised by a select few research intensive universities and a bulk of teaching-only institutions.¹⁷ Australia has a large and diverse higher education sector that is world class. As Minister Pyne has observed on a number of occasions, Australia has ‘some of the best universities in the world and the best higher education system in the world.’¹⁸

However, there are risks to that system. A view has developed in the Group of Eight Universities (Go8) that its students are required to cross-subsidise research¹⁹ and that “Australian policy does not adequately recognise the importance of world-class research universities. Instead policy perpetuates the myth of sameness rather than the pursuit of excellence”.²⁰ A proposal that has recently been sponsored by the Go8 and a number of its members threatens to put the reputation and future funding of the higher education sector at risk. This would ultimately disadvantage students and researchers and damage the reputation of Australia’s research and higher education system.

Some Go8 members have proposed that CGS funding be cut by 30 per cent and quarantined into a ‘research pool’ for which universities would need to apply and compete for access.²¹ The argument is that the current system is unfair, in that students who attend research intensive universities have more of their CGS funding devoted to research, which disadvantages them compared to students who attend less research intensive universities.

This argument is consistent with recent Go8 suggestions that access to funding for research students should be restricted to institutions that have at least ‘world standing’ research in that field. The Go8 have argued that this would ensure ‘scarce Commonwealth funding is only provided to institutions and

¹⁶ Group of Eight submission to the Senate Inquiry into Australia’s Innovation System (2014).

¹⁷ For a summary of international comparisons, see Universities Australia (November 2014). *University Research: policy considerations to drive Australia’s competitiveness*. <https://www.universitiesaustralia.edu.au/news/policy-papers/University-research--University-research---policy-considerations-to-drive-Australia-s-competitiveness#.VeaRDvmqpbC> In this publication, Australia is compared to Switzerland, Denmark, the Netherlands, Singapore, South Korea, Malaysia, the United Kingdom and Canada

¹⁸ See Pyne, C. (26 February 2014). ‘Embracing the new freedom: Classical values and new frontiers for Australia’s universities.’ Address to the Universities Australia 2014 conference dinner. <https://www.pyneonline.com.au/media-centre/speeches/address-to-the-universities-australia-conference-dinner> & Pyne, C. (6 August 2014). ‘Spreading opportunity and staying competitive – why we need the higher education reform package.’ National Press Club, Canberra. <https://www.pyneonline.com.au/media-centre/speeches/national-press-club-address-spreading-opportunity-and-staying-competitive>

¹⁹ Thomson, V. (6 May 2015), ‘Pyne’s punishment most certainly does not fit crime’, *The Australian*, p. 33.

²⁰ Frederick G. Hilmer. (25 July 2012). ‘Let’s Stop Pretending— A Realistic Vision for Australian Universities.’ National Press Club, Canberra. https://go8.edu.au/sites/default/files/docs/article/fred_hilmer_speech_npc_25july2012_final.pdf

²¹ See for example Hare, J. (12 August 2015) ‘Anger at research pool proposal’, *The Australian*, p. 29; ; Marszalek, J. (12 August 2015), ‘Grads pay for cash grab’, *The Courier Mail*, p. 15; Matchett, S. (12 August 2015), ‘More to funding debate than student fees’, *Campus Morning Mail*. See also John Story, Chancellor of the University of Queensland, ‘there could be a (further) reduction in the Commonwealth Grant Scheme (teaching subsidies) and a corresponding increase in research block funding,’ Trounson, A. (18 September 2014, ‘Story floats idea of cutting teaching money to fund research’ *The Australian*. <http://www.theaustralian.com.au/higher-education/story-floats-idea-of-cutting-teaching-money-to-fund-research/story-e6frgcjx-1227061720977> While the University of Sydney included a similar proposal in its submission to the Kemp-Norton review of the demand driven funding system. University of Sydney (16 December 2013), *Submission to the Review of the Demand Driven Funding System*, pp. 3-4, https://submissions.education.gov.au/Forms/demand-driven-funding-system/_layouts/SP.Submissions/ViewDoc.aspx?id={effe68ad-78c7-4966-882b-e9ac047cf34e}.

departments that can demonstrate they are capable of producing research outputs to at least a world standard.²² The proposition would see a growth in research funding at the Go8 disadvantaging students and researchers in other institutions.

There are four reasons why the Go8 argument which seeks to limit access to research funding or quarantine a portion of CGS for research should be rejected.

First, proposals to redirect funding from the CGS to a research funding pool risk cutting the total quantum of funding for the university sector as a whole. There is no guarantee that any sequestered portion of CGS funding will not be returned to consolidated revenue. A new research pool is unlikely to have the legislative protection that the CGS currently enjoys, as CGS funding rates are enshrined in the *Higher Education and Support Act 2003* (HESA). This means that universities would be subject to funding uncertainty on an annual basis as governments seek to balance the budget each year in the usual manner. As Go8 Chief Executive Vicki Thompson has observed, the Commonwealth displays ‘a worrying trend of seeing research funding as an easy target.’²³

Second, these proposals also appear to make assumptions about the operations of many universities that are not supported by evidence. The argument assumes that funding for all students at universities is treated in the same way, i.e. 70 per cent of funding received through the CGS and student contribution for a particular student is used to support teaching of that individual student. However, many students in particular disciplines at research intensive universities, for example in the Arts Faculty, may receive little benefit from CGS funds, with funding nominally provided for them flowing disproportionately to support research in other disciplines, for example in the Medical Faculty.

It is also questionable whether the cross-subsidisation of research is any more prevalent at research-intensive universities than other universities. In fact, significant research is taking place in Australia’s newer universities. Also, many of these newer universities are in a research growth phase, as illustrated by their growing success in category 1 grant funding. If most research funding is directed to historical incumbents, there will be no competition from newer players, even though competition is a major factor leading to better quality research. For example, as Figure 1²⁴ demonstrates while the Go8 universities receive the eight largest research block grant (RBG) allocations in total, there are newer universities increasing their share of Australian competitive grants, including ARC and NHMRC grants (category 1 grants) as well as industry and other research income (category 3 grants).

Underlying these proposals, to sequester a prescribed percentage of CGS funding and redirect it to a research funding pool, is an assumption that this percentage is consistent across all universities and represents a proportion of CGS funding well above what is needed to support base research activities. However, evidence presented in the Higher Education Base Funding Review found that only around 6 per cent of base funding (CGS and student contributions) is used to support base capability in research, and that this amount varied significantly across disciplines (and therefore institution).²⁵ This proposal would significantly cut funding used to support the teaching of students and place in jeopardy many of those activities universities undertake to fulfil their community service obligations.

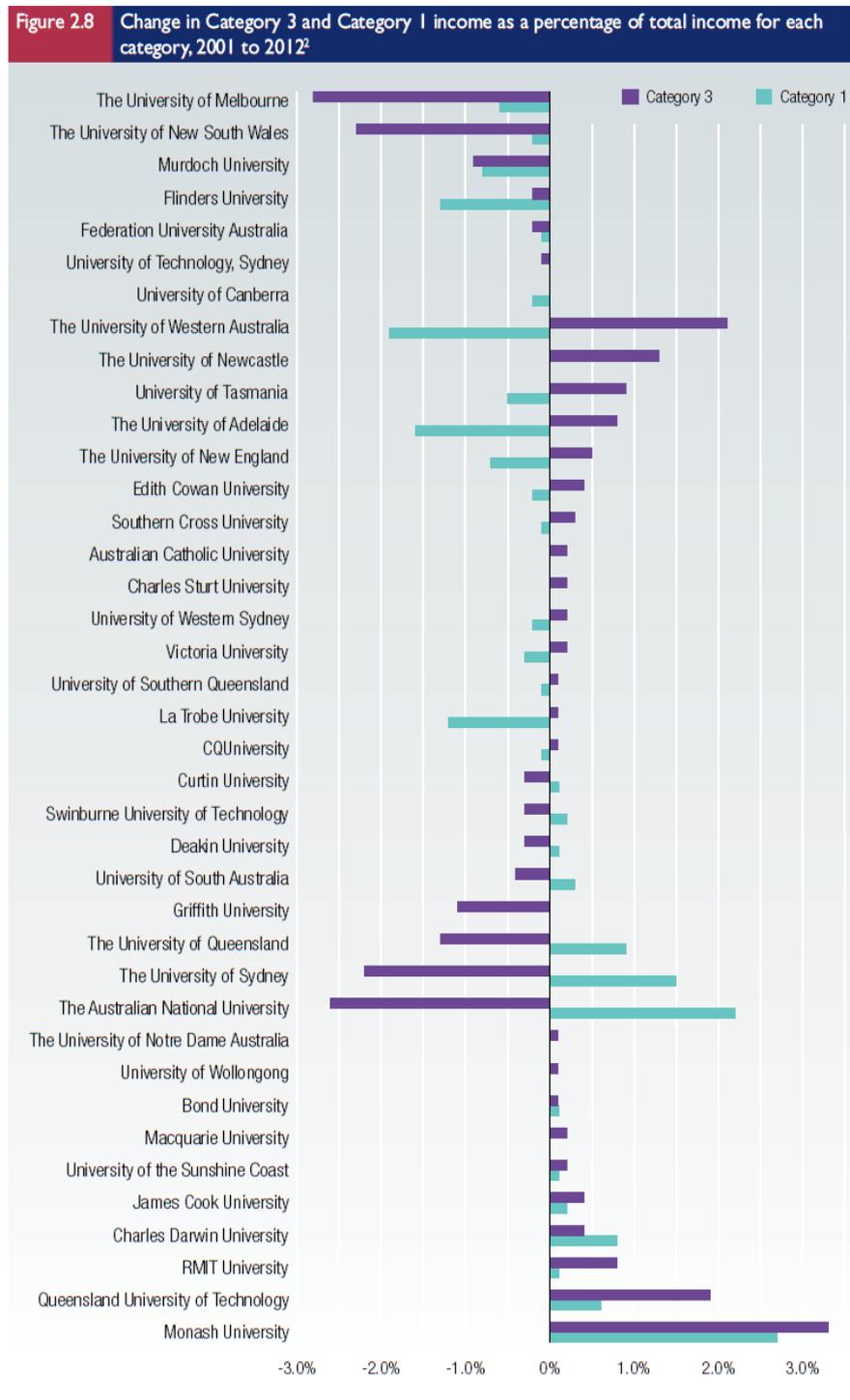
²² Dodd, T. (7 September 2015), ‘Call to fund the best and forget the rest’, *Australian Financial Review*, p. 14.

²³ Thompson, V. (18 May 2015). ‘Gap between budget rhetoric and outcomes, says Group of Eight.’ *The Australian Financial Review*. <https://go8.edu.au/article/gap-between-budget-rhetoric-and-outcomes-says-group-eight>

²⁴ Universities Australia (November 2014), *University Research: Policy Considerations to Drive Australia’s Competitiveness*, at 12. Figure 1 does not represent a university’s growth in these grants but rather the increase or decrease such grants comprise in the composition of the university’s total income. Some Go8 universities, such as Monash, have increased their proportion of both category 1 and 3 grants but some have not. Yet many newer universities have increased their success in this area, such as Queensland University of Technology, RMIT University, Charles Darwin University, James Cook University, the University of the Sunshine Coast, University of Wollongong, ACU, and others.

²⁵ Lomax-Smith, J., Watson, L. and Webster, B (2011), *Higher Education Based Funding Review: Final Report*, p. 50.

Figure 1: Change in Category 3 and Category 1 income as a percentage of total income for each category, 2001-2012



² If a university's share of total income in a category rises from 5 to 6 per cent, it is shown as a +1 per cent change. This shows changes in the share of the total, rather than simply growth by university.

Third, such proposals embed disadvantage in the higher education system as students attending non-Go8 universities, who often disproportionately come from equity backgrounds, would be adversely disadvantaged. Strong equity considerations demand the embedding of Australia's research capacity widely rather than narrowly. As the Go8 has observed,

Most researchers are not born excellent and in some disciplines excellence can take time to develop. For this reason universities need the internal capacity to support researchers with potential but who might not yet be competitive.²⁶

The demand driven system has allowed many disadvantaged yet capable students to enter newer universities. There is no reason why this same cohort cannot produce doctoral students attending the same or similar universities. If research activity is confined to a small number of institutions, drawing researchers predominantly from a privileged social stratum, it will diminish the future of academia in Australia but also Australia's prosperity and its egalitarian spirit.

Such proposals weaken the higher education and research system by making the funding system less competitive. The current system encourages competition in the sector as universities both Go8 and non-Go8 seek to develop reputations for quality research outcomes. There is no reason that research should be concentrated in the Go8, particularly as incumbency is no guarantee of future quality. Many students and researchers at non-Go8 universities would miss out on the proposed pool of research funds, particularly universities with a smaller resource pools which have a smaller capacity to compete against larger more established universities. This would reduce competition and quality overall.

Finally such changes will also reduce the flexibility and autonomy universities currently have to achieve their stated goals. The CGS is the most flexible funding that is available to universities, allowing them to determine how best to achieve their objectives and fulfil their missions. University autonomy is an objective of government policy and also an objective shared across the sector.

All universities should be resourced appropriately for their research activities, but any proposal that is counter to the objectives of building a strong, diverse research sector should be dismissed as counter to the national interest. If Australia is to play a stronger role in the knowledge economy, then it will need broad and deep research capacity, not solitary research strengths isolated in a few select institutions. Students at all universities deserve the opportunity to benefit from exposure to a strong scholarly community.

Achieving Research Policy Objectives

Any research and higher education policy must support and recognise the following objectives and realities:

- To build a 'world-class higher education *system*'²⁷ intrinsically requires that research policy should not just concentrate on and reward a small group of select universities, which have no monopoly on excellence.
- The strength and reputation of Australia's higher education and research system hinges on ensuring adequate funding and support for university research. This is also pivotal to Australia's advancement as a nation as engagement in diverse and quality research is critical to creating new knowledge and supporting innovation.

²⁶ Go8 policy note. (April 2013). 'Where should governments invest their research funding?' https://go8.edu.au/sites/default/files/docs/go8policynote7_investresearchfunding_final.pdf

²⁷ For example, see announcement by the Minister for Education, The Hon Christopher Pyne MP: Media Release 13 May 2014 at <https://ministers.education.gov.au/pyne/building-world-class-higher-education-system> (emphasis added).

- Australia's geography also requires that all universities be supported in order to provide equitable access to high quality education for all parts of the population in every jurisdiction.
- Sound research policy requires that all universities have equitable access to research funding and be rewarded based on the quality of the research undertaken, and not by pre-conceived notions of relative or historic advantage.

STRATEGIC RESEARCH INTENSIFICATION

Support Universities to Develop Research Specialisations

The Government should encourage strategies that support research intensification across all universities as this can produce greater concentrations of research excellence; and a competitive, efficient and strategic allocation of resources.

Universities should be supported to conduct quality research in their identified areas of speciality and to develop priority areas of expertise in line with their particular strengths and strategic objectives.

Universities that are growing need to be supported and allowed sufficient time to develop their research strengths, where they can demonstrate they have a capacity to do so. In their early years they will have fewer areas of excellence than the long-established universities. But given time they can develop a greater number of areas of excellence.

Quality research is facilitated by a concentration of quality researchers. Analysis of the research assessment exercises carried out in the United Kingdom (UK) since the mid-1980s demonstrates a correlation in most disciplines between a critical mass of researchers and the quality of their research. As long as communication between researchers is strong, then a community of interacting researchers becomes greater than the sum of its parts.²⁸ In such instances, the critical mass provides the collegiality, interactions, team projects, and breadth of approach that are necessary to drive much high quality research as well as a strong environment for research higher degree candidates.

Growing Research Capacity and Developing Research Strengths

It is not possible for all universities to produce quality research in all areas. The benefit, however, of supporting competition and diversity within Australia's higher education and research system is that institutions are compelled to play to their respective strengths, which creates a dynamic research sector with a greater capacity to boost innovation and national productivity.

Some of the most valuable research findings and endeavours have come from universities that have had the opportunity and support to develop their particular research specialities, or to pursue niche areas of research.

Much unique and valuable research takes place in Australia's newer universities. It is important to recognise that institutional research priorities and strengths are often influenced by the unique circumstances of individual universities. For instance, an institution's research priorities may stem from, complement or be shaped by the particular geographic location(s) in which the university is established; they may be designed to advance the particular mission of the university; they may have been developed to address areas of community need; or a combination of these and other factors. Supporting a diverse university and research system is essential to producing diverse and valuable research outcomes that advance innovation in Australia, as the following examples demonstrate:

- James Cook University (JCU) is now recognised as a world leader in tropical health and medical research and biotechnology. JCU makes a significant contribution to the health and economy of the community of northern Australia. JCU's unique location - surrounded by the ecosystems of the rainforests of the wet tropics, the dry savannahs, and the Great Barrier Reef – has driven its research strengths and focus on the tropics, and enables researchers and students from Australia and overseas to study in a 'diverse physical environment unparalleled by any university in the

²⁸ R. Kenna, R. & Berche, B. (2011). 'Managing research quality: critical mass and optimal academic research group size.' *IMA Journal of Management Mathematics*. Volume 23, Issue 2. pp. 195-207.

world.²⁹ The tropical region, which includes Northern Australia, accounts for more than 40 per cent of the world's population – a figure which is projected to grow to 50 per cent by 2050.³⁰ JCU's Australian Institute of Tropical Health and Medicine brings together a wide range of internationally recognised research experts in areas such as the control of vector borne diseases (dengue fever, malaria, and lymphatic filariasis), Group A streptococcal infection, and amphibian and aquatic infections.

- The University of the Sunshine Coast (USC) (established as a university only in 1996) has engaged in exceptional research in niche areas, including aquaculture, and sub-tropical and tropical hardwoods and continues to grow its research profile. For example, USC aquaculture researchers have been engaged, through the Seafood Co-operative Research Centre, in the spawning of the first southern bluefin tuna - *Time* magazine 'hailed it as the second most important invention of 2009'.³¹
- University of Wollongong: The 'Simulation, Modelling, Analysis, Research and Teaching' (SMART) initiative at the University of Wollongong draws on the University's proven research strengths in the areas of engineering, commerce, informatics, law, and science to holistically assess infrastructure solutions.³² The research supports greater understanding of the interconnection and interdependencies of infrastructure assets and systems to drive multi-disciplinary infrastructure research and education. The SMART facility houses 30 integrated laboratories, a simulation and modelling hub, rail logistics research centre and 200 higher degree research students; and Australia's first professorial chairs in infrastructure economics, infrastructure governance, infrastructure systems, and infrastructure modelling and simulation. This is one of the largest facilities of its type in the world. SMART is unique and is starting to play a major role nationally and internationally. For instance, the Universities of Oxford and Stanford recently invited the SMART unit to join them on major infrastructure bodies to assist them in advising their respective governments on critical infrastructure issues.³³
- University of New England (UNE): UNE conducts research into precision agriculture which encompasses strategic responses to agricultural management practices, new enterprise and technological developments that can create advances in agriculture; such as in crop production. UNE's Precision Agriculture Research Group (PARG), formed in 2002, conducts multi-disciplinary research and runs numerous externally-funded research projects involving organisations such as the Grains Research and Development Corporation, Meat and Livestock Australia, Grape & Wine Research & Development Corporation, and Sugar Research and Development Corporation. Researchers are equipped with some of the latest agricultural technology, and promote both industry-led research and research-led teaching.³⁴ Two UNE research students recently received international recognition at the 12th International Conference of Precision Agriculture at Sacramento USA, receiving outstanding graduate student awards.³⁵
- Deakin University (Deakin): Deakin's Institute for Frontier Materials (IFM) advances the University's research strengths in material science with a focus on innovative manufacturing

²⁹ James Cook University, 'About JCU', at <http://www.jcu.edu.au/about/>

³⁰ Liberal Party of Australia, 'Coalition commits \$42 million to tropical medicine at JCU', at <https://www.liberal.org.au/latest-news/2013/08/22/coalition-commits-42-million-tropical-medicine-jcu>

³¹ Hare, J. (2 February 2011), 'Pressure grows for teaching-only unis' *The Australian*. p. 3

³² University of Wollongong, 'Vision', at <http://smart.uow.edu.au/vision/index.html>

³³ Smart Infrastructure Facility – University of Wollongong, 'About SMART', at <http://www.smartmasterclass.com/page.aspx?pid=383>

³⁴ University of New England, 'Precision Agriculture Research Group', at <http://www.une.edu.au/about-une/academic-schools/school-of-science-and-technology/research/precision-agriculture>

³⁵ University of New England (23 July 2014), 'Precision Ag students scoop top awards at International Conference', at <http://blog.une.edu.au/parg/2014/07/23/precision-ag-students-scoop-top-awards-at-international-conference/>

technologies, and energy efficiency, resource and infrastructure sustainability, to address complex problems in the areas of energy, health, environment and manufacturing.³⁶ The IFM was established to “address some of the major challenges facing society through innovations in materials design and performance.”³⁷ Deakin is also engaged in ground-breaking research in nanotechnology, a research area which ‘many believe will have a bigger impact on the future of humanity than the Internet’.³⁸ Research at Deakin’s \$1.9 million world-class facility will have implications for developments in clean energy, environmental protection and health care, fibres and a number of other application areas. Deakin’s facility houses the world’s most powerful Atomic Force Microscope, the only one of its kind in Australia.³⁹

- Australian Catholic University (ACU): With the nation’s largest cohort of nursing students, ACU has achieved an outstanding profile in selected areas of research such as cardiovascular nursing. ACU ranks as number 3 on the world database, SciVal, produced by Elsevier. The University also has distinctive strength in, for example, positive psychology and education, where it is arguably the nation’s leading research institution. ACU’s Institute for Positive Psychology and Education also houses the research team that established the nation’s most successful program in support of Aboriginal and Torres Strait Islander researchers (as measured by ARC Discovery Indigenous grants).
- University of Tasmania (UTAS): The UTAS Institute for Marine and Antarctic Studies (IMAS) has a vision to position UTAS as the leading institution for marine and Antarctic studies, and advances the University’s research strengths in these fields.⁴⁰ Research at UTAS covers a number of important areas including sustainable fisheries and aquaculture, coastal and estuarine ecology, marine biodiversity, Southern Ocean marine habitats, ocean governance and policy, and the Antarctic environment. IMAS hosts over 200 staff and 140 graduate students, supports 107 higher degree research students, and also offers specialised short courses in niche research areas.⁴¹ It is playing an important role in pursuing multidisciplinary and interdisciplinary work to ‘advance understanding of temperate marine, Southern Ocean, and Antarctic environments’, and in facilitating sustainable development for the benefit of Australia and the rest of the world.⁴²

³⁶ Deakin University, ‘The Institute for Frontier Materials’, at <http://www.deakin.edu.au/research/ifm/about-us/index.php>

³⁷ Deakin University, ‘The Institute for Frontier Materials’, at <http://www.deakin.edu.au/research/ifm/about-us/index.php>

³⁸ Deakin Research Communications – Deakin University (17 August 2009), ‘The little science takes big steps at Deakin’, at <http://www.deakin.edu.au/research/stories/2009/08/17/the-little-science-takes-big-steps-at-deakin>; Deakin Research Communications – Deakin University (15 March 2010), ‘Deakin enters the nanotechnology big league’, at <http://www.deakin.edu.au/research/stories/2010/03/15/deakin-enters-the-nanotechnology-big-league>

³⁹ Deakin Research Communications – Deakin University (15 March 2010), ‘Deakin enters the nanotechnology big league’, at <http://www.deakin.edu.au/research/stories/2010/03/15/deakin-enters-the-nanotechnology-big-league>

⁴⁰ University of Tasmania, ‘About IMAS’, at <http://www.imas.utas.edu.au/about-imas>

⁴¹ University of Tasmania, ‘About IMAS’, at <http://www.imas.utas.edu.au/about-imas>

⁴² University of Tasmania, ‘Institute for Marine and Antarctic Studies’, at <http://www.imas.utas.edu.au/home>

RESEARCH AND COMMERCIAL OUTCOMES

ACU notes that the current Review will feed into the Government's plan to boost the commercial returns of research. ACU recognises that better translating research into commercial outcomes is a key part of growing research capacity and initiatives and boosting national productivity.

It is important, however, to have a clear conception of what 'commercial outcomes' constitute in this context. They should not be construed narrowly to focus simply on outcomes that deliver profits in a private sector sense.

It is imperative that Government policy recognises that achieving 'commercial outcomes', particularly in the public sector and service-delivery contexts, is about greater economies and efficiencies. For instance, research into disease prevention that assists in lowering illness in the population, or into new hospital management systems that serves to improve worker efficiencies, can reduce government costs by lessening present and future burden on the healthcare system and boosting productivity. This research encompasses a public benefit that serves to improve workforce productivity and support national advancement.

As a University with specialisations in education and health, ACU's key industry partners are the public sector and non-government education and health services providers. From this perspective, achieving commercial outcomes through research may not necessarily involve generating ideas to design products that create large profits in a commercial sense. Rather, it may more significantly involve generating research findings that create service delivery efficiencies and other research that can save government and industry money and improve productivity, whether in the immediate or longer term.

Two examples of current research at ACU which is serving to deliver cost savings to government and improve efficiencies (the equivalent of commercial outcomes in other sectors) include the following:

- ACU's Mary MacKillop Institute for Health Research has undertaken groundbreaking research and produced world-first evidence to show how the lives of tens of thousands of men and women with atrial fibrillation can be improved, through an effective post-hospital discharge program of home visits and specialist care, rather than the standard management system. The outcomes of the research will not only lead to improved patient outcomes, but will also reduce the burden on Australia's hospital system and save significant costs for government and the healthcare system. Atrial fibrillation, from which almost 3.5 per cent of the Australian population suffers, is closely linked to debilitating and deadly strokes and heart failure. The estimated cost of atrial fibrillation is greater than 1 per cent of health care expenditure, with the greatest costs being associated with hospitalisation. The annual rate of hospitalisation for atrial fibrillation patients has tripled in the past 20 years and is expected to double again in the next 20 years. The world-first research study, 'SAFETY', conducted by ACU researchers has demonstrated that for every 100 patients with atrial fibrillation, the new program will reduce health care costs amounting to more than \$500,000, deliver seven fewer deaths, 1000 fewer days of costly hospital stay, and 1000 more days alive and out-of-hospital.⁴³
- ACU researchers are working on a study to develop a regional health care program that reduces the risk of developing diabetes or cardiovascular disease (such as a heart attack or stroke) through better management of the risk factors that cause these diseases.⁴⁴ If this program has positive results and is cost effective, more nurse-led clinics may be set-up in regional Australia to reduce death and ill-health from these diseases. This could reduce burden on the healthcare system and

⁴³ Australian Catholic University, 'Putting SAFETY first', (18 November 2014), at http://www.acu.edu.au/connect_with_acu/newsroom/news/media_releases/repository/putting_safety_first

⁴⁴ This research is being supported through a \$1.3 million National Health and Medical Research Council (NHMRC) grant.

save government costs through disease prevention. ACU's 'MODERN' research project will examine whether a regional nurse-facilitated program is cost effective and whether, compared to usual care, it can be optimised to identify and reduce risks in high risk individuals; serving to prevent these diseases.⁴⁵

⁴⁵ Australian Catholic University (2014), *Modern: The management to optimise diabetes and metabolic syndrome risk reduction via nurse-led intervention (MODERN) study – Information Brochure*.

RESEARCH ENGAGEMENT BETWEEN UNIVERSITIES AND INDUSTRY

Boosting the Commercial Returns of Research

There are opportunities to better engage industry and university researchers in collaborative projects to boost the translation of research into commercial outcomes. Government should:

- Ensure that government funding provides sufficient incentive for industry to seek engagement in collaborative research projects by:
 - Ensuring that research grants adequately and fully fund projects to meet their objectives.
 - Exploring opportunities to reduce the administrative and regulatory burden of applying for government funding to counter any potential disincentives to industry in seeking engagement in collaborative research endeavours.
- Provide additional targeted investment in the Australian Research Council's (ARC's) Linkage funding scheme to support more university-industry research collaborations.
- Encourage fractional appointments or staff secondments between universities and industry.
- Explore opportunities to lift the profile of research undertaken at universities and their particular research capacities with industry, to encourage industry to come to universities to innovate or solve business and service delivery issues.

Sufficient Incentive for Industry in Research Collaborations

The Government needs to ensure that research and research funding schemes are adequately funded and supported in order to grow research capacity, drive innovation in Australia, and boost national productivity.

Government funding should support the delivery of quality research and provide sufficient incentive for industry to seek engagement in collaborative research projects. Government should ensure that research grants adequately fund projects to meet their full objectives, as insufficient funding can impact on research and the effective translation of findings to produce commercial outcomes.

Governments should explore options to reduce the administrative burden on industry and universities applying for government funding. This could counter potential disincentives to industry in initiating or seeking engagement in collaborative research endeavours. For example, a study of 2012 National Health and Medical Research Council (NHMRC) Project Grants applicants estimated that each application took approximately '38 person days of work'.⁴⁶ It further found that across all applicants an "estimated 550 working years of researchers' time...was spent preparing...3727 proposals, which translates into annual salary costs of AU\$66 million."⁴⁷ Among the 285 participants studied who submitted 632 proposals, only 21 per cent were successful.⁴⁸

⁴⁶ See Brooks, R. (27 March 2013), 'Centuries wasted applying for grants?' *The Conversation* at <https://theconversation.com/centuries-wasted-applying-for-grants-13111>; Herbert, D., Barnett, A. et al (22 May 2013), 'On the time spent preparing grant proposals: an observational study of Australian researchers' at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3664356/>

⁴⁷ Herbert, D., Barnett, A. et al (22 May 2013), 'On the time spent preparing grant proposals: an observational study of Australian researchers' at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3664356/>

⁴⁸ Herbert, D., Barnett, A. et al (22 May 2013), 'On the time spent preparing grant proposals: an observational study of Australian researchers' at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3664356/>

As the Australian Academy of Technological Sciences and Engineering (ATSE) has identified:

[Co-operative Research Centre] CRC, ARC Linkage, Enterprise Connect and Commercialisation Australia are all initiative in the right direction but are under-resourced... Transaction costs of collaboration are too high. Legal complexities between industry and [Public Sector Research Organisations] PSROs need to be simplified. They are presently too dominated by risk avoidance.⁴⁹

Providing additional funding and reducing the administrative and regulatory burden of public research funding application processes would provide greater incentives for industry to compete for these grants and engage in research projects geared to produce commercial returns. If the funding on offer is insufficient and administrative processes are considered too burdensome, industry may be disinclined to engage in these processes. From a business perspective, it may be commercially unviable to spend significant time and money on substantial paperwork when the prospect of successfully accessing a small pool of funding is limited, and especially if it will not fully meet the funding requirements.

Additional Investment in the ARC Linkage Funding Scheme

Significant advantage can be gained through additional targeted government investment in the Australian Research Council's (ARC's) Linkage funding scheme to support university-industry collaborations.

The Linkage funding scheme plays a vital role in facilitating collaborative research projects between higher education researchers and other parts of Australia's innovation system, particularly industry. Linkage funding supports national and international partnerships between researchers and business, industry, community organisations, and other publicly funded research agencies.⁵⁰ The scheme has been in operation since 2001.

A notable benefit of the Linkage scheme is that industry partners do not engage or invest in Linkage projects unless they consider the research to be of relevance or strategic interest to them, and that it will create benefits that translate into commercial outcomes.

Benefits can include better service delivery that leads to community well-being. For example, ACU's Institute for Positive Psychology and Education (IPPE) has used ARC Linkage grants for the following activities:

- Working with the NSW Department of Education to investigate the impact of Positive Behaviour for Learning (PBL) on the behaviour, well-being, motivation, and academic achievement of children at school, the purpose being to enable students to maximise their potential, build teacher capacity, improve school environments, and contribute to general well-being.
- Work with The Scots College to explore the impact of Indigenous education programs in transforming lives and communities, in particular, investigating the phenomenon of private boarding schools offering scholarships to Indigenous students.
- Work with the NSW Police Force to help officers become more resilient, and support those suffering from stress-related illness, with the main purpose being to find out how best to maintain an officer's well-being in the face of adversity.

⁴⁹ Australian Academy of Technological Sciences and Engineering (2011), *Strengthening links between industry and public sector research organisations – Communiqué* at <http://www.atse.org.au/Documents/Publications/Reports/Innovation/ATSE+Collaboration+Workshop+COMMUNIQUE.pdf>

⁵⁰ Australian Research Council, *Linkage Programme*, at <http://www.arc.gov.au/linkage-programme>

Additional targeted investment in the Linkage scheme, which has a proven track record of supporting research collaborations between universities and industry, would serve to boost the community benefits and commercial returns from research by supporting more research projects geared to deliver these outcomes and ultimately lift workforce productivity and social satisfaction.

Directing additional investment to the existing and effective framework of the Linkage scheme would also save government significant administrative costs that would otherwise be required to set up a new scheme, and avoid unnecessary bureaucracy.

Encourage Fractional Appointments or Staff Secondments between Universities and Industry

There are opportunities to more directly engage universities and industry with each other through cross-institutional fractional appointments or staff exchange agreements, which could facilitate and assist in building understanding of research/industry issues and in identifying additional opportunities for research collaborations geared to produce commercial outcomes.

ACU has been actively working to build its research networks and to develop its core areas of research strength through fractional appointments, both domestic and international. This includes some arrangements where staff work part-time at ACU and part-time at an industry partner. This initiative is building ACU's professional networks and relationships and will serve to assist ACU to engage in more research initiatives that generate commercial outcomes.

Lift the Profile of University Research Capacity with Industry

Australia's universities are intellectual engine houses and host some of the world's leading researchers. There is an opportunity to lift the profile of research undertaken at universities and their particular research capacities with industry, to encourage and raise awareness of the incentives for industry to come to universities to innovate or solve business and service delivery issues.

Australian universities support and advance a diverse research sector, with different universities housing different research specialisations; often linked to the profiles of the individual university. This stimulates innovation across a broad range of fields and communities across the nation. Evidently industry, including key areas of public sector operation, can significantly benefit from this research expertise to boost productivity or generate innovative ideas to propel their particular objectives. Greater collaboration, cooperation and alignment of university research with industry needs can lead to improved commercial outcomes, and this can be supported by raising the profile of university research to bring it into the consciousness of key industry figures.

If industry is to be more engaged in translating research into commercial outcomes, it is important to ensure that industry is made aware of the research capacities and specialisations of universities.

REWARD AND PROMOTE RESEARCH QUALITY NOT QUANTITY

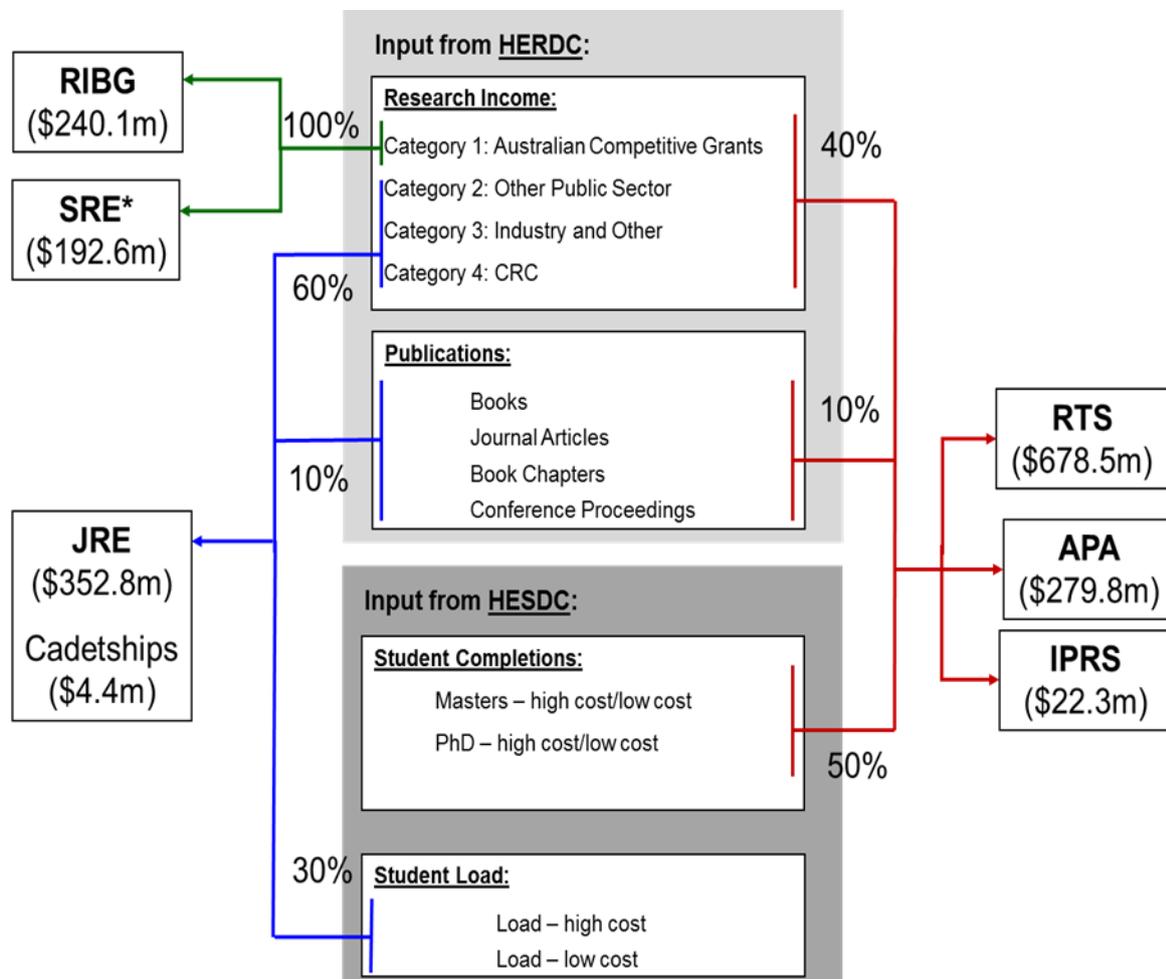
Promoting Research Quality Not Research Quantity

ACU endorses the Government's move to streamline the collection of research data in particular the efforts to align and integrate the Excellence in Research for Australia (ERA) process and the Higher Education Research Data Collection (HERDC) collection.⁵¹

Research block grant (RBG) funding has an important role to play in supporting research but the basis of the allocation needs to establish an incentive to achieve quality research.

As the Australian Government's Issues Paper for this Inquiry makes clear, the HERDC drives all of the RBG's funding streams (see Figure 2). The HERDC data is based on quantitative metrics:

Figure 2: HERDC influence on the RBG⁵²

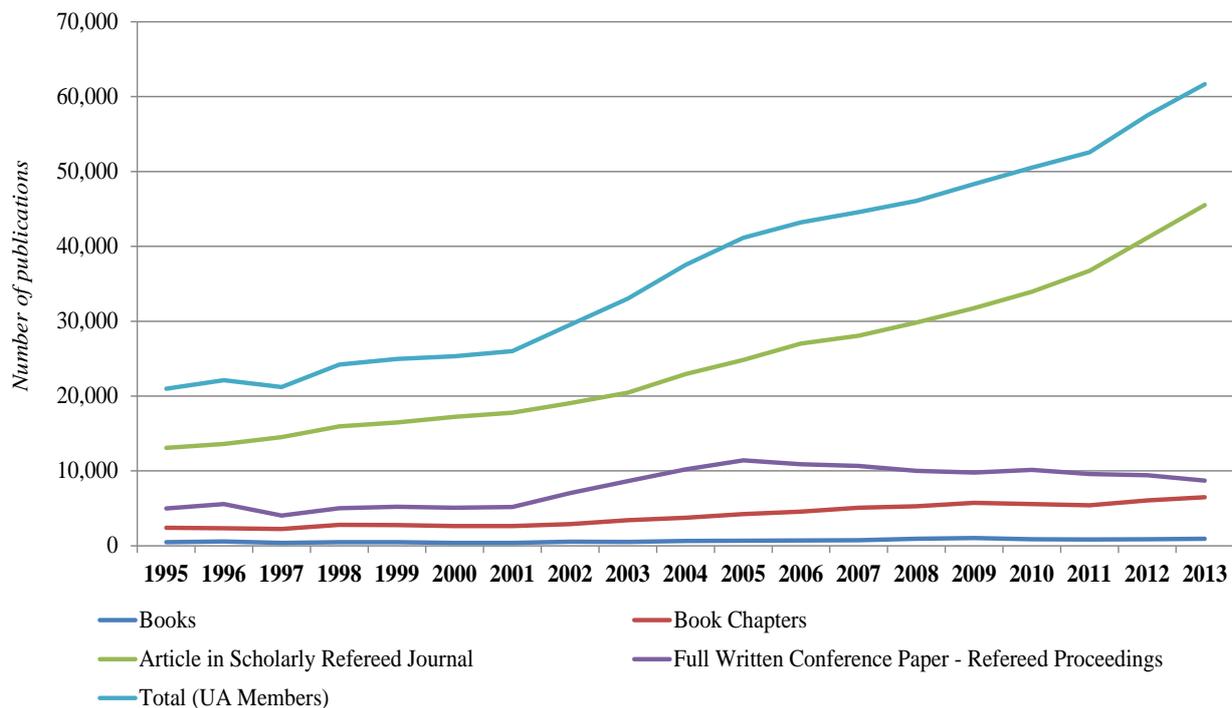


The impact of quantitative metrics on the behaviour of universities can be seen in the rapid rise in Australia's research output as measured by the HERDC (see Figure 3):

⁵¹ This coordination effort is mentioned on the ARC website at <http://www.arc.gov.au/era-faqs>

⁵² Australian Government (August 2015). *Review of Research Policy and Funding Arrangements for Higher Education: Issues paper*. Chart 6 on page 15.

Figure 3: HERDC time series data from University Australia (UA) members, 1995-2013⁵³



Over 18 years, from 1995 to 2013, total research production has increased three-fold, with articles in refereed journals increasing by almost 350 per cent. Book production nearly doubled from a relatively low base while papers in refereed conference proceedings increased by 174 per cent (see Table 1):

Table 1: HERDC time series data continued⁵⁴

	1995	2013	Growth (No.) 95-13	Growth (%) 95-13
Books	495	934	439	189%
Book Chapters	2,419	6,501	4,082	269%
Article in Scholarly Refereed Journal	13,067	45,526	32,459	348%
Full Written Conference Paper - Refereed Proceedings	4,996	8,715	3,718	174%
Total (UA Members)	20,978	61,676	40,698	294%

A key policy decision for government is how ERA results might be used in the allocation of RBG. The ERA processes should help drive quality; however they are not as effective as they could be. The Government's 'Excellence Index' moderator is designed to 'recognise and reward research performance at or above world standard according to the outcomes of the ERA initiative.'⁵⁵ However, the HERDC and the ERA both require universities to submit every publication by every single academic staff member

⁵³ Universities Australia, *HERDC time-series data* (2015), at Sheet 9.

⁵⁴ Universities Australia, *HERDC time-series data* (2015), at Sheet 9.

⁵⁵ Department of Education – Australian Government, 'Research Block Grants – Calculation Methodology, at <https://education.gov.au/research-block-grants-calculation-methodology>

who meets the eligibility criteria. This use of quantitative drivers offers a powerful incentive for universities to produce more research rather than concentrate its efforts on high quality innovation.

Quantitative drivers are also contrary to the successful commercialisation of research, which is predominantly confined to a relatively small number of elite ideas and inventions. For example, Professor Graeme Jameson from the University of Newcastle received a total of \$2.1 million in ARC funding from 1979 to 1998.⁵⁶ Yet after 21 years of research, Professor Jameson's work resulted in the invention of a radical new device for the separation of minerals known as the Jameson Cell, which continues to have a major impact on the efficiency of the coal industry. The Jameson Cell has been described as the most valuable Australian invention of the past twenty years, contributing billions of dollars a year to Australia's export income.⁵⁷ For the period 1990-2011, the cumulative total value of export coal recovered by the Jameson Cell in NSW and Queensland was AU\$22.1 billion. In 2011 alone it was AU\$4.3 billion.⁵⁸ This example illustrates the massive economic returns that can result from a single research breakthrough of very high quality, and yet how difficult it can be to know in advance how successful a particular research program is likely to become.

Quantitative metrics provide little incentive for a university to pick likely winners and stick with them. Instead, the existing metrics reward the sheer quantity of research produced rather than its impact or significance. By rewarding quantity over quality the current research data collection requirements, which feed into the research funding calculations and ERA rankings, promotes unnecessary research, directs attention away from more worthy projects, and generates an enormous amount of very costly red tape.

It is hard to see what benefit can flow from the assessment of such a large quantity of research that is likely to contain much relatively low quality work. It would make more sense for such material to be filtered out by universities and not submitted, saving universities, the Government, and ultimately the public a significant amount of money.

Addressing the Inefficiencies in the Current System

ACU recommends that Government reform the research data collection requirements for publications by adopting a higher threshold than 50 publications for assessment but by also establishing a ceiling on the volume of publication that can be submitted in a given field of research (FOR) code.

With respect to data collection requirements, particularly around publications, the HERDC and the ERA systems are not efficient given the large volume of research that needs to be processed under their requirements.

Under the current data collection requirements:

- There is a significant administrative burden and cost to the public purse in processing the large quantities of research publications submitted for assessment, by multiple universities across multiple research categories.
- The burden on ERA committees in having to make a judgement on such quantities of research could be eased considerably to allow greater and more valuable engagement with a selected sample of quality research publications.

⁵⁶ Australian Research Council (2007), Submission to the House of Representatives Standing Committee on Science and Innovation 'Inquiry into Pathways to Technological Innovation', pp. 26-27.

⁵⁷ University of Newcastle (2014), Submission to the Australian Government's discussion paper *Boosting the Commercial Returns from Research*, pp. 19-20.

⁵⁸ University of Newcastle (2014), Submission to the Australian Government's discussion paper *Boosting the Commercial Returns from Research*, pp. 19-20.

- There are significant administrative costs to universities in having to process, compile and submit all research publications which could be alleviated and the funds better invested in actual research activity.

The HERDC's attempt to capture all research rather than the best research is not only ill-targeted but also highly inefficient. A 2012 review of university reporting found that 'the effort involved in research related reporting is very high.'⁵⁹ This study found that in 2011, a total of 66,000 staff days and \$26 million were spent on reporting at Australian universities (averaging about 2,000 staff days and between \$800,000 and \$900,000 for the typical university).⁶⁰ The median estimated staff effort on the HERDC research publications collection was 547 days, making it the most labour intensive of all the reporting requirements faced by universities.⁶¹

The number of research publications universities are required to submit for assessment could be substantially reduced and capped. The money spent on meeting the onerous administrative burden of the existing assessment system could be better invested in research and redirected to provide additional research grants. This is in line with the Government's objectives to reduce the burden of unnecessary red tape, reporting and administrative burden to facilitate a stronger and prosperous economy.⁶²

Strengthening the Excellence in Research for Australian (ERA) Scheme

The ERA is fast becoming the core benchmark against which universities assess their research performance, determine where to direct or target strategic research investment, and upon which they rely to validate their research strengths.⁶³ Further reforms to ERA should include:

- ERA should recognise and assess multi-disciplinary research.
- Reduce the reference period for ERA (currently six years) to make the system more responsive.

Greater recognition for multi-disciplinary and collaborative research

ERA should be reformed so that:

- Universities that have formally established multi-disciplinary research centres or institutes should be permitted to make submissions based on the work of these centres or institutes, and to use a specific field of research to identify this research. Implementation of this proposal would provide universities with incentives for investment in multi-disciplinary research concentrations.

Collaborative activities that are characterised by multi-disciplinary, team-based approaches to research and innovation are becoming increasingly important in drawing together expertise to address problems in areas of national importance. As the Nobel laureate and President of the Royal Society of Chemistry, Professor Sir Harry Kroto, has said, "the traditional chemistry/physics/biology departmentalised university infrastructures - which are now clearly out-of-date and a serious hindrance to progress - must

⁵⁹ PhillipsKPA (December 2012), *Review of Reporting Requirements for Universities*, p. 11.

⁶⁰ PhillipsKPA (December 2012), *Review of Reporting Requirements for Universities*, p. 6.

⁶¹ PhillipsKPA (December 2012), *Review of Reporting Requirements for Universities*, p. 105.

⁶² For example see Prime Minister of Australia Media Release, 'Reducing red tape to build a strong and prosperous economy,' at <https://www.pm.gov.au/media/2014-03-19/reducing-red-tape-build-strong-and-prosperous-economy>; Christopher Pyne Media Release 'Government to reduce red tape in higher education', at <https://ministers.education.gov.au/pyne/government-reduce-red-tape-higher-education>

⁶³ For example see La Trobe University at <http://www.latrobe.edu.au/handbook/2014/general/research.htm>; Macquarie University at <http://mq.edu.au/research/era/research-areas/index.html>; The University of Melbourne at <http://themelbourneengineer.eng.unimelb.edu.au/2011/02/%E2%80%98well-above-world-standard%E2%80%99-melbourne-engineering-and-technology-era-results/>

be replaced by new ones which actively foster the synergy inherent in multidisciplinary.”⁶⁴ Collaboration and multidisciplinary are beneficial to all fields of research by offering new ways of thinking about problems that may be so complex that the solutions require expertise across a range of disciplines.

The current ERA assessment scheme, however, does not accommodate multi-disciplinary research, as research quality is only evaluated under individual discipline categories. It would be difficult to find many credible research-leaders in Australia who would advocate that a focus on research in a single discipline is the way to achieve high quality research and innovation. Most significant research projects, especially those designed to deal with complex problems, require a team of researchers who bring together expertise from different disciplines. And yet there is no recognition in the ERA for centres or institutes established as multi-disciplinary research concentrations. In addition to the assessment of performance in a discipline there needs to be an option to submit multi-disciplinary research groups for assessment.

⁶⁴ Quoted by Gerard Lyons in his presentation on multidisciplinary research, see: http://www.hse.ie/eng/staff/Leadership_Education_Development/National_Institute_of_Health_Sciences/NIHS_PD_Fs/Multi-disciplinary_Research.pdf

MAKING THE RESEARCH FUNDING SYSTEM MORE RESPONSIVE

ACU recommends that Government adopt the following policy reforms to make the research funding system more effective and responsive, to support quality research:

- Institute a new ERA with a reduced collection of research outputs and an ERA assessment conducted every three years and based on the previous four years of output. Besides increasing efficiencies, this will allow the results of the process to have a closer relationship with the quality of research being undertaken in each university at the time that the results are released.
- Reduce ‘stabilising elements’ in research formulas to more accurately reflect and reward Australia’s research strengths where they exist.
- Remove the cap on yearly variation of Research Training Scheme (RTS) grant allocations, as this is counter to the objectives and principles of supporting competition in the sector and the efficient allocation of limited research funds, and entrenches historic advantage.

Reduce the Reference Period for Assessments of Research Quality

The HERDC, which makes no quality assessment, occurs every year, while the ERA, which does make an assessment of quality, does not have a set reference period. The reference period for publication could be reduced. The results for the current ERA, which are likely to be released in December 2015, will cover research from 1 January 2008 to 31 December 2013. Yet the research landscape changes more rapidly than is implied by such a time scale. Many of Australia’s universities are also relatively new and their profiles in some cases are changing rapidly.

The nation needs to know who is performing at a high level now rather than back in 2008. The reference period needs to be shortened to every three years, based on the previous four years of output.

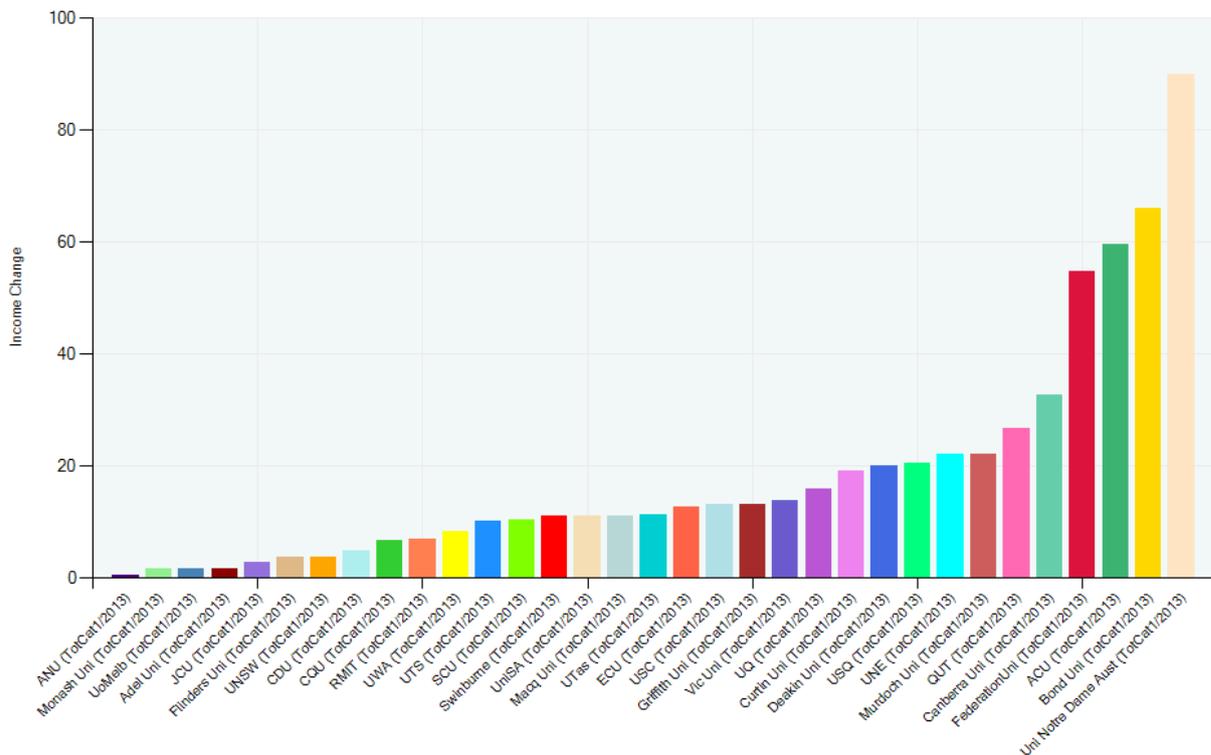
Reduce the Stabilising Elements of Research Funding

The RBG funding formulae include ‘stabilising elements’ that control the rate of change in funding to universities. For instance, the Research Training Scheme and the Joint Research Engagement Grants are moderated to ensure that allocations to Universities do not fall below 95 per cent of their previous grant allocations. As the Issues Paper notes “the volatility of funding levels and the rate of change is controlled by incorporating stabilising elements such as data averaging, pipelines and safety nets.”⁶⁵

As with the long reference periods, safety nets deaden a research collection’s sensitivity to the reality and current quality of research that is occurring in Australia. Moreover, these mechanisms risk ossifying grants to more established institutions at the expense of institutions that are developing their research capacity at a faster rate. For example, the three top movers in Category 1 HERDC funds in 2013 were the University of Notre Dame Australia, Bond University, and ACU (see Figure 4 below):

⁶⁵ Australian Government (August 2015), *Review of Research Policy and Funding Arrangements for Higher Education: Issues paper*, para 2.2.14.

Figure 4: Category 1 HERDC Annual % Income Change⁶⁶



Universities in the top 10 percentage increases for 2013 that also received over \$10 million in Category 1 funding were QUT, Murdoch, UNE and Deakin.⁶⁷ Some funding stability may be needed from year to year but ACU believes the over-riding principle should be to support research where it is actually happening.

Revise Current RTS Grant Allocation

ACU recommends that the Government:

- Remove the cap on yearly variation of RTS grant allocations, as this is counter to the objectives and principles of supporting competition in the sector and the efficient allocation of limited research funds, and entrenches historic advantage.

The Research Training Scheme (RTS) provides grants to universities for the purpose of supporting the training of higher degree by research (HDR) students.

The current RTS grant allocation has a 5 per cent cap on yearly funding variation below a university's allocation in the previous year. The Government has articulated that the rationale behind this policy is: "To minimise adverse impacts on HEPs, a safety net is applied to ensure that no HEPs RTS grant will fall below 95 per cent of its previous year's RTS grant amount indexed to current prices."⁶⁸

⁶⁶ Intuitive Innovations Pty Ltd (February 2015), *HERDC & Block Funding: A VIP-Research Report*, p. 4.

⁶⁷ Intuitive Innovations Pty Ltd (February 2015), p. 5.

⁶⁸ Department of Education, Australian Government (December 2014), *The process of determining Research Training Scheme (RTS) grant amounts – 2015 Allocations*. Accessible via <https://docs.education.gov.au/system/files/doc/other/rtsprocesscalculations2015.pdf>

This means that any given university will not receive an RTS allocation that is more than 5 per cent lower than the allocation it received under the RTS scheme in the previous year, even if its actual RTS funding needs are substantially lower in the current year.

This cap should be removed, as it does not support the efficient allocation of limited research funds.

The current policy is also counter to the objectives and principles of facilitating a competitive research and higher education funding system that is responsive to actual funding requirements and performance, as it entrenches historic advantage. To illustrate, under the current policy, a university that may previously have required a large RTS funding allocation but that has a reduced RTS allocation under the pre-safety net grant calculation, would continue to be rewarded essentially at the historic level given funding can only be progressively reduced by 5 per cent each year. This creates a long-term lag and essentially over-funding, until the funding is appropriately reduced to the correct level.

Universities should be funded for RTS based on actual performance, rather than being funded and rewarded based on historic allocations.

Removal of the cap on yearly variation of RTS funding to individual universities will ensure that funds are equitably allocated to universities based on current funding needs and performance.

Appendix A - Australian Catholic University (ACU) Profile

Australian Catholic University (ACU) is a publicly funded Catholic university, open to people of all faiths and of none. ACU operates as a multi-jurisdictional university with seven campuses across four states and one territory. ACU campuses are located in North Sydney (NSW), Strathfield (NSW), Canberra (ACT), Melbourne (Victoria), Ballarat (Victoria), Brisbane (QLD) and Adelaide (SA).

ACU is the largest Catholic university in the English speaking world. Today, ACU has more than 30,000 students and over 2,000 staff.⁶⁹

While teaching, learning, and research at ACU is inspired by 2,000 years of Catholic intellectual tradition, ACU is a diverse institution, attracting students and staff from a diverse range of faiths and backgrounds.

ACU graduates demonstrate high standards of professional excellence and are also socially responsible, highly employable and committed to active and responsive learning. ACU graduates are highly sought after by employers, with ACU graduates securing a 93 per cent employment rate which is higher than the national average.⁷⁰

ACU has built its reputation in the areas of Health and Education and is a major producer of nursing and teaching graduates in Australia. ACU educates the largest number of undergraduate nursing and teaching students in Australia,⁷¹ serving to meet significant workforce needs in these areas. Under the demand driven system, ACU has sought to focus and build on these strengths.

On 1 January 2014, ACU consolidated its previous six faculties into four:

- Faculty of Health Sciences;
- Faculty of Education and Arts;
- Faculty of Law and Business; and
- Faculty of Theology and Philosophy.

These new arrangements created a more efficient and competitive structure focused on the needs of industry and employment partners. ACU is also moving towards the adoption of a shared services model where suitable, to improve efficiencies, internal processes and better allocate resources.

ACU is committed to targeted and quality research. ACU's strategic plan focuses on areas that align with ACU's mission and reflect most of its learning and teaching: Education; Health and Wellbeing; Theology and Philosophy; and Social Justice and the Common Good. To underpin its plan for research intensification, in 2013 ACU abolished its existing research centres and groups and set about establishing new research institutes, to align with the mission of the university. The strategy has involved the appointment of high profile leaders to assume the directorships of these institutes, and to work with high calibre Institute members and Centre/Program leaders.⁷²

- The Mary MacKillop Institute for Health Research (Faculty of Health Sciences)
- Institute for Positive Psychology and Education (IPPE) (Faculty of Health Sciences)
- The Institute for Health and Ageing (Faculty of Health Sciences)
- Learning Sciences Institute of Australia (LSIA) (Faculty of Education and Arts)
- Institute for Social Justice (Faculty of Education and Arts)
- Institute for Religion and Critical Inquiry (Faculty of Theology and Philosophy)
- Institute for Religion, Politics and Society (IRPS) (Faculty of Theology and Philosophy)

⁶⁹ Student numbers refer to headcount figures; Staff numbers refer to full-time equivalent (FTE) [2014].

⁷⁰ *Graduate Destination Survey (GDS) 2014*.

⁷¹ Hobsons, *The Good Universities Guide 2015 to Universities, TAFEs and Higher Education Providers* (2014).

⁷² See Australian Catholic University, 'Research Institutes', at http://www.acu.edu.au/research/research_institutes_and_programs