

**GROUP
OF EIGHT
AUSTRALIA**

Go8 Response to Australian Universities Accord Interim Report

Group of Eight Submission



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Go8 Response to Australian Universities Accord Interim Report

As the nation's leading research-intensive universities, the Group of Eight (Go8) provides this submission in response to the Australian Universities Accord Interim Report (the Report).

In doing so we have restated a set of recommendations not identified in the Interim report that we believe must be implemented. As per the challenge set by the Federal Education Minister, the Hon Jason Clare, in his National Press Club Address on 19 July, we have identified one idea from the Interim Report – the international student levy – **that should be rejected in the national interest**. The Go8 is of the strong view that this redistributive tax would create countless unintended consequences, damage our higher education sector and international reputation.

In total, the Go8 has put forward 10 recommendations for consideration to be included in the Accord final report – not to be “set and forget” but to be further developed and actioned by Government in collaboration with the sector.

Introduction

The single overarching goal of the Accord must be to deliver generational reform that sets our nation and its people up for success in the decades to come. As the Report quite rightly highlights – **there is no room for complacency**.

The great challenge of the reform will be to build aspiration and access for Australians, regardless of background, to secure tertiary qualifications and become life-long learners. As the Report stresses, completing secondary school will not be enough for success in work and life, as new technologies continue to transform how we work and interact. We must increase scale in the system (both vocational and higher education) to accommodate this step-change in access with a steely-eyed focus on quality and support for students that ensures the greatest chance of their success.

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This is already a hallmark of Go8 members where almost **85 per cent of students successfully complete their studies** and have sector leading career outcomes.

We must also deliver reform that means the Australian people are confident to direct limited public investment to an efficient and effective higher education system.

Our universities are the intellectual powerhouses of the nation and should operate according to the high level principles identified by the Go8 and provided in an attachment.

1. Equity in a seamless Tertiary Education System

The Go8 believes that a tertiary education system that provides benefits for all Australians – regardless of background – depends on four fundamental pillars:

- A seamless and flexible Tertiary Education System that has pathways between vocational and higher education.
- A Universal Learning Entitlement (ULE) that supports lifelong learning

as needed across the Tertiary Education System.

- A commitment to address barriers to widening access, which begin at birth and grow throughout schooling and establish needs-based student funding and student income support that enables equitable access to transformative tertiary education experiences regardless of background.
- A focus on delivering career and life outcomes from education – not just access – through a data driven and evidence-based approach.

The Report addresses each of these issues but not in an integrated and detailed way that must be the focus of future policy development.

Recommendation 1: The detailed development of a Universal Learning Entitlement (ULE), a needs-based student funding model for teaching, support to ensure our schools lift educational outcomes and aspirations for students from under-represented groups, and the establishment of a National Equity Data Institute, to support equity in a seamless Tertiary Education System.

2. A national approach to research

Research is critical to Australia's future economic, environmental, and community well-being. This will become even more so as we look to the Accord's 30-year horizon where innovation will underpin success in a technology and information driven global economy, and where international research collaboration will continue to provide solutions to global challenges.

This means supporting the full range of research including humanities, arts and social sciences (HASS) disciplines.

However, the free fall in national research spending as a percentage of GDP over the last 15 years tells us that without urgent action in how we fund and organise our **national** research effort we will not achieve this future vision. ABS data indicates that national expenditure on R&D has declined to 1.68 per cent of GDP – only two-thirds of the OECD average

– driven largely by a decrease in business expenditure in R&D which at 0.9 per cent of GDP in 2021–22 is less than half the OECD average. The shortfall in business spending on research to the OECD average is of the order of \$18 billion per year.

Government investment in research also lacks strategic coordination with 176 distinct R&D programs across multiple agencies. The majority of expenditure is concentrated in the Education, Health and Aged Care, and Industry, Science and Resources portfolios.

While the Report has rightly focused on protecting and increasing the world-leading research and translation strength of universities including through sustainable funding¹ – supporting research as siloed in the education portfolio will not be enough to ensure an Australian future based on research and innovation.

Recommendation 2: A formal target of 3 per cent of GDP invested in R&D be established as a national priority.

¹ See Section 2.7 Research, innovation and research training

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Recommendation 3: The Government reestablish the Prime Minister’s Science, Engineering and Innovation Council, or equivalent body, with an initial focus on a comprehensive review of the national research system, including defence.

Recommendation 4: The review of the national research system prioritise four high-level structural reforms:

- a. Development of a National Research Strategy, incorporating national science and research priorities.**
- b. An overarching government body for research and innovation.**
- c. Greater diversity of mission, scale and focus among universities delivering research.**
- d. A future fund for non-health and medical research with a strong link to basic research.**

Underpinning this national effort on research is a strong university basic research sector led by the Go8 members who collectively undertake two-thirds of this basic research. The Report

also recognises this by suggesting significantly increasing the immediate investment in the ARC. A new Go8 policy paper containing a detailed analysis of the importance of basic research is provided as an attachment.

3. The Full Economic Cost (FEC) of research

A key weakness in the Australian research system is the lack of understanding of **both the cost and the value of research**. This leads to the central structural funding distortion in Australia’s university research system – the underpayment of university research costs by government and industry and consequently the need for cross-subsidisation of research – largely through international student revenue.

To drive government funding of university research, calibrate industry expectations of the costs of research and identify where additional assistance may be required, it is critical to have a national benchmarking of the Full Economic Cost (FEC) of university research.

Recommendation 5: A detailed cost of research benchmarking exercise be undertaken to establish the Full Economic Cost for university research which specifies:

- **Differences in the cost of research at each university recognising differences in the quality and impact of research.**
- **Differences in the cost of research for each research discipline.**

Recommendation 6: That government move to provide the Full Economic Cost of government research grants within a decade and as transitional/short-term measures prioritise the implementation of:

- **At least 60 cents in the dollar indirect cost support be for ARC, NHMRC and MRFF grants.**
- **The Research Support Program (RSP) block grant is used exclusively to support these government grants.**
- **ARC grants are aligned to support basic research and the National Science and Research Priorities.**

With these significant changes in research funding there must be public assurance that all research undertaken by universities is in the national interest (broadly interpreted) including alignment with the soon to be released National Science and Research Priorities, where appropriate.

Recommendation 7: Universities commit to a comprehensive government assessment of research quality and impact as a national stock take to underpin a strong ongoing basic research capability and to enhance sovereign capacity building and industry engagement.

Research infrastructure is a major element of the full economic cost of research and as identified by the Report requires strategic and ongoing funding rather than on a project-by-project basis.

Recommendation 8: The National Collaborative Research Infrastructure Strategy (NCRIS) moves to a future fund style of funding and undergo a comprehensive review of governance and administration of the program and funded facilities.

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4. A damaging international student tax

An international student “envy tax” or any other kind of redistributive tax or efficiency dividend would be damaging to Australia’s higher education system and the Australia’s largest services-based export industry in international education.

Recommendation 9: The Report consideration of an international student levy – or any other form of redistributive tax or efficiency dividend replacing government funding – not be adopted.

5. A Tertiary Education Commission (TEC)

Perhaps the biggest need identified in the Report but also presenting arguably the greatest risk is the establishment of a Tertiary Education Commission (TEC) which was also

suggested in the Go8 submission to the second Accord consultation.²

Recent history has confirmed – for instance in the failure of the Job Ready Graduates (JRG) program – the need for deep policy expertise in tertiary education to inform Government decision making. It is also difficult to envisage how the recommendations arising from the Accord process can be meaningfully implemented without such a body.

The risk, however, is that such a body is an expensive additional layer of bureaucracy that lacks the independence from Government to provide evidence-based, long-term advice. One possible model is that of the Productivity Commission which was established as an independent authority by an Act of Parliament to provide quality, independent advice, and information to government³ but noting also a number of other models have been proposed in recent years.⁴

2 *15 ideas to deliver a seamless tertiary education system – Group of Eight Submission to the Australian Universities Accord Panel Discussion Paper consultation*

3 <https://www.pc.gov.au/about>

4 See for instance the Monash Commission [Renewal of post-compulsory education in Australia](#)

Recommendation 10: That a Tertiary Education Commission be established as a statutory body independent of government to provide policy advice to government with clear delineation from other bodies such as TEQSA and JSA but have no role in operational matters such as funding allocations or negotiation of institutional compacts with government.

Conclusion

The Go8 submission has identified key high-level recommendations for the Universities Accord but

there is much ongoing work to be done in collaboration between the Universities Accord Panel and the sector in adding detail to these recommendations.

The Accord process cannot be “set and forget” once the final report is published and neither can all substantive recommendations be left to a future Tertiary Education Commission. It is vital that the Accord process involves ongoing dialogue (including the formation of a Tertiary Education Commission).

The Go8 is committed to engaging in this process in the national interest.

The Accord process cannot be “set and forget” once the final report is published and neither can all substantive recommendations be left to a future Tertiary Education Commission.

Attachment 1 – Go8 Principles for Higher Education

Principle 1: Universities exist to serve society.

Universities have a social contract with the community to improve the lives of all Australians – directly and indirectly. As the Go8 has constantly set out, “you don’t have to attend university to benefit, everyone in the community benefits”. Universities defend our national economic, social, and environmental, well-being. They also enable Australia to make a constructive contribution to global well-being.

Universities have a strong role to play, along with schools and other institutions educating culturally flexible and globally minded citizens.

Universities should provide opportunities for youth and young adults living in disadvantage to equip themselves with the knowledge and education needed to pursue fulfilling and successful lives.

Principle 2: Universities serve society through missions in education and research.

Universities are the creators and connectors which underpin the generation and communication of knowledge through both education and research.

Principle 3: Education is primarily about growing and forming minds to generate an intellectually informed and agile population; a population able to add value to society now and into an often unknown, but fast-evolving future.

University education is essential for us all to flourish in a rapidly changing economy and society.

“you don’t have to attend university to benefit, everyone in the community benefits”.

Principle 4: Research contributes to understanding the fundamental questions about existence while also solving key problems to make a better, and better-equipped world.

The effectiveness of Australia's university sector underpins the productivity of the Australian economy and the cultural, intellectual, and moral richness of the nation. This is through our education, our fundamental research, and our commitment to translation and commercialisation.

Principle 5: Universities combine missions in education and research to enable Australia to thrive economically, socially, and culturally, and to take its rightful and significant role on the world stage.

Through education, research, development, and debate, universities provide a critical voice that supports Australia's role on an international stage.

The effectiveness of Australia's university sector underpins the productivity of the Australian economy and the cultural, intellectual, and moral richness of the nation.

Attachment 2 – Equity in a seamless Tertiary Education System

Introduction

The Go8 believes that a tertiary education system that provides benefits for all Australians – regardless of background – depends on four fundamental pillars:

- A seamless and flexible tertiary education system that has pathways in between vocational and higher education.
- A Universal Learning Entitlement (ULE) that supports lifelong learning as needed across the tertiary education system.
- Needs-based student funding that supports equitable access to the tertiary education system regardless of background.
- A focus on delivering career and life outcomes from education – not just access – through a data driven and evidence-based approach.

The Accord Interim Report addresses each of these issues but not in an integrated and detailed way that must be the focus of future policy development.

Redesign of post-secondary education as a seamless tertiary education system supporting equity

The Go8 recommends that the tertiary higher education and vocational training systems be redesigned to form an integrated training and higher education sector oriented to lifelong learning. This sector should incorporate flexible pathways between vocational training and higher education **in both directions** and at various qualification levels.

This new sector should be supported by a redesigned upper-secondary education system and have appropriately supported academic and vocational tracks/pathways.

An integrated tertiary sector would have several advantages over the current system. It could support improved outcomes for equity students by providing better access and opportunities to those from disadvantaged backgrounds.

Benefits include:

- 1.** Pathways with more flexibility provide “multiple chance” opportunities to enter or re-enter education and training at various points, and alternative entry points to draw new entrants into the system. This flexibility will be necessary if Australia is to meet new tertiary education attainment targets.
- 2.** It is better suited to equipping students with both advanced-level academic knowledge and skills, and with vocationally oriented and applied knowledge and skills.
- 3.** With lifetime learning and appropriate pathways it allows students to upgrade and acquire new knowledge and skills throughout their working lives, better equipping them for changing knowledge and skills

demand, and occupational and industrial restructuring. Two-way pathways enable academic and vocational upgrading and sideways transitions.

- 4.** Proper system redesign would incentivise better collaboration between governments, industry partners, providers and relevant communities and is likely to result in a more efficient use of resources with smaller transaction costs and fewer adverse unintended consequences.

Implementation of Lifelong Learning and a Universal Learning Entitlement

The line between the years of learning and the years of earning has become increasingly blurred over time. Unlike previous generations who may have secured a decent paying job upon completing year 10, it is not enough for current students to attend the compulsory years of secondary schooling to secure and maintain a well-paid job in today’s economy.

Attachment 2 – Equity in a seamless Tertiary Education System

Similarly, as current Australian workers shift their careers and adapt to new technologies, ongoing education will be necessary to acquire new knowledge, skills and training. Lifelong learning is no longer a platitude, but a living reality. All Australians will continue to require access to a high-quality tertiary education in order fully participate and benefit equitably from the changing economy.

Australia is in urgent need of a lifelong learning system that will enable all Australians greater access and opportunity to benefit from a high-quality tertiary education. Such a system would also allow the nation to better meet future workforce needs, as well as meet the cultural and social aspirations of the population.

A universal learning entitlement to post-compulsory education and training and the introduction of a Lifelong Learning Account to track credit and verify learning, would provide the opportunity for all Australians, regardless of background, to learn, train and re-skill as their needs and circumstances change throughout life.

Lifelong learning is currently stymied by the absence of an integrated system of recognised prior learning and experience framework, as well as barriers such as cost and time. By taking advantage of the Unique Student Identifier already in place, a lifelong learning system should seek to remove the barriers of moving in and out of tertiary education and make it easier for learners to navigate the education suited to their needs and interests.

The lifelong learning system would also need to be flexible enough to respond to changes in workforce demand as they arise; while also embedding individual flexibility for people to skill and reskill as necessarily throughout their career.

There may also be options for a variety of funding models. For example, high employer demand for particular skills could lend itself to options for commercial funding, including companies funding additional places in areas of high demand such as cyber security.

Targeted, long-term, collaborative solutions and focused strategies that work across all levels of government to address impediments and barriers to equity in education

It is important to acknowledge that the differences we see in student access, participation, and success in tertiary education, particularly higher education, are the downstream product of processes that are set in place from birth and exacerbated throughout schooling. There is a long pathway into university and a systems approach to equity which can capture the cumulative and compounding effects of disadvantage is necessary if we are ever to improve outcomes. Inequity in education will never be solved by merely tinkering at the edges.

Consideration should be given to a holistic suite of policy changes designed to set all students up for success, including before they reach university, while they attend university, and after they complete their degrees.

This will require coordination across all levels of government and education stakeholders. For example, Federal and State/Territory Government departments and agencies, along with community service organisations, local communities, the philanthropic and charitable sectors, industries, business, trade unions, and universities should create targeted, long-term strategies to address systemic barriers to participation, success, and employment that universities and the Department of Education alone cannot solve.

As a first step, and as the Go8 has recommended previously in our submission to the Productivity Commission inquiry, the Government should work with universities on the appropriate level of funding per student required to support progress towards equity and gender representation targets.

Similarly, the Government should also consider updating the current system of financial support available to students during study to remove material barriers and ensure the benefits of a quality education and lifelong learning can be shared by all.

Attachment 2 – Equity in a seamless Tertiary Education System

A National Equity Data/Evidence Institute

The targeted, long-term solutions and focused strategies developed to ensure equity of access and success, which will be implemented across Government agencies, the tertiary sector and individual tertiary institutions **must be research and data driven**. We must know what works, what hasn't worked and why, if we are to evolve our tertiary system and maximise access across the population.

The Go8 recommends the creation of **a new national agency or network of research centres and institutes to drive a data driven approach to equity, excellence and student outcomes in the tertiary sector**.

It is data and data systems that will help the sector know what success looks like, track progress and measure it.

This agency would bring together, in a single or federated structure, the research and evidence remits of the Australian Education Research Organisation (AERO), the National Centre for Vocational Educational Research (NCVER) and the National Centre for Student Equity in Higher Education (NCSEHE). A core part of the Agency's research agenda could be enabled by developing an advanced data capability (a National Education Evidence Database) built from integrated public sector data assets, including provider data. It is data and data systems that will help the sector know what success looks like, track progress and measure it.

A National Data/Evidence Institute would enable tertiary education providers to understand where and how they can have the most impact, and, in collaboration with Government, industry, communities and other sectors create mission-relevant targets. The agency would also be responsible for generating and making accessible, the evidence base that will allow students to make informed educational choices about courses, programs, and providers.

Australia's new National Data/Evidence Institute should have a remit to undertake or enable:

- Applied research to generate an evidence base for policy and practice.
- Evidence about what works, for whom, and under what circumstances (i.e., policy and program solutions) to promote excellence and equity in tertiary education.

The agency could also be responsible for providing **independent long term and strategic advice to the proposed Tertiary Education Commission**

about Australian tertiary education and for supporting national evaluation and monitoring against high level strategic outcomes and impact targets.

Go8 outcomes for students from under-represented and disadvantaged backgrounds

Collectively Go8 members have sector leading success and retention rates for students from under-represented and disadvantaged backgrounds.

Equity Category	Go8 Participation Numbers by year				Retention 2020 %		Success 2021 %	
	2018	2019	2020	2021	Go8	National	Go8	National
Indigenous	2,536	2,628	2,832	3,199	82.9	74.2	80.9	74.3
Low-SES	22,554	22,296	22,631	23,207	87.6	79.5	87.4	82.5
Disability	16,663	18,162	22,219	27,182	85.9	79.8	84.5	80.7

Attachment 3 – A damaging international student tax

1. Introduction

The Universities Accord Interim Report canvasses a levy on international student fee income but there is little discussion provided about whether this is a good policy, and moreover limited information on its design and purpose. Multiple purposes are canvassed, including to “provide insurance against future economic, policy or other shocks, or fund sector priorities such as infrastructure and research.”¹

An international student levy is a tax on exports. If implemented, it would cause adverse economic impacts to Australian education export volumes (our leading services export) and the Australian economy more generally. This damage would be at a time when we are trying to revive export markets and growth.

Implementing a levy would conflict with these international efforts, including in Asia, and damage Australia’s reputation as a preferred destination for international

students both for their immediate tertiary education and potentially their intentions to consider Australia as a destination for longer-term skilled migration. Australia needs more long-term skilled migration to underpin a productivity revival, not less.

Because a levy would not grow the Australian higher education sector, but instead make it smaller, it is self-defeating and could even reduce resources available for equity and access goals that the Accord is canvassing.

¹ Australian Government. (2023), *Australian Universities Accord Interim Report*, p. 139.

An international student levy would attempt to some extent alleviate the funding burden on the Australian Government related to the Accord but puts even more reliance on fees from international students. In the case of funding infrastructure and research – international students are already doing this through their fees, so it is unclear how the levy decreases the overall reliance on international students or cross subsidies. The levy appears to be more about redistribution from the “haves” to “have nots” in the sector – at the expense of growing the size of the sector.

Without specific detail about the intended design of a levy, it is difficult to be precise about its economic impacts. Nonetheless an international student levy can be analysed under plausible scenarios using both tax principles and economic modelling. This attachment provides some indicative potential economic impacts on universities and the broader Australian economy under one scenario.

The indicative analysis in this attachment is consistent with the results of recent formal economic modelling by the Centre of Policy Studies at Victoria University that shows the economic damage to Australia from an international student levy.² The Centre of Policy Studies analysis is summarised in Box 1.

The levy appears to be more about redistribution from the “haves” to “have nots” in the sector – at the expense of growing the size of the sector.

² Liu, X.L., Giesecke, J., & Nassios, J. (2023). 'The economic effects of an international student levy', *Centre of Policy Studies Working Paper No. G-341*, August.

Attachment 3 – A damaging international student tax

Box 1: The Centre of Policy Studies analysis of the economic effects of an international student levy

The Centre of Policy Studies undertake a preliminary investigation of an international student levy (ISL) using a dynamic multi-regional multi-sectoral model of the Australian economy with tax detail.

The analysis evaluates the effects of an ISL on national and regional macroeconomic variables and evaluate and compare its economic efficiency. They find, an ISL, like most other taxes, has **adverse economic consequences for Australia**. A scenario of permanent 5 per cent ISL on fees paid by international students for tertiary, technical and vocational education results in:

- A reduction in international student demand for Australian education of approximately 6.6 per cent.
- Reduced activity in the tertiary and technical and vocational education sectors by 1.1 per cent and 0.7 per cent respectively.
- Long-run negative impacts on national labour supply, real wages, and gross domestic product (GDP).
- Depending on how ISL revenue is recycled, potentially larger negative impacts for regions that have relatively large education export sectors.

While the analysis suggests a student levy has a lesser marginal excess burden compared to existing taxes in Australia, this is because the scenario assumes the levy is at a relatively low rate, and the levy is spread across all of the tertiary, technical and vocational education sector.

The Centre of Policy Studies report is available from:
<https://www.copsmodels.com/elecpr/g-341.htm>

2. Who ultimately pays the levy and how responsive are they?

The economic impact of a levy depends on who ultimately pays the levy (distinction between who the levy is charged to and who ultimately bears the levy) and how responsive they are to the imposition of a levy which changes the effective price of higher education.

The levy could be borne entirely by the university through a cut to general university funds which in turn would mean those funds could not be used for other purposes such as research, infrastructure, staffing and education services. Or the levy could be entirely borne by international students in the form of higher tuition fees and/or reduced services, or a combination of both the university and the (international) students could ultimately pay.

3. How price responsive are international students?

While evidence suggests **domestic** Australian students have a relatively inelastic demand for higher education (possibly close to zero) partly because of the operation of income contingent loans which breaks the nexus between current price and current demand for education, this is not necessarily the case for international students.

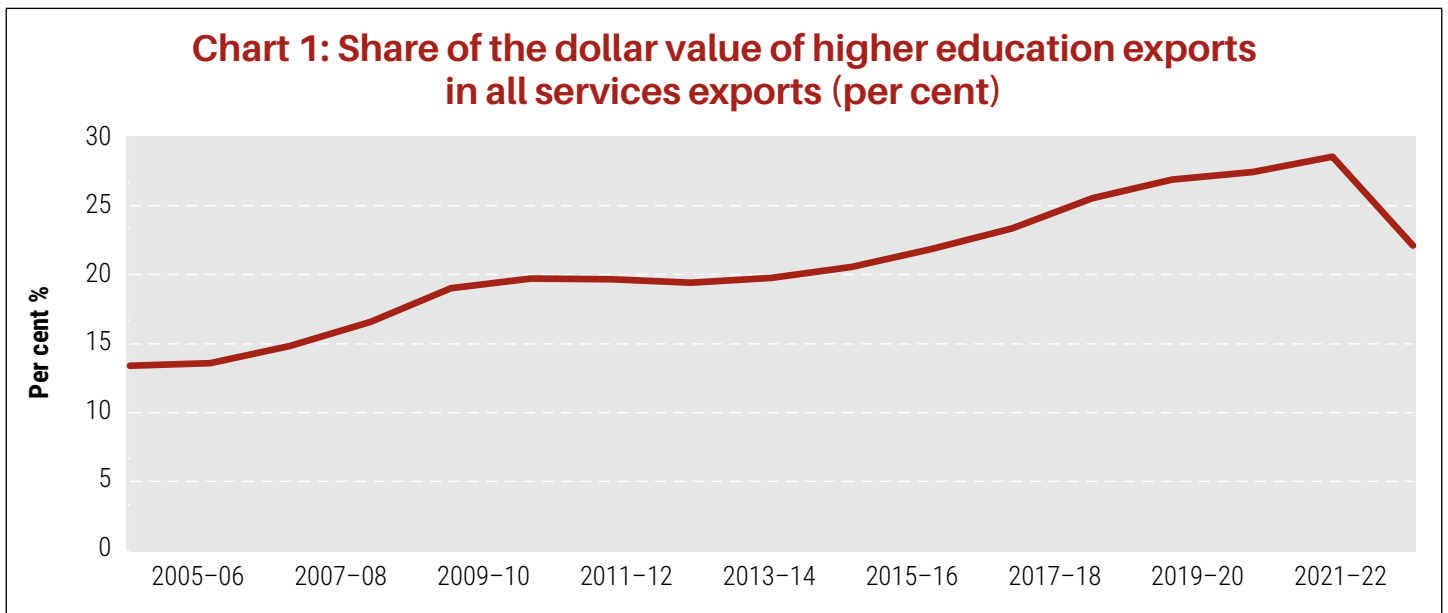
The market for **international** education is more competitive and internationally mobile students responsive to “prices” as well as a range of other factors. For example, the Centre of Policy Studies (CoPS) analysis discussed in Box 1 use an elasticity of demand in international markets for education exports of -3.5. The scenario in this attachment uses an elasticity of -1.25 based on a study by Min and Falvey (2018) that investigates factors affecting international student flows to Australia for higher education.

Attachment 3 – A damaging international student tax

They find that cost competitiveness is an important factor – they construct an explanatory variable that encapsulates tuition fees and charges, living costs, and the role of the exchange rate. Their most robust model suggests a 1% increase in costs relative to those in the UK and USA (competitor destinations for international students) would result in a 1.25% decline in international student enrolments in Australia.³

4. Australia's international student higher education market

Chart 1 from the ABS shows higher education export income is an increasing share of Australia's overall export income – in other words, an important component of Australia's economic activity and prosperity.



Source: ABS 5368.0.55.004 – International Trade: Supplementary Information, Calendar Year, 2022.

³ Min, B.S., & Falvey, R. (2018). 'International student flows for university education and the bilateral market integration of Australia', *Higher Education*, 75, pp. 871–889.

5. Potential impacts of a levy - hypothetical scenario

International student fee revenue across Australian 38 public universities in 2020 (the choice of 2020 represents a somewhat “average” recent year that is neither the peak of pre-COVID 2019, or the trough of 2021) was \$9.2 billion. As a scenario, suppose the Australian Government wanted to impose a \$500 million annual levy, and this was borne entirely by the international students through the levy being passed on entirely via higher tuition fees at the Australian 38 universities.

Assume that international students are price elastic and have a price elasticity of -1.25 consistent with the exchange rate adjusted cost elasticity in the Min and Falvey (2018) study for Australia. What does this scenario imply for universities revenue and international student enrolments?

Using international student fee revenue and enrolment data for 2020 from the Australian Department of Education, a \$500 million levy across

38 universities would result in a reduction in annual total revenue across these institutions of around \$158.9 million using 2020 figures and a reduction in enrolments of around 27,800 (Table 1). Table 1 also shows the top twenty universities negatively impacted by the levy given their relatively high international student fee income and enrolments.

Note this is the impact before the levy is used (or “redistributed”) so the net impact depends on how the levy is used and which institutions receive what portion of the levy amount raised. While this may mean the overall adverse impact is somewhat mitigated, two points are worth noting:

... a \$500 million levy across 38 universities would result in a reduction in annual total revenue across these institutions of around \$158.9 million ...

Attachment 3 – A damaging international student tax

Table 1: Impact of \$500 million annual levy borne entirely by international student fees

		Indicative impact on international student fee revenue (\$ million, using 2020 data)	Indicative reduction in international student enrolments (number, using 2020 data)
TOTAL for 38 universities		-158.9	-27,800
Top 20 most income impacted universities:	University of Sydney	-19.0	-2,175
	Monash University	-16.9	-2,740
	University of Melbourne	-14.6	-1,849
	University of New South Wales	-11.6	-1,566
	University of Queensland	-11.2	-1,381
	RMIT University	-7.8	-2,256
	Deakin University	-6.8	-991
	University of Technology, Sydney	-6.3	-952
	Macquarie University	-5.2	-743
	University of Adelaide	-4.4	-623
	Australian National University	-4.3	-603
	Queensland University of Technology	-3.8	-572
	Griffith University	-3.3	-571
	Curtin University of Technology	-2.8	-869
	La Trobe University	-2.7	-589
	Swinburne University of Technology	-2.6	-669
	University of South Australia	-2.6	-465
	Western Sydney University	-2.6	-536
	University of Wollongong	-2.5	-939
	University of Western Australia	-2.4	-364

-
- The Centre of Policy Studies analysis discussed in Box 1 does factor in recycling of the revenue raised by a levy and the analysis finds that the levy still has adverse macroeconomic consequences for Australia.
 - There are other potential negative impacts of the levy not modelled. For example, beyond the negative impact on the *quantity* of labour supply, there is potentially a negative impact on the *quality* of labour supply through, for example, damage to Australia's reputation as a destination for longer-term skilled migration. Any adverse impact on longer term skilled migration and, in turn, Australia's productivity, is not captured by the existing economic modelling.

Broader impacts on export income and the Australian economy

Under this scenario (before any redistribution of the levy collected), apart from the loss of international student fee revenue, there would be

a loss of export revenue related to other goods and services purchased by international students.

Using data for 2020 from the ABS on expenditure on goods and services related to international trade in higher education, a \$500 million levy resulting in a decline of around 27,800 international student enrolments would translate into a further \$771.9 million annual loss in other export revenue for Australia from expenditure on goods and services by international students.

This lost export revenue in turn has multiplier effects through the Australian economy, including for economic activity in sectors of the economy reliant on international students and also employment. For example, using data for 2020 and extrapolating from previous work by London Economics on the export and employment impact of the Go8 Universities for Australia suggests the loss in short-run employment from the \$500 million levy scenario could be around 2,800 jobs.

Attachment 4 – Basic research: the foundation of progress, productivity, and a more sovereign nation

Introduction

A nation's commitment to basic research is critical because it delivers the foundation of technological advancement and therefore it delivers progress in an extremely competitive and unsettled world.

Basic research contributes to a nation's long-term productivity by expanding its knowledge and creative capacity by creating a culture of scientific curiosity. Moreover, it provides the backbone of a more sovereign nation – something increasingly required in an era of heightened geopolitical concerns.

Most of the inventions we use every day would not have been discovered without basic research – whether in Humanities and Social sciences (HASS) or Science, Technology, Engineering, and Mathematics (STEM). For example, magnetic resonance imaging (MRI) technology,

the internet and smartphones which came out of long-standing basic research in physics, mathematics, and computer science.

To quote Sir Isaac Newton, **basic research provides the “shoulders of giants” to stand on to pursue and achieve further human progress and prosperity.**¹

Importantly, basic research stimulates the economy – it boosts economy-wide innovation and productivity, which in turn influences wages growth, income and demand, and the resources available to undertake additional research.

¹ <https://www.inc-aus.com/justin-bariso/12-brilliant-quotes-from-the-genius-mind-of-sir-isaac-newton.html>

Policy imperatives

Australian Government policy should encourage domestic basic research. It is vital to our prosperity and a field in which Australia excels. It supplements and enhances the global stock of knowledge that has served Australia well in terms of international knowledge diffusion (new knowledge combined with existing knowledge).

Recognising and explaining the relative incentives, contributions, and strengths of different sectors performing Australia's basic research is also important to maximise the public return from our basic research.

Given the “blue-sky” nature of basic research that does not necessarily lead to immediate or direct tangible applications, a systematic approach to investment in basic research is required. There are significant public returns to research & development (R&D) systems over the long-term.

The basic research effort in Australia is being led by the higher education sector and specifically the Go8

universities. As such, the Go8 has proposed a *National Research Strategy* with a focus on basic research, as part of the Universities Accord process.

The ultimate winners of such policy direction are not vested interests, but the national interest and therefore every Australian benefits.

Types of basic research

As defined by the Australian Bureau of Statistics (ABS), basic research can be split into two:

The ultimate winners of such policy direction are not vested interests, but the national interest and therefore every Australian benefits.

Attachment 4 – Basic research: the foundation of progress, productivity, and a more sovereign nation

-
- **Pure basic research:** carried out for the advancement of knowledge, without seeking long-term economic or social benefits or making any effort to apply the results to practical problems or to transfer the results to sectors responsible for their application. Examples include gravitational waves detection.
 - **Strategic basic research:** undertaken to acquire new knowledge directed into specified broad areas with the expectation of practical discoveries. It provides the broad base of knowledge necessary for the solution of recognised practical problems. Examples include many quantum research projects which build the basis of knowledge that will underpin the development and use of quantum computers and quantum communications.

Hence basic research consists of the “pure” pursuit of knowledge and “strategic” knowledge in broad areas in the expectation of practical discoveries. It is often a prerequisite for the development of practical applications.

Basic research and real-world applications

While basic research is invariably the prerequisite for development of practical applications (or commercial opportunities), the link between basic research in one field and its broader application is not often evident or immediate.

Many great discoveries with the biggest potential impact start as outliers from basic research. An excellent recent example was having an already existing body of basic research to make possible the rapid development and deployment of COVID vaccines using mRNA technology (Box 1).

Australia and quantum science is another example. Australia has invested in basic research related to quantum disciplines for over a quarter of a century and the payoffs are starting to be realised now, including through, for example, the Sydney Quantum Academy.

Box 1: Basic research as the foundation for the COVID-19 vaccines

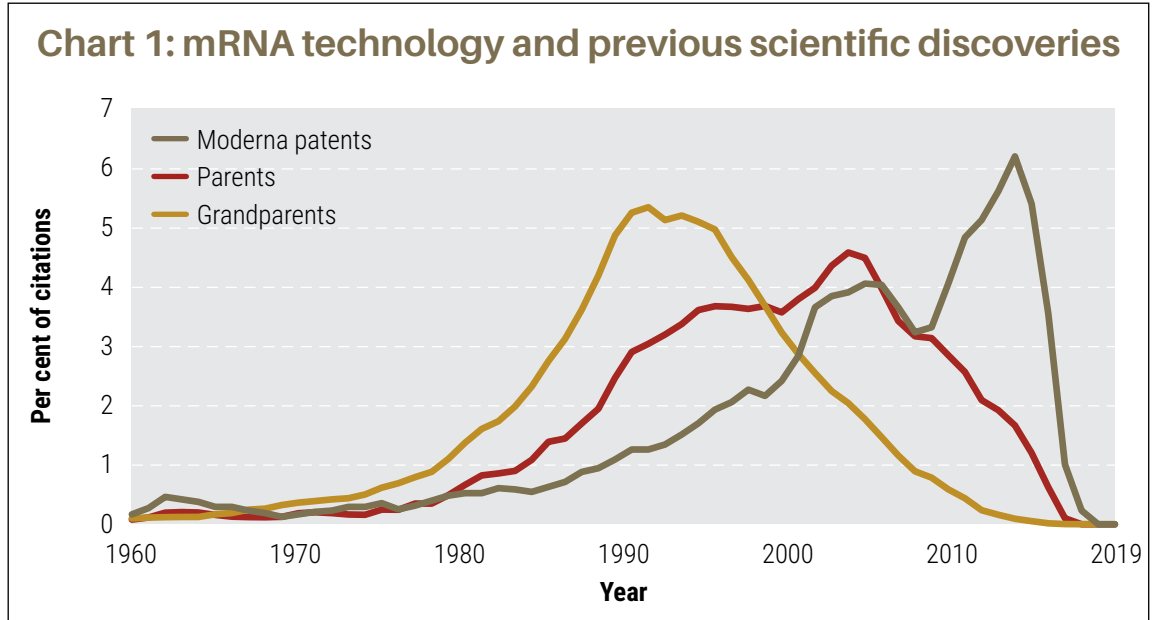
Basic research has a long “life” – it can be useful long after it is initially created as illustrated in the following International Monetary Fund (IMF) charts.² The COVID-19 vaccines could not have been developed so quickly without an existing knowledge base – the knowledge that came from the basic research of years before.

Chart 1 shows that mRNA technology was not invented to address COVID without building on existing basic research spanning back 30 years. The brown line shows the dates of the published science cited by five of the Moderna COVID-19 vaccine patents, and Moderna’s dependence on past research that had peaked around 2010. **The red line shows citations of the vaccine’s “parent” patents – defined as patents referenced in the five original vaccine patents. This relates to earlier basic research on editing genetic codes. It peaked in the early 2000s.** Even earlier basic research in reading genetic codes provided the basis for citations from “grandparent” patents (yellow line) of the early 1990s.

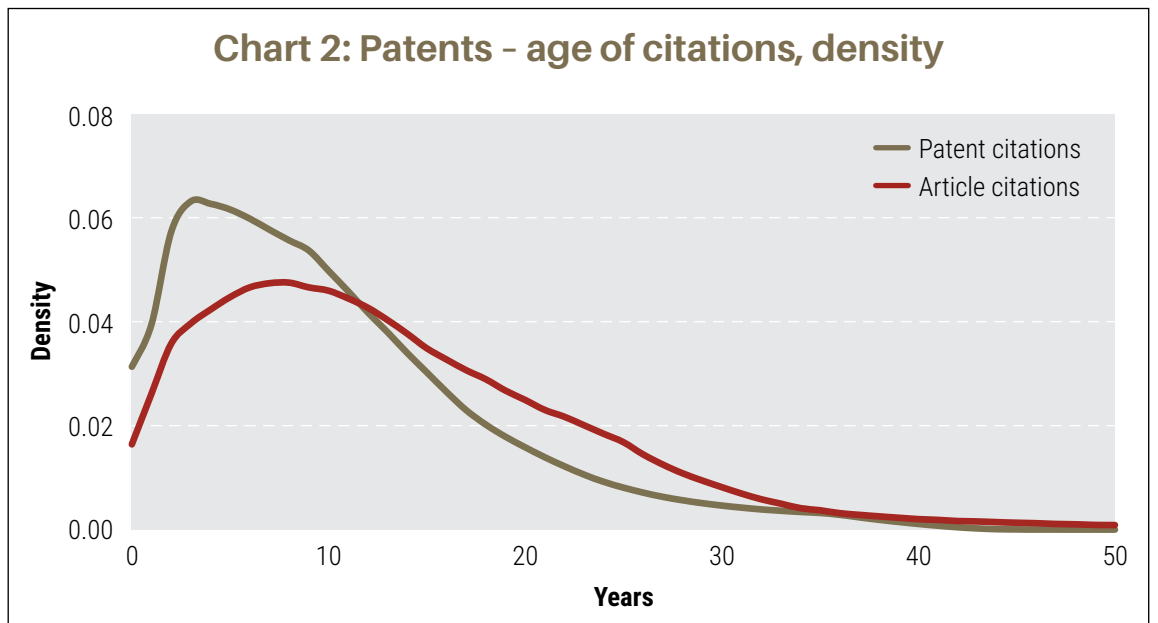
Chart 2 from the IMF plots the age of scientific articles (red line) and patents (brown line) cited by various patents. We can see basic research has a longer life while patent citations peak earlier.

2 International Monetary Fund. (2021). Research and innovation: fighting the pandemic and boosting long-term growth. World Economic Outlook. October. <https://www.imf.org/en/Publications/WEO/Issues/2021/10/12/world-economic-outlook-october-2021>

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Source: International Monetary Fund. (2021).



Source: International Monetary Fund. (2021).

The economics of basic research

Basic research is a long-term investment and benefit because it does not aim to deliver immediate financial return, and practical and commercial applications follow much later.³

Unlike physical investment goods, (basic) research is a unique type of investment good – it is ‘non rivalrous’ meaning it can be used by multiple people simultaneously, giving rise to ‘increasing returns to scale’ and effectively productivity growth (i.e., doubling the amount of physical/rivalrous goods together with non-rival knowledge during

Unlike physical investment goods, (basic) research is a unique type of investment good – it is ‘non rivalrous’ meaning it can be used by multiple people simultaneously ...

Like investment in physical goods such as machinery and equipment that adds to the physical capital stock, research (including basic research) adds to the knowledge capital stock, and we know the level of per capita output are a function of these capital stocks (as well as the human capital stock).

production more than doubles the quantum of what can be produced).⁴

This is not to say that R&D (including some basic research) is necessarily also non-excludable – research, or the applications of that research, can to some degree be made non-excludable through property rights, licencing, patents, and other forms of appropriating the benefits of the research.

3 Rosenberg, N. (1990). ‘Why do firms do basic research (with their own money)?’, *Research Policy*, vol. 19, pp. 165–174.

4 Jones, C. I. (2019). ‘Paul Romer: Ideas, nonrivalry, and endogenous growth’, *Scandinavian Journal of Economics*, vol. 121, no. 3, pp. 859–883.

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Investment in **basic research that is non-rivalrous and largely non-excludable may provide the basis for wider societal benefits** (positive “spillovers” such as society wide public health benefits from a vaccine) over and above the ‘private’ returns to that investment.

The existence of potential wider societal benefits emanating from non-rivalry in basic research has long been recognised as one factor why the level of basic research performed across an economy may be less than optimal.⁵

This reasoning provides the basis for government intervention to encourage more business investment in blue-sky research, to conduct basic research themselves, or to fund other institutions, such as universities, and public research institutes to conduct basic research.⁶

Estimates of the benefits of basic research

Estimates of private and public rates of return to basic research are significant – between 20 per cent and 50 per cent for privately funded basic research and much higher for publicly funded basic research.⁷

The IMF found that a 10 per cent increase in the domestic (foreign) basic research stock is estimated to lift a nation’s productivity by around 0.3 (0.6) per cent on average, with like compound interest, the benefits accumulating over time. The IMF concluded that **“Investment in basic science boosts productivity and pays for itself over the long term”**.⁸

5 Arrow, K. (1962). ‘Economic welfare and the allocation of resources for invention’, in *The rate and direction of inventive activity*, Princeton University Press.

6 Department of Industry, Innovation and Science (2016). *Australian innovation system report 2016*, Canberra.

7 Salter, A. J., & Martin, B. R. (2001). ‘The economic benefits of publicly funded basic research: a critical review’, *Research Policy*, vol. 30, pp. 509–532.

8 IMF, *Ibid.*, p.76.

However, **the IMF also found that basic scientific research in advanced economies was underfunded and policies that fund public basic research, and subsidise private basic research, would have a positive payoff.**

This evidence points to the global nature of research knowledge spillovers (knowledge to knowledge transfer). It found that international productivity spillovers are significant, particularly from basic research. Hence the conclusion that the potential for Australia's productivity gains depends on both international **and** domestic basic research.

But this does not mean an optimal strategy for Australia would be to "free ride" on R&D performed overseas (nor should it mean we try to produce all basic research domestically).

A more sovereign nation **does not mean** excluding international research and research partners.

Australia's research-intensive universities (Go8) are recognised knowledge creators at the global

technological frontier. This means Australia does not automatically have to be a follower of international R&D – we are already among the leaders.

For example, despite a drop off during COVID, since 2000, Australia's share of authors credited in the world's top one per cent highly cited publications has more than doubled from 3.1 per cent to 7.9 per cent in 2020.

Australia's basic research expenditure trends

An overview of aggregate Australian R&D expenditure helps to understand trends in basic research expenditure:

- Australia's expenditure on R&D as a percentage of GDP stands at 1.8 per cent, well below the OECD average of 2.7 per cent.
- Australia's expenditure on R&D as a per cent of GDP has declined by 0.45 percentage points since 2008 when it stood at 2.25 per cent – in line with the then OECD average of 2.24 per cent.

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In Australia, approximately \$35.9 billion was spent on R&D across four sectors in the most recent year for which ABS data is available (Chart 3).⁹

Business expenditure on R&D (BERD) (\$18.2 billion in 2019–20) accounts for around half of Australia’s R&D expenditure. **As a point of comparison with Australia’s AUKUS partners, their share of BERD in total R&D is much higher, at around 67 per cent for the UK and 75 per cent for the USA.**

Expenditure on R&D by higher education institutions (HERD) was \$12.7 billion in 2020, accounting for around 35 per cent of total Australian R&D expenditure.

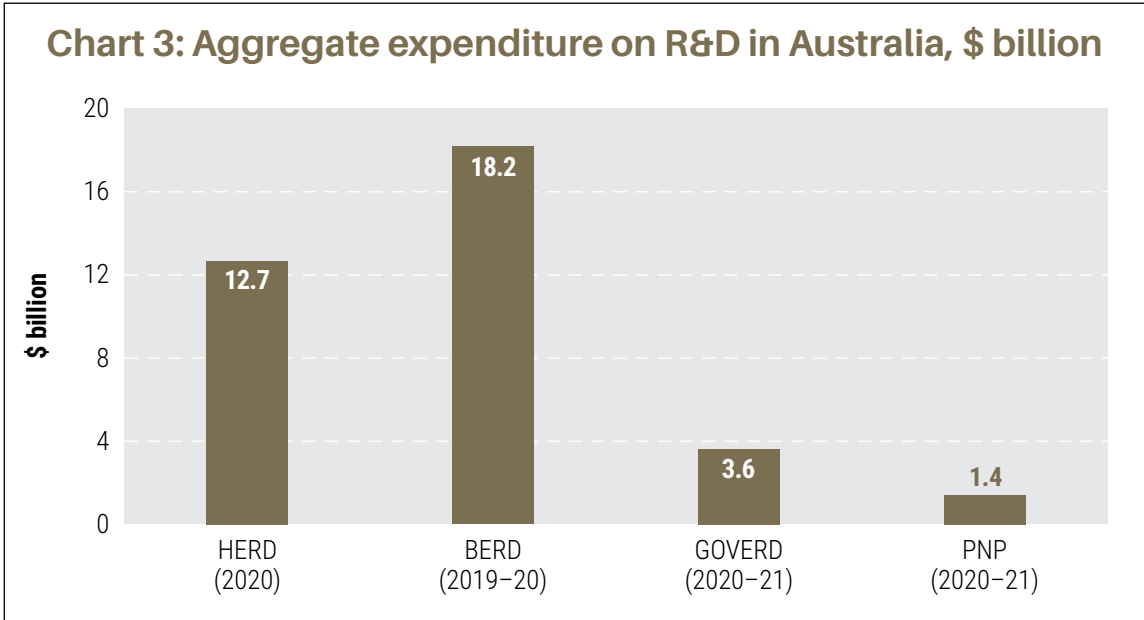
Government (GOVERD) and private not for profit organisations (PNP) together spent around \$5 billion on R&D in 2020–21, accounting for approximately 14 per cent of total R&D expenditure in Australia.

Within each of these sectors’ aggregate R&D expenditure, basic research expenditure features to a different degree. The next section discusses trends in basic research expenditure.

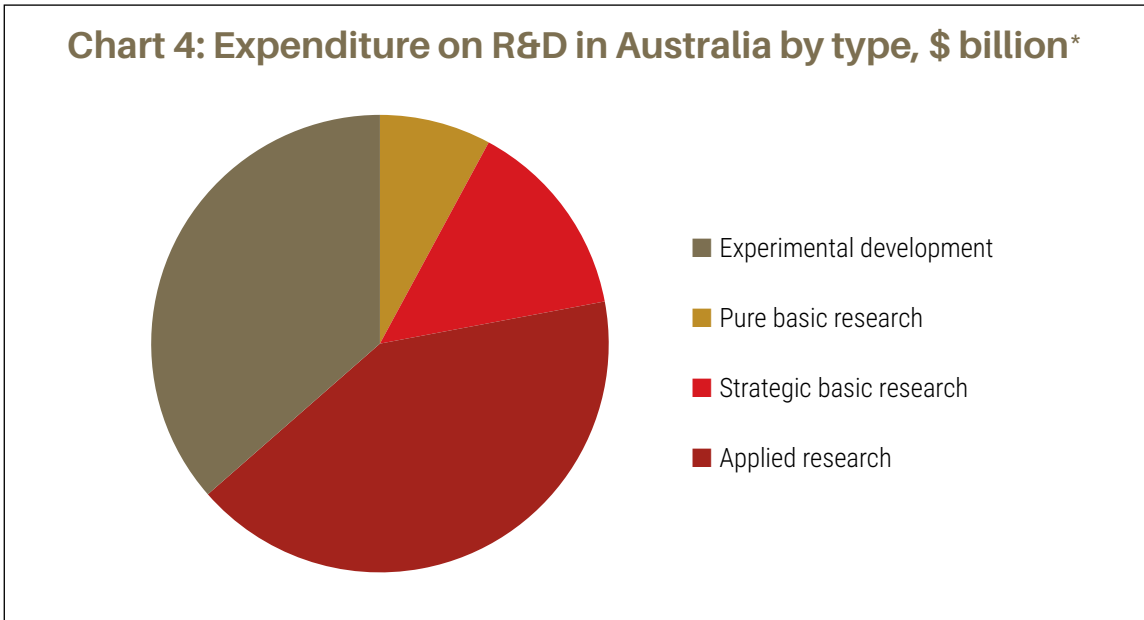
R&D expenditure data by type for the most recent year available shows that spending is very much on the “D” side of R&D (Chart 4). Spending on experimental development (\$13.1 billion) accounts for 36 per cent and taken together with applied research, these account for 78 per cent of total expenditure.

As a comparison, in the UK and the USA, the combined share of experimental development and applied research in total R&D is slightly higher, at around 82 per cent and 85 per cent, respectively.

⁹ The data are for calendar year 2020 for higher education expenditure on R&D (HERD) while for business expenditure on R&D (BERD) it is for 2019–20. Expenditure on R&D by government (GOVERD) and private non-profit organisations (PNP) is for 2020–21.



Source: ABS. HERD = higher education expenditure on R&D; BERD = business expenditure on R&D; GOVERD = government expenditure on R&D; and PNP = private non-profit organisations expenditure on R&D.



* ABS data for latest published year. Source: ABS.

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In real terms, all sectors are spending more on basic research now than they were in the mid-1990s, with Chart 5 showing in real terms aggregate spending rising from \$3.9 billion to \$7.9 billion in 2020. But Chart 5 shows that **in real terms aggregate spending on basic research in Australia has declined since 2012 when it peaked at \$8.2 billion.**

The share of total basic research expenditure by sector in Australia has changed significantly since the mid-1990s as shown in Chart 5:

- The government expenditure share of basic research has declined around 14 percentage points since the mid-1990s (government is spending more on basic research in absolute terms but growth in spending has not been as strong as the higher education and business sectors).
- Business has a 17 per cent share of total expenditure on basic research, and it has grown 7 percentage points from the mid-1990s. Recall the earlier discussion on the economics of basic research – the business

sector does have an incentive to undertake basic research for their own growth and performance, if a business can capture some of the benefits of basic research and outweigh the costs of the research.

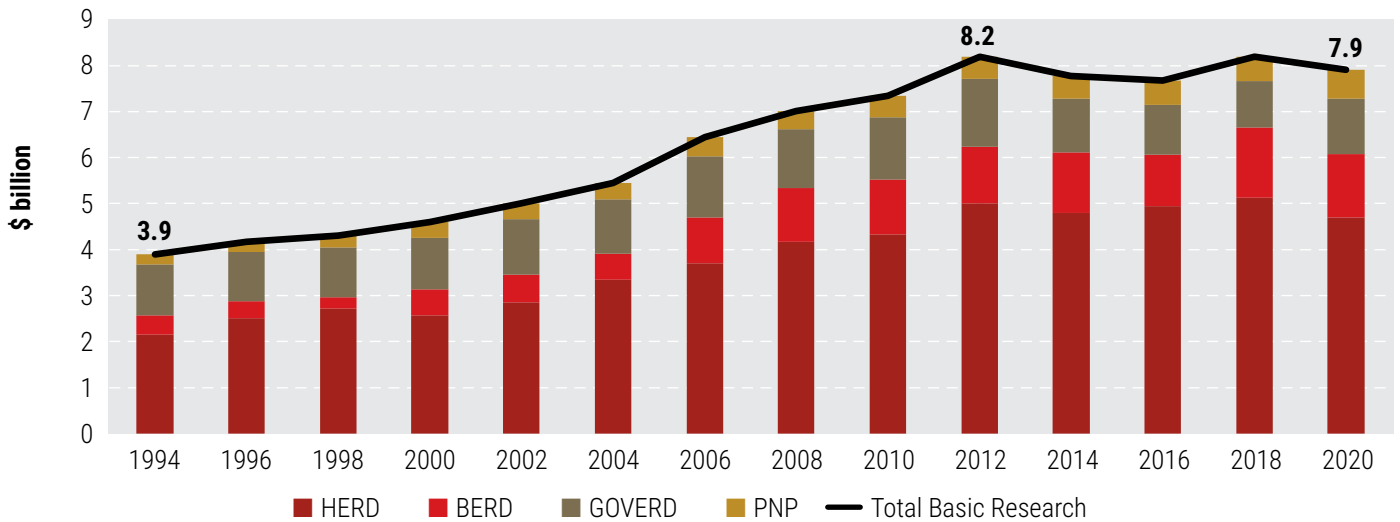
- The higher education sector dominates spending on basic research in Australia. Higher education accounts for \$4.7 billion in 2020 (59 per cent of the total). This share has risen from around 55 per cent in the mid-1990s.

The relative rise in Australia of basic research expenditure from the higher education sector contrasts with our AUKUS partners. Chart 6 compares for the AUKUS partners the higher education sector expenditure share of total basic research expenditure in each of those economies.¹⁰

While for Australia the higher education share of expenditure on basic research has remained at 59 per cent from 2007, for both the UK and the US the share of higher education expenditure has fallen significantly. For the US it has fallen from 58 per cent to 47 per cent, and for the UK it has fallen from 55 per cent to 43 per cent.

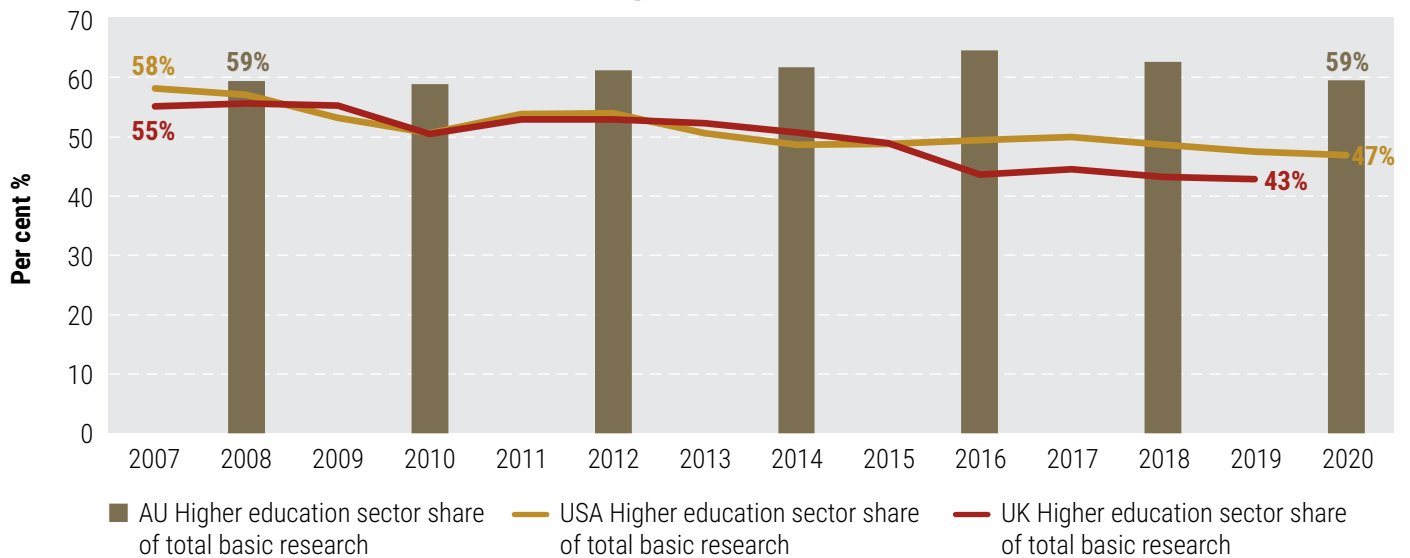
¹⁰ 2007 is the earliest year for which a consistent comparative sample of data is available.

Chart 5: Basic research expenditure in Australia by sector, real terms, \$ billion



Source: ABS and Department of Education.

Chart 6: Higher education sector share of total basic research expenditure, per cent



Source: ABS, Department of Education and OECD.

Attachment 4 – Basic research: the foundation of progress, productivity, and a more sovereign nation

Go8 universities spend around 65 per cent of the higher education sector's total expenditure on basic research. Hence, **the Go8 universities are also a key contributor to total basic research expenditure in Australia, contributing around 39 per cent in 2020 (\$ 3.1 billion)**. Chart 7 shows this contribution has remained stable in the period since the mid-1990s.

The split between expenditure on pure basic research and strategic basic research has changed over time (Chart 8).

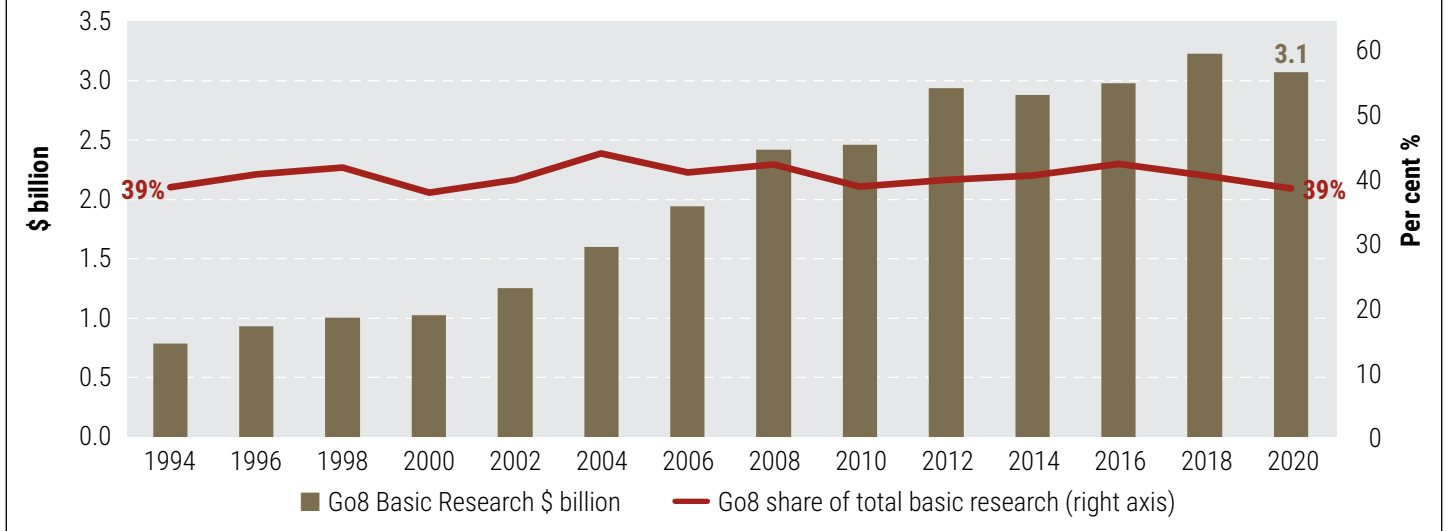
Go8 universities spend around 65 per cent of the higher education sector's total expenditure on basic research.

The ratio of pure basic to strategic basic research expenditure in the higher education sector has decreased from 1.68 to 1.09 since the early 1990s. Expenditure is now almost evenly split between pure and strategic basic research. The business sector ratio has also fallen from 0.16 to 0.07, indicating the sector was always focussed on new knowledge for practical discoveries, which has become more paramount over time.

A more dramatic drop in the ratio has occurred for private non-profit organisations, whereas government expenditure has fluctuated since the early 1990s in its split between strategic basic research and pure basic research.

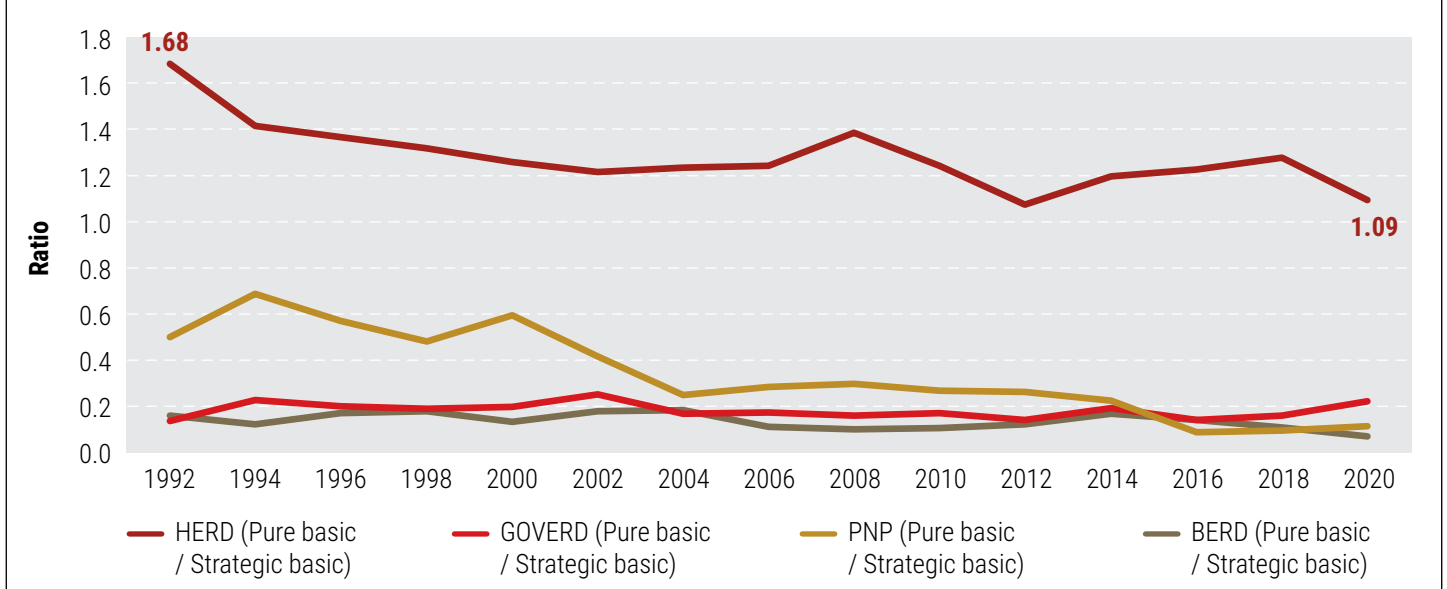
A further drop in proportionate spending on pure basic research may have undesirable and unforeseen consequences for R&D at large given pure basic research provides the blue-sky knowledge base.

Chart 7: Go8 basic research expenditure (\$ billion) and share of total basic research expenditure, per cent

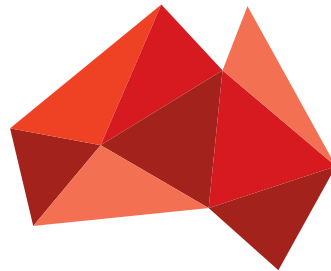


Source: Department of Education and ABS.

Chart 8: Pure basic to strategic basic research expenditure in Australia, ratio



Source: ABS.



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THE UNIVERSITY OF
**WESTERN
AUSTRALIA**



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University



Australian
National
University



THE UNIVERSITY
of **ADELAIDE**



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MELBOURNE



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