UNIVERSITIES AUSTRALIA SUBMISSION

2022–23 PRE-BUDGET SUBMISSION

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UNIVERSITIES AUSTRALIA

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1 EXECUTIVE SUMMARY

The COVID-19 pandemic and its continuing impacts across the economy and society have not spared Australia's universities.

The university sector has been hit hard, with repercussions felt throughout the country. Students, institutions and student accommodation providers – as well as tourism operators and other businesses who provide services for and benefit from international students – have all been significantly affected. Student enrolments – and more critically, commencements – are down; student accommodation buildings are empty, and small businesses dependent upon international students are suffering – and in some cases closing down.

At the same time, however, the unprecedented crisis of the last two years has highlighted the indispensable contribution that universities make to the nation.

University researchers studied and sequenced the virus, followed its medical, economic and social impacts, and developed effective, expert responses. Federal, state and territory Chief Medical Officers – every one of them educated at an Australian university – led one of the world's most effective Government and community responses to the worst pandemic in a hundred years.

Similarly, universities continue to educate the health professionals who work on the front line. Students in health disciplines have joined the surge workforce that has responded to increasing caseloads and changing conditions.

Our universities are fundamental to the nation's recovery and paving the way to a bright future.

University research will continue to make new breakthroughs – including on COVID-19 and its effects on the medical, technological, economic and social possibilities for the future.

Universities will educate Australians of all ages to meet the economy's increasing demand for skilled professionals. A million new jobs will be created by the middle of the decade, and the bulk of these will require post-school education and training – most requiring a university degree.

As international borders reopen, and effective vaccines are delivered around the world, international education will begin to recover. International students will return – gradually and safely – to Australia's cities and towns, boosting economic activity and strengthening connections with the world – especially our Asia-Pacific neighbours.

Universities Australia sets out 12 practical policy recommendations to improve the effectiveness of the Australian Government's support for the nation's universities in the 2022–23 Federal Budget.

As demographic growth increases the number of young people seeking higher education, and the labour market demands more skilled graduates, Government will need to ensure that the supply of university places is adequate to meet demand. More places will be needed, especially in the middle of the decade.

At the same time, Government and universities need to work together to ensure that every qualified Australian – regardless of background – has the opportunity to go to university. For a start, the recent – and very welcome – initiative to uncap university places for Aboriginal and Torres Strait Islander students from regional and remote areas should be extended to all Indigenous students.

Universities Australia calls on Government to reaffirm its central role in providing substantial long-term support for research – which underpins Australia's prosperity, competitiveness and security. In particular, Government should continue to support high quality basic research – the indispensable basis of all later applied research, translation and commercialisation. Universities Australia looks forward to working with Government to develop long-term solutions to issues of research funding.

To more effectively support university-industry collaboration and business R&D, Government should shift part of the generous pool of funding for the Research and Development Tax Incentive (RDTI) into direct funding programs to increase innovation and support more local R&D.

Government could support international education and international students – as well as public health – by partnering with universities to provide information and guidance to arriving students on proof of vaccination status, requirements for self-isolation and arrangements for COVID-19 testing.

Finally, Universities Australia encourages Government to work with universities to identify areas of regulatory overlap and to develop more efficient regulatory systems.

Recommendation 1:

Government should ensure that the funding framework for government-subsidised university places is adequate to meet future student demand due to changes in population and the labour market.

Recommendation 2:

Government should extend demand-driven places to all Aboriginal and Torres Strait Islander students, not just those from regional and remote areas.

Recommendation 3:

Government should extend eligibility to access the Higher Education Loan Program (HELP) to Australians undertaking non-award microcredentials.

Recommendation 4:

Government should fund a time-limited health service placement adjustment package to support health workforce supply and skills growth.

Recommendation 5:

Government should provide a time-limited targeted grant program to support additional clinical education technology in the university sector.

Recommendation 6:

Government should increase long-term investment in university research, reaffirming the Government's central role in providing substantial, long-term support for an activity that underpins national prosperity, competitiveness and security.

Recommendation 7:

Government should shift Research and Development Tax Incentive (RDTI) funds away from indirect funding of industry R&D towards targeted, direct-funding programs that aim to increase innovation, additionality and absorptive capacity in industry.

Recommendation 8:

Government should fund the development of information for culturally and linguistically diverse populations to provide guidance on self-isolation requirements on arrival into Australia, access to COVID-19 testing and to assist them in proving their vaccination status.

Recommendation 9:

Government should fund service providers to ensure international students are able to access physical and mental health support services.

Recommendation 10:

Government should re-establish the Endeavour Program.

Recommendation 11:

Government should review the New Colombo Plan with a view to expanding the program to include a broader range of destination countries and to provide targeted opportunities for specific cohorts of students who are currently under-represented.

Recommendation 12:

Government should work – in partnership with Universities Australia – to identify and deal with regulatory overlap and to coordinate regulatory and reporting requirements more effectively in different portfolios.

2 OPPORTUNITIES FOR UNIVERSITY EDUCATION

Recommendation 1:

Government should ensure that the funding framework for government-subsidised university places is adequate to meet future student demand due to changes in population and the labour market.

Recommendation 2:

Government should extend demand-driven places to all Aboriginal and Torres Strait Islander students, not just those from regional and remote areas.

Recommendation 3:

The Australian Government should extend eligibility to access the Higher Education Loan Program (HELP) to Australians undertaking non-award microcredentials.

2.1 KEEPING PACE WITH STUDENT DEMAND

University education has clear benefits for individuals and to the economy as a whole.

University-qualified workers enjoy higher wages, better employment outcomes and improved health and wellbeing. Over their lifetime, a university graduate is expected to be $674,000 better off on average than a non-graduate.

The benefits to the wider community and economy are even greater: each new university graduate delivers an average of $891,000 in benefits to the broader economy over their lifetime. This includes higher tax contributions, the creation of new jobs and higher wages for non-graduate workers, and increased investment.[1]

Each percentage point increase in higher education attainment – equivalent to about 50,000 additional graduates in the workforce – is associated with an increase in GDP of 0.09 per cent per year. This is equivalent to $1.8 billion, compared to 2018 GDP.[2]

Australian Bureau of Statistics (ABS) data consistently shows that graduates perform better in the labour market than non-graduates. Unemployment rates of graduates have been consistently below the national unemployment rate by around two percentage points since 2007. In May 2021, while Australia's overall unemployment rate was 5 per cent, the unemployment rate for those with a Bachelor degree or higher was lower at 3.1 per cent. In the same reference period, unemployment rates for those with a diploma/advanced diploma and Certificate III/IV were higher at 4.1 per cent and 4.7 per cent respectively; while those with no post-school qualifications recorded an unemployment rate of 7.3 per cent.[3]

[1] Deloitte Access Economics 2020, *The importance of universities to Australia's prosperity*, A report to Universities Australia, Canberra.

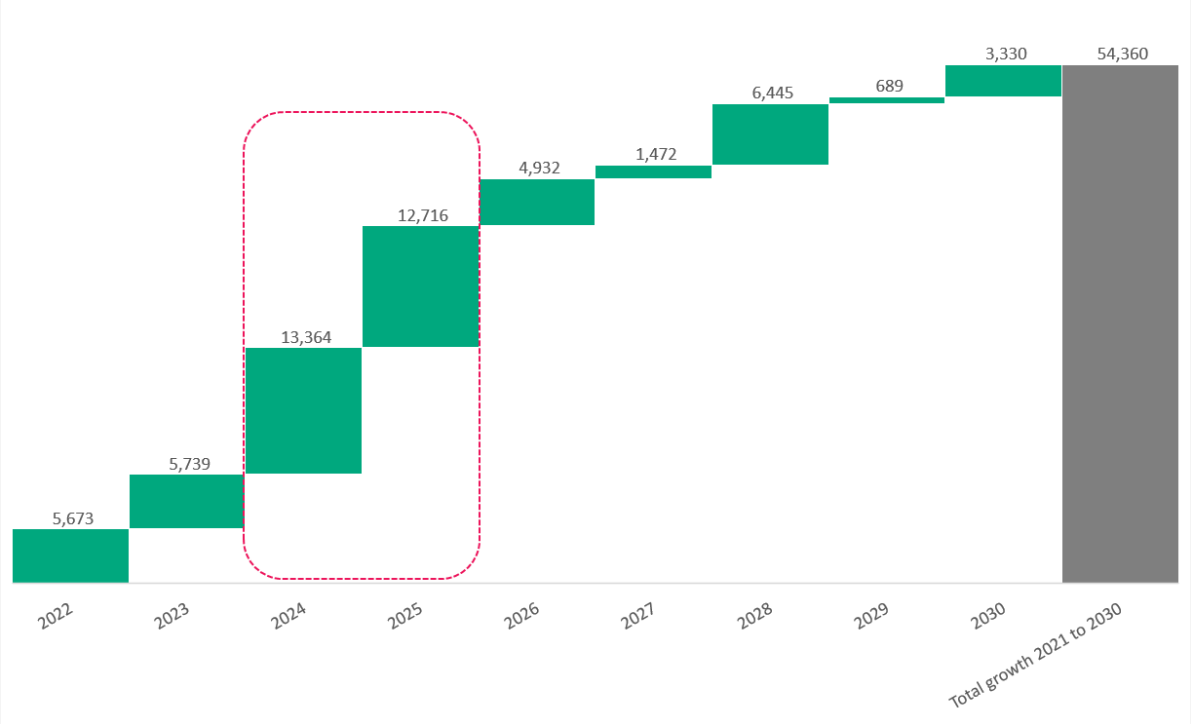
[2] Ibid.

[3] Australian Bureau of Statistics 2021, *Education and Work, Australia, May 2021,* cat. no. 6227, Canberra.

Universities Australia acknowledges the Government's commitment to meeting demand for higher education places through the Job-ready Graduates (JRG) package, which passed through Parliament in October 2020. However, this is unlikely to be enough. According to the ABS population projections, there will be 55,000 more 18-year-olds by 2030, compared to 2021. The 18-year-old population is projected to increase from 307,331 in 2021 to 361,691 in 2030 (See Figure 1). It is also evident from Figure 1 that there will be a huge jump in 18-year-olds in 2024 and 2025 (the so-called 'Costello babies'), with annual growth in the number of 18-year-olds increasing from around 5,000 to 6,000 to more than 12,000 each year in 2024 and 2025.

Demographic growth in the youth population and changes in skills in demand means that many more people – both school leavers and others – will want to study in coming years. According to the *Longitudinal Survey of Australian Youth*, 59 per cent of school leavers plan to go to university when they finish Year 12.[4] Hence to equip Australians with the skills needed to drive recovery and to thrive in the economy of the future, the supply of university places must keep pace with the increasing student demand, especially in the middle of this decade. Government and universities need to prepare now for this increase in demand, to ensure that these young Australians have the same opportunities to go to university as recent youth cohorts – and that they will be ready to meet the nation's skills needs.

Figure 1: Projected growth in 18-year-old population to 2030, compared to 2021



Source: Australian Bureau of Statistics 2018, *Population Projections, Australia, 2017 (base) to 2066,* Series B – medium growth series.

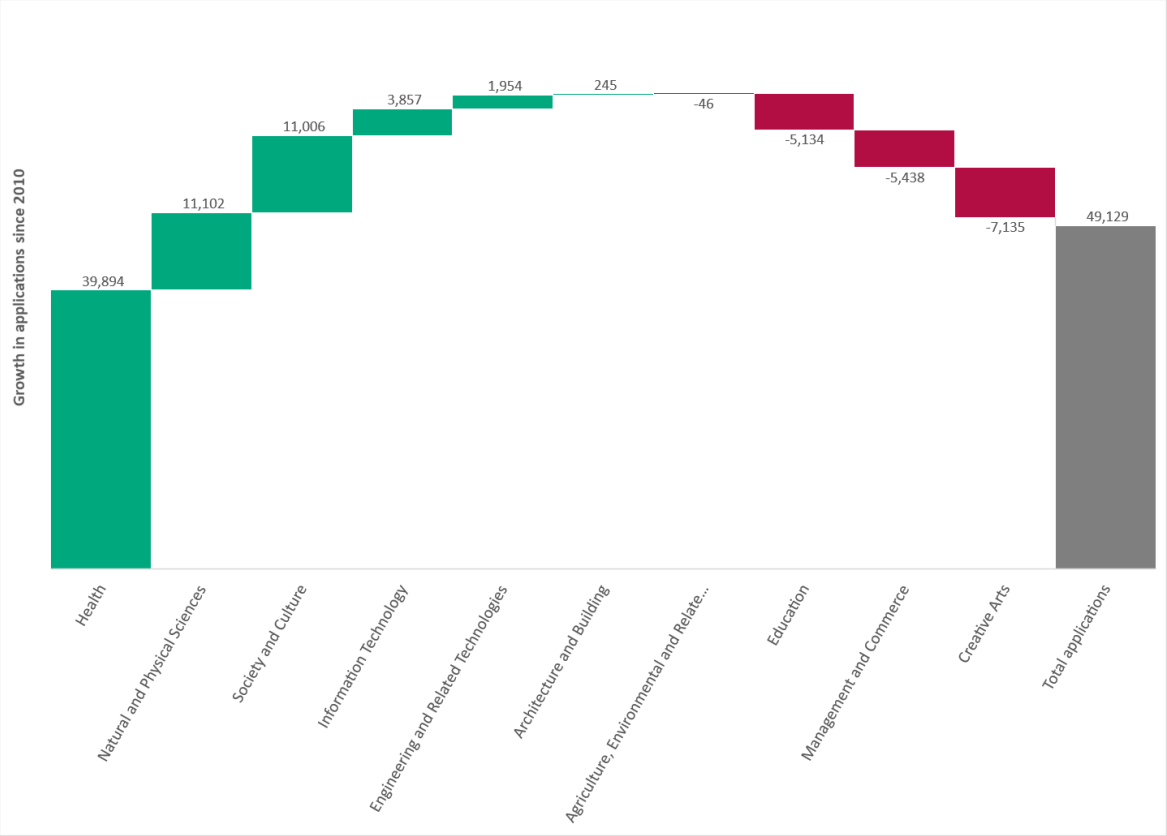
We note that total per-student funding for teaching will fall under the Job-ready Graduates (JRG) package – by 5.8 per cent per place on average – when fully implemented. Moreover, this obligation to do more with less will arise in a context of significant reductions in universities' revenues for some health and STEM disciplines that the Government seeks to encourage.

[4] National Centre for Vocational Education and Research 2019, *Generation Z: Leaving School*, Longitudinal Survey of Australian Youth Infographic, Adelaide.

Student demand (i.e., undergraduate applications) for health and STEM disciplines has increased significantly in the last decade (see Figure 2). Since 2010, undergraduate applications to study Health have increased by 39,894 applications (or 66.4 per cent) – from 60,064 to 99,958 in 2021 – followed by Natural and Physical Science with applications increasing by 11,102 (or 51.7 per cent) from 21,493 to 32,595 applications in 2021; while student demand to study Creative Arts (-23.8 per cent), Education (-16 per cent) and Management and Commerce (-13.6 per cent) has declined significantly.

JRG has reduced student contributions in STEM, Health and some other disciplines in an effort to incentivise student demand. But in some of these disciplines, JRG has also reduced overall resourcing (Commonwealth plus student contributions) per place. Universities Australia is concerned that universities may experience difficulties in seeking to meet the increasing student demand for Health and STEM disciplines – the disciplines that the JRG package seeks to encourage – given the significant reduction in resourcing per student for these fields.

Figure 2: Growth in undergraduate applications by broad disciplines to 2021, compared to 2010



Source: Department of Education, Skills and Employment 2021, *Undergraduate applications, offers and acceptance 2021*.

2.2 DEMAND-DRIVEN FUNDING FOR INDIGENOUS STUDENTS

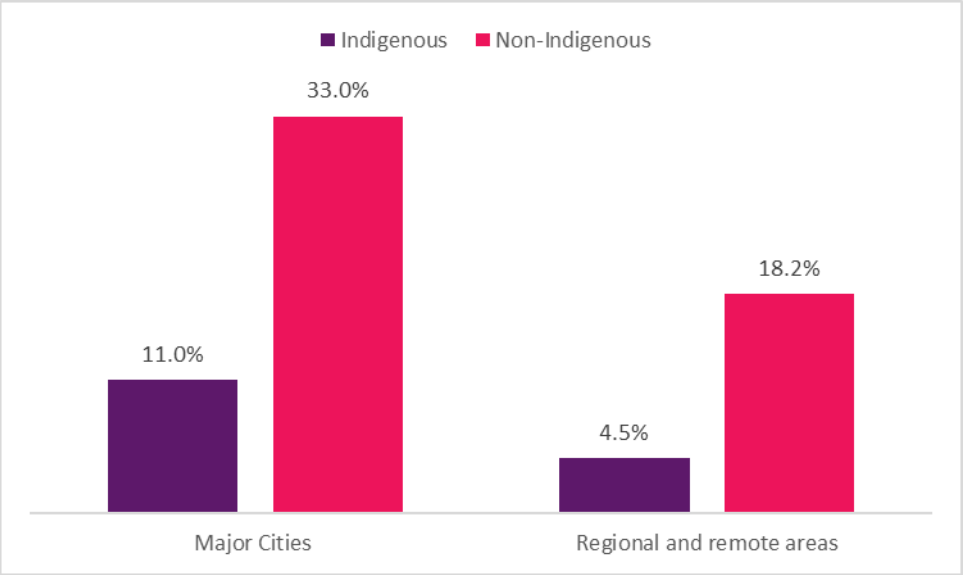
The Job-ready Graduates package included a measure to make funding of Bachelor places (except in Medicine) demand-driven for Indigenous students from regional and remote areas. This means that eligible students will be guaranteed a university place. This is a commendable measure which will help universities to continue to increase participation in higher education by Aboriginal and Torres Strait Islander people. Indigenous enrolments more than doubled under the former demand-driven system. This progress was put at risk by the funding freeze that ended the

demand-driven system at the end of 2017. Despite previous growth in enrolments, Aboriginal and Torres Strait Islander people are still under-represented in the student population (1.9 per cent in 2019) compared to their share of the total population (3.1 per cent).[5]

Universities Australia recommends that demand-driven funding be extended to all Indigenous students in Bachelor degrees (other than Medicine), regardless of where the student lives.

Our reasoning is simple. Most Indigenous people live in cities and towns. According to Australian Bureau of Statistics data, 75 per cent of Aboriginal and Torres Strait Islander people live in major cities.[6] While Indigenous people in major cities are much more likely to have a degree than those from the regions, they are much less likely to have a degree than non-Indigenous people in the cities. The attainment rate for Indigenous people aged 20–64 in urban areas is only 11 per cent – one third of the figure for the non-Indigenous population (33 per cent). While disadvantage does increase with remoteness for Indigenous people, it is clearly and obviously present in urban areas too.

Figure 3: Higher education by Indigenous status and regionality, 20 to 64 years old, 2016 Census



Source: Australian Bureau of Statistics, *2016 Census of Housing and Population*, TableBuilder.

As reports on the *Closing the Gap* agenda have consistently shown, higher education for Indigenous people is a success story, and a major contributor to the advancement of Aboriginal and Torres Strait Islander people. Enrolments and completions are trending up, and for those Indigenous people that have degrees, there is effectively no gap in employment. The 2016 Census found that both Indigenous and non-Indigenous graduates had employment rates of 83 per cent. For all Indigenous people aged 15–64, employment rates are around 47 per cent – well below the non-Indigenous rate (72 per cent).[7] Annual Government surveys on graduate employment outcomes consistently show that Indigenous graduates' outcomes are comparable to – or better than – those of non-Indigenous graduates.

[5] DESE 2020, *Higher Education Student Statistics 2019* and ABS 2016, *Census of Population and Housing.*

[6] ABS 2018, *Estimates of Aboriginal and Torres Strait Islander Australians, June 2016,* Cat. No, 3238.0.55.001

[7] Australian Institute of Health and Welfare 2019, *Indigenous employment*, https://www.aihw.gov.au/reports/australias-welfare/indigenous-employment

2.3 FUNDING TO SUPPORT STUDENT ACCESS

In addition to ensuring that there are enough university places overall, policy settings should work to make access to university fairer – both as a matter of social justice and in order to draw on the talents of all Australians, regardless of background.

The single most effective policy intervention to support equitable access to higher education was the demand-driven system (DDS). When the number of university places was uncapped, universities could offer places to every qualified applicant. Participation grew strongly across the board: domestic undergraduate enrolments grew by 43 per cent from 2008 to 2019 (latest). Growth was even more pronounced in those groups in the population that are traditionally under-represented in higher education over the same reference period: the number of students from low socio-economic (SES) backgrounds grew by 65 per cent, regional students were up by 46 per cent and Indigenous enrolments more than doubled (up by 120 per cent). It is important to note, however, that despite this strong and historic growth, these groups remain under-represented at university compared to their share of the total population. Numbers of students from low socio-economic and regional/remote backgrounds have declined since the DDS ended in 2018.[8]

As mentioned, Universities Australia's most pressing policy concern is that a sufficient number of Commonwealth-supported places (CSPs) continue to be available to meet growing demand for higher education. If there is a shortage of places, the economy will lack the graduate skills it needs. Young Australians will miss out on the opportunities a university education brings, and not enough older Australians will have the chance to retrain for jobs in demand.

When demand for university places significantly exceeds supply, it is students from non-traditional backgrounds that are most likely to miss out. We therefore urge Government to maintain an adequate supply of places over the rest of the decade, as demand increases due to demographic growth and to changes in the labour market.

In addition to the overarching importance of adequate supply, access to higher education needs to be effectively supported by targeted policy initiatives. Universities Australia acknowledges Government's commitment to supporting access to university for students from identified equity groups, for example through the Higher Education Participation and Partnerships Program (HEPPP). We also acknowledge Government's intention to consolidate and strengthen relevant programs and initiatives through the new Indigenous, Regional and Low SES Attainment Fund (IRLSAF), announced as part of the Job-ready Graduates package. Universities Australia looks forward to working with the Department of Education, Skills and Employment (DESE) to develop IRLSAF, and the new Equity Roadmap on which it will be based. Universities Australia is concerned about some delays to this important work, but we remain hopeful of decisive progress in 2022. Universities Australia is eager to contribute to the design of IRLSAF in order to ensure that Government initiatives to support access to university remain effective for all equity groups. Further, these initiatives and programs should be designed to maximise additionality – that is, to support those students who, in the absence of dedicated support, would be less likely to aspire to higher education, to enrol at university, to succeed in their studies and to graduate with a degree.

A priority for Universities Australia in 2022 will be to improve universities' support for the increasing numbers of students with disability. Universities can do more for these students to enhance both learning and teaching and the student experience.

However, universities' efforts to support students with disability need to be adequately resourced. At a minimum, Universities Australia calls on Government to increase funding to universities under the Disability Support Program (DSP). Total DSP funding fell by 15 per cent in real terms

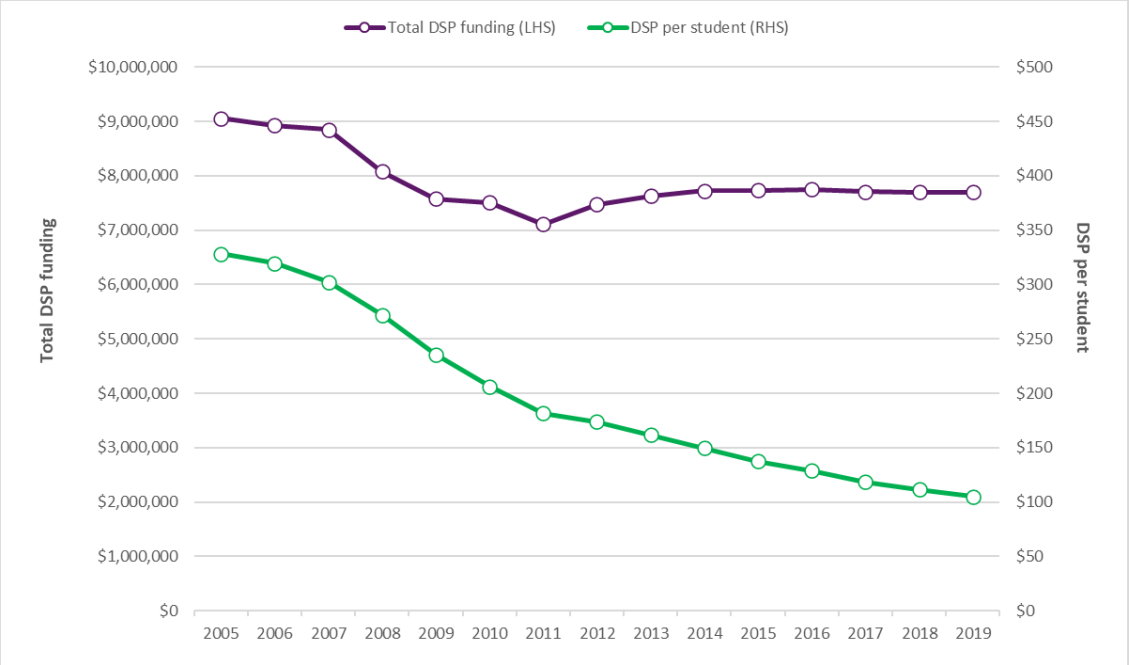
[8] Department of Education, Skills and Employment (DESE), *Selected Higher Education Student Statistics,* various years.

(2020 dollars) from just over $9 million in 2005 to around $7.7 million in 2019.[9] Over this period, the number of domestic students with disability at Table A providers increased by 166 per cent, compared to 44 per cent growth in total domestic enrolments.[10] As a result, the real average DSP per student fell from $328 in 2005 to just $105 in 2019.[11]

There is an increasingly wide range of disabilities reported by students and consequently a wide range of needs. Not every student with a disability needs the same level of funding support. Nevertheless, current levels of average DSP funding are manifestly inadequate. Universities Australia urges Government to immediately raise aggregate DSP funding to its real 2005 level (or $9 million in today's money) or at least by 10 per cent. Looking forward, Government should guarantee at least this level of per student funding in the future by increasing aggregate funding in line with future enrolment growth.

Further, Government should review the adequacy and impact of DSP and other dedicated Commonwealth support for students with disability, in collaboration with universities, with a view to developing options for sustainable and effective support for students with disability.

Figure 4. Funding for Disability Support Program, 2005 to 2019 – total and per student – in 2020 dollars



Source: Universities Australia's analysis based on DESE's administrative data, HESA Determinations and *Selected Higher Education Student Statistics* (various years).

2.4 SUPPORTING LIFELONG LEARNING

Changes in Australia's economic conditions and advances in science and technology will continue to reshape how Australians work. The extent to which individuals, businesses and the nation can benefit from these changes depends significantly on the readiness of Australia's

[9] DESE's administrative data and HESA Determinations.

[10] DESE, *Selected Higher Education Student Statistics*, various years,

[11] Universities Australia's analysis based on DESE's administrative data and HESA Determinations.

education and training systems to help individuals build and maintain relevant knowledge and skills over their working careers.

An Australian student at school today is likely to change jobs and employers 17 times and have five different careers over the course of their working life.[12] The demand for lifelong learning is increasing as more workers transition between jobs. The traditional front-loaded education model immediately after school is no longer sufficient to equip employees with all the skills they will need throughout their working career. Some studies suggest that, by 2040, Australians will need to double the share of learning they do after the age of 21 from 19 to 41 per cent.[13]

Australia's existing financial incentives do not support workers who face time constraints due to training or workers transitioning to new occupations. Prospective students who are time poor and not able to commit to undertake formal higher education qualifications under the Australian Qualification Framework (AQF) currently have to pay upfront for non-award microcredentials. If they have enrolled in microcredentials that do not relate to their current occupations, they are not able to claim the course fees as self-education expense tax deductions.

To remove these financial barriers, the Government should consider extending eligibility to access the Higher Education Loan Program to non-award microcredentials that are not part of a recognised award under AQF offered by Australian universities. A key advantage of the income-contingent loan system is it does not discriminate based on age or employment status. Eligibility is extended to the employed, unemployed, inactive workers, and the self-employed. More importantly, it improves affordability of education and training by removing the need for upfront payment of course fees. The recently released *Review of University-Industry Collaboration in Teaching and Learning* by Professors Martin Bean and Peter Dawkins has also recommended that students participating in industry-focussed microcredentials should be able to access the Higher Education Loan Program through FEE-HELP.

Universities Australia looks forward to the Government's response to Bean and Dawkins' Review and the previous Treasury consultation on extending self-education expense tax deductions to education expenses that are not related to individuals' current employment.

[12] https://mccrindle.com.au/insights/blog/job-mobility-australia/

[13] AlphaBeta 2019, *Future Skills*, Report commissioned by Google, p. 5.

3 ADDRESSING NATIONAL SKILL SHORTAGES

Recommendation 4:

Government should fund a time-limited health service placement adjustment package to support health workforce supply and skills growth.

Recommendation 5:

Government should provide a time-limited targeted grant program to support additional clinical education technology in the university sector.

Australia is facing crucial skill shortages as the nation recovers from the COVID-19 pandemic. The Australian Bureau of Statistics (ABS) June 2021 *Business Conditions and Sentiments Survey* showed more than a quarter (27 per cent) of Australian businesses are having difficulties finding suitable staff.[14] While some of this is due to Australia's internal border closures (32 per cent), the most significant factors impacting the ability for business to find suitable staff are a lack of job applicants (74 per cent) and job applicants not having the required skills or qualifications (66 per cent).

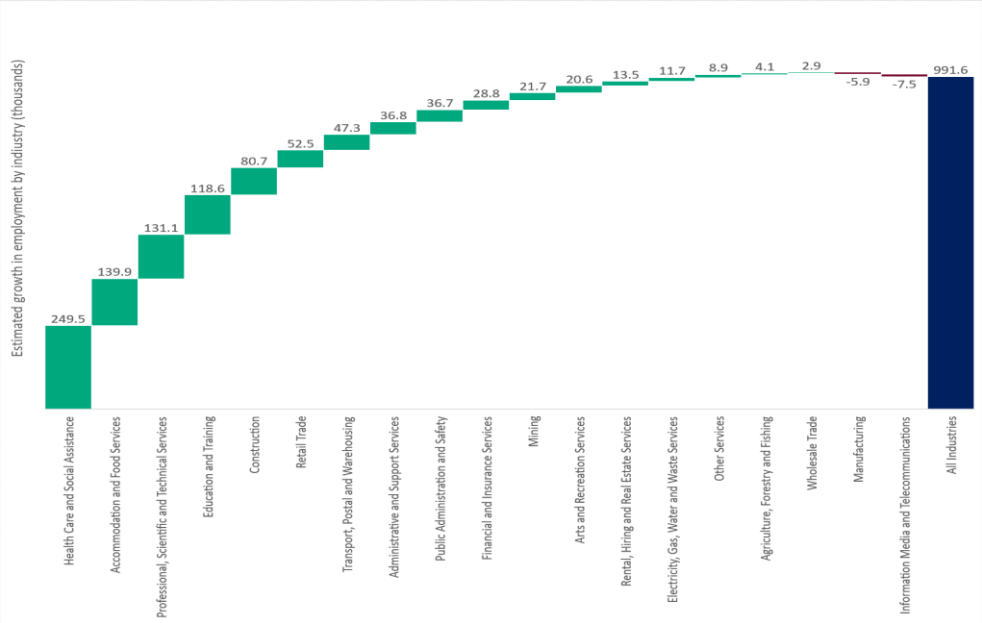
The National Skills Commission (NSC) has predicted Australia's total employment will increase by almost one million jobs (991,600) over the next five years, from 12.7 million jobs in November 2021 to 13.7 million jobs in November 2025. Figure 4 shows the projected employment growth over the next five years to November 2021 in different industries. The health care and social assistance industry has the largest employment growth (249,500 jobs), followed by accommodation and food services (139,900 jobs) and professional, scientific and technical services (131,100 jobs). The top five growth industries collectively represent more than 70 per cent of the total projected employment growth over the next five years.

Australian universities play a pivotal role in addressing the nation's skill shortages. Government policy and funding settings should support universities to prepare the next generation of Australians to meet the future workforce needs of the nation.

Figure 5 shows the NSC's employment projections over five years to November 2025 by skill level. The NSC projected that 52.8 per cent of the additional million jobs over the next five years will require a Bachelor degree or higher. The number of jobs requiring a university degree will increase by 11.8 per cent (or 523,100 jobs), from almost 4.5 million jobs in November 2021 to just under 5 million jobs in November 2025. A further 41 per cent (or 403,900 jobs) will require a post-school qualification. Altogether, nearly all (93.5 per cent) new jobs will require a post-secondary qualification.

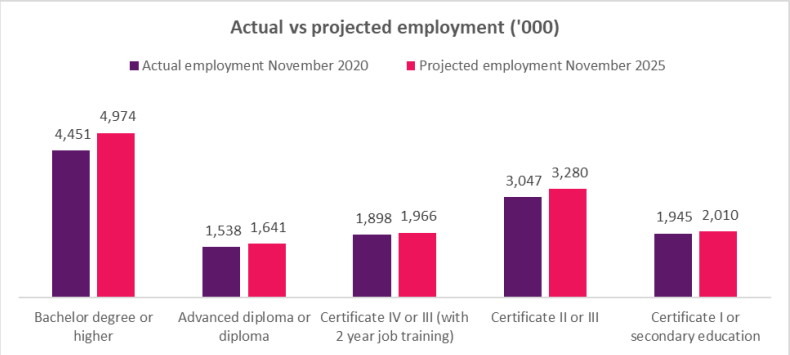
[14] Australian Bureau of Statistics 2021, *Business Conditions and Sentiments, June 2021,* Canberra.

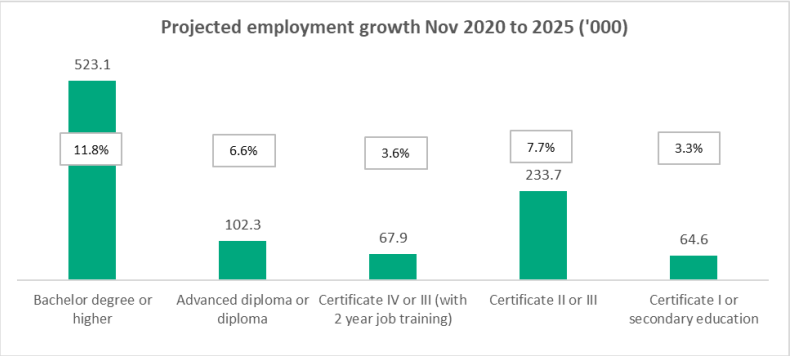
Figure 4: Projected employment growth – five years to November 2025 – by industries (in thousands)



Source: National Skills Commission 2020, *2020 Employment Projections: for the five years to November 2025*, Labour Market Information Portal.

Figure 5: Actual and projected employment by skill levels, November 2021 vs November 2025





Source: Figure 4.
Note: The percentages in the square brackets are growth in projected employments between November 2021 and November 2025

3.1 PIPELINE OF HEALTH WORKFORCE

Ensuring a sufficient and capable workforce is a key part of an effective health system. Australian universities play a critical role in its formation and growth. Universities educate virtually all new entry, pre-registration health professionals in Australia across all disciplines.

Healthcare is an area of projected future jobs and skills growth, particularly in the areas of aged, disability and other community-based care. Health workforce need is also likely to expand further as we traverse the pandemic and deal with the additional challenges posed by post-COVID-19 syndrome ("long COVID"), catch-up care and burn-out of frontline health staff.

Not only are there immediate health workforce supply issues as we address the impact of the pandemic on workforce, COVID-19 has also significantly disrupted Australia's ongoing health workforce supply. The ongoing workforce pipeline is now at risk. Constraints on clinical placements, which are crucial to graduation, have added to the problem. Placements generally occur in health services but are a shared responsibility between education and health providers. Quality and type of placements have a known influence on students' future choice of work domain. Yet the majority still occur in public hospital settings, despite the known workforce need in other, more community-based domains.

Placement challenges are not new, but they have been exacerbated by COVID-19. Despite joint efforts from education and health stakeholders, we now face several pressing placement and clinical education issues which threaten Australia's health workforce supply:

- Clinical placement backlogs arising from COVID-19. If unaddressed, existing health professional students will be unable to complete their studies and the health workforce will shrink as existing staff exit the sector. Ensuring our domestic workforce supply is especially critical while cautious border reopening prevents significant reliance on overseas health personnel.
- The urgent need to expand placements into service areas of identified, growing, yet unmet health workforce and skills need in aged, disability and other health care settings.
- The need to leverage new/existing technologies to augment clinical education and support workforce pipeline continuity where access to face-to-face learning is still restricted.

3.2 EXPANDING PLACEMENT CAPACITY TO SUPPORT WORKFORCE NEED

Various effective health service placement models exist that show the efficacy of partnership approaches between universities and health services in building learner development cultures. These models integrate students into community-based services in sustainable ways that overcome perceived barriers to student placements. As a result:

- clients and providers experience the benefits of student delivered care, including:
    - better client outcomes;
    - staff and student skills growth; and
    - improved staff recruitment and retention.
- students benefit from rich clinical learning environments in non-traditional settings; and
- the community and health sector benefits from workforce gains in areas of need.

These models rely on strong, collaborative relationships between the university and service provider. However, building these relationships requires dedicated time from both parties – and resourcing to achieve.

Universities Australia proposes a time-limited health service placement adjustment package to help build expanded, ongoing placement capacity to support health skills growth and workforce sustainability/distribution.

The package could support universities to work in partnership with health, aged care, disability and community services to:

- identify/develop effective, innovative models that quickly expand placement capacity;
- successfully implement these models to:
    - address any placement backlogs, so aiding immediate health workforce supply; and
    - expand placement capacity in identified areas of unmet health workforce/skills need.
- map, share, evaluate and adjust effective models to build sustainable, longer-term approaches to placement capacity in areas of need, particularly in aged, disability, Indigenous and other services.

3.3 STRENGTHENING WORKFORCE SUPPLY THROUGH GREATER USE OF TECHNOLOGY IN CLINICAL EDUCATION

Some aspects of clinical education will always need to be undertaken face-to-face. Nevertheless, an important strand in supporting clinical education, in conjunction with partnership approaches, is greater access to clinical learning technology. Universities already include elements of this in their health professions teaching. However, expanding universities' capacity to provide a greater number of virtual practicums and clinical experience will help students to progress their studies and support workforce pipeline continuity where access to health service placements is restricted.

There are various components of virtual learning – from simulation and tele-supervision/tele-learning, to augmented, virtual reality and artificial intelligence approaches. How much of each can be utilised varies by discipline, student year level, university and sometimes health service (if used in conjunction with face-to-face teaching). There is no one size fits all. Needs will vary with each university. This technology is also often expensive and needs technical support/training for staff and students to use it effectively as part of clinical training. Funding support for universities to expand this technology is therefore needed. The advantage, however, is that it can support clinical education where access to placements is more limited while also providing students and university/health service staff with important digital health knowledge.

Universities Australia recommends the Australian Government provide a time-limited targeted grant program to support additional clinical education technology in the university sector.

4 UNIVERSITY RESEARCH UNDERPINS NATIONAL PROSPERITY

Recommendation 6:

Government should increase long-term investment in university research, reaffirming the Government's central role in providing substantial, long-term support for an activity that underpins national prosperity, competitiveness and security.

Recommendation 7:

Government should shift Research and Development Tax Incentive (RDTI) funds away from indirect funding of industry R&D towards targeted, direct-funding programs that aim to increase innovation, additionality and absorptive capacity in industry.

4.1 RESEARCH FUELS PROSPERITY

Australia cannot rely on ideas developed elsewhere to keep our economy growing. We can't simply export raw materials and import innovation. We can't rely only on 'buying in' ideas from overseas.

COVID-19 has shown us clearly that over-reliance on importing ideas holds significant risk. Robust, home-grown research capability is a must if we are to remain a prosperous, forward-looking, self-reliant nation.

Australia's economic growth prior to the pandemic was the envy of advanced economies around the world. As the Treasurer, the Hon Josh Frydenberg MP, noted in a speech in August 2019, the Australian economy had grown on average by 3.1 per cent per year, compared to an OECD average of 2.2 per cent.[15] He identified the main driver of this growth as productivity, contributing 1.7 percentage points of that 3.1 per cent growth, with the remaining 1.4 per cent being population and participation.

Australia's future requires a careful balance between global partnerships and national capability in research and development. A continuing decline in national R&D expenditure means this country needs a renewed focus on support by Government for Australian-led R&D.

4.2 WHAT RESEARCH DO UNIVERSITIES DO?

Universities make a very significant contribution to Australia's national research effort. They undertake 36 per cent of all research in Australia (the eighth highest in the OECD), perform 42 per cent of all applied research (more than industry), and 90 per cent of all discovery (basic) research.

Universities provide a 'standing army' of experts, ensuring Australia is resilient to shocks and able to seize opportunities

[15] https://ministers.treasury.gov.au/ministers/josh-frydenberg-2018/speeches/address-business-council-australia

Never has this been clearer than in the face of the pandemic.

Experts in such a wide range of fields are only found inside universities. Researchers from the private sector, Government and specialised research institutes help to make up a healthy research mix, typical in advanced economies, and make valuable contributions. However, the vast majority of Australia's public good R&D is done in universities.

The scale and diversity of research capability in Australian universities significantly enhances the potential for Australia to develop sovereign capability in areas of national significance, including high value-added products and services.

Universities employ researchers who create new knowledge, technology and practices that allow improvements in economic prosperity and social and community wellbeing, and ultimately improve the quality of life for all Australians.

- University research allows discovery of knowledge.
- University research creates expertise that can be called on in times of crisis.
- University research leads to innovation that solves problems.

University research improves the life of every Australian – through the economic contribution that Australian university research makes, and through discoveries, innovation and knowledge that Australian universities have brought into being.

Australian industry increasingly relies on these discoveries and innovations to fuel their growth, with universities performing the highest proportion of Australia's applied research.

4.3 INDUSTRY/UNIVERSITY COLLABORATION

Universities around the world engage with industry, which provides a portion of R&D revenue into institutions. Australian universities sourced 4.9 per cent of their funding for R&D from industry, placing them 16th in the OECD. This compares to the US at 5.59 per cent, the UK at 4.45 per cent, Canada at 7.99 per cent and Israel at 6.91 per cent. Countries with strong manufacturing sectors generally have a higher share, with South Korea at 14.33 per cent (first) and Germany at 13.56 per cent (second).[16] It should be noted that this measure is not appropriate as a measure of industry collaboration as it effectively penalises success in other sources of funding (e.g., international student income).

As the Government noted in its assessment of the Australian innovation system in 2017, Australian firms tend to specialise in modifying innovations introduced by other Australian firms. In 2014–15, the overwhelming majority of Australian innovators across all business sizes were domestic modifiers, and this has been the case since at least 2008–09.

This strategy requires firms to seek out existing innovations, absorb them, and make the required modifications before deploying them commercially. The ability of so many Australian firms to successfully execute this relatively simple strategy is arguably a strength of Australia's innovation system.[17]

However, care needs to be taken not to overemphasise adoption and adaptation at the expense of invention. Invention and new ideas are a critical supply mechanism. Both adoption and invention are required. An exclusive or excessive focus on domestic modification may adversely

[16] OECD 2021, Main Science and Technology Indicators database

[17] Australian Government 2017, *Australian Innovation System Report 2017*

affect Australia's international competitiveness since domestic modification involves a lower degree of novelty than other strategies.

In particular, new-to-market innovation – that is, new to both international and domestic markets – is generally more valuable since it involves a higher degree of novelty, which in turn reflects a higher degree of competence, sophistication and knowledge. In Australia, the estimated proportion of firms undertaking new-to-market product innovation is relatively low, ranking Australia 23rd of 31 OECD countries in 2015.[18]

However, Australian industry has reduced its R&D investment consistently over the last 10 years from a peak of 1.37 per cent of GDP in 2008 to 0.92 per cent in 2019–2020 (latest ABS figures).

Since 1995, Australia has fallen in ranking in the economic complexity index from 55th (out of 133) place, to 86th place in 2019, just below Paraguay and above Uzbekistan.[19]

4.4 HOW DO UNIVERSITIES ADD VALUE TO INDUSTRY?

The scale and diversity of research capability in Australian universities significantly enhances the potential for the country to develop sovereign capability in areas of high value-added products and services. Universities, contrary to some commentary, have deep and productive collaborations with industry that contributes to economic outcomes.

Formal collaborations between Australian businesses and universities generate $12.8 billion a year in revenue directly for the firms which partner with universities. By the time this flows through to the economy, these collaborations are contributing $26.5 billion a year to Australia's income, and have created an estimated extra 38,500 full-time jobs across the country. Modelling by Deloitte Access Economics estimated the total economic return on investment at $5 in GDP for every dollar invested in higher education research.[20]

Furthermore, community-wide (social) returns on investment for publicly funded R&D are likely to exceed 20 per cent, based on modelling of the impact of R&D on private sector productivity. It should be noted that this is likely to be understated.[21]

4.5 SOVEREIGN CAPABILITY

Australia's future will depend on our capacity to develop new and innovative ideas, products and services.

The Department of Defence has a new Sovereign Industrial Capability Assessment Framework. The department's definition of sovereign industrial capability focuses on "access to, or control over, the essential skills, technology, intellectual property, financial resources and infrastructure within our defence industrial base as required".[22] This definition can be used more broadly – it is in Australia's national interest to have access to, or control over, the essential skills, technology, intellectual property, financial resources and infrastructure that we need.

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[18] OECD 2015, *OECD Innovation Indicators*, OECD Publishing, Paris.

[19] The Atlas of Economic Complexity. Accessed 19 Jan 2022

[20] Deloitte Access Economics 2020, *The importance of universities to Australia's prosperity,* A report to Universities Australia, Canberra.

[21] Frontier Economics 2014, *Rates of return to investment in science and innovation*, Frontier Economics, London, p. 5-6

[22] https://www1.defence.gov.au/business-industry/capability-plans/sovereign-industrial-capability-priorities, accessed 6 January 2021

A component of sovereign capability is expertise in cyber security. Cyber security is increasingly an area of concern to Australia, and one where a sovereign capability is essential. Universities play an important role in developing the research expertise to combat cyber-attacks, and through the flow of that expertise into undergraduate and postgraduate programs to developing Australia's cyber security workforce. The demand for cyber security specialists and cyber security knowledge is increasing. Australia's private and Government sectors will increasingly look to employ cyber security specialists, as well as expect heightened awareness of cyber security issues amongst their wider workforces. Universities are rising to the challenge of providing this expertise and this training.

4.6 WHAT'S THE BUDGETARY PROBLEM?

Australia's total investment in R&D is falling behind international competitors. At 1.79 per cent of GDP, Australia lags behind its competitors and is now well below the OECD average of 2.37 per cent in 2017. Australia's investment has been declining for over a decade, down from 2.25 per cent of GDP in 2008, and there is no sign of stabilisation. This contrasts with a small but steady increase in the OECD average over the same period, from 2.28 per cent to 2.37 percent.[23]

The decline has been driven primarily by business reducing its R&D expenditure, but Government expenditure on R&D (GOVERD) has also fallen. Business expenditure on R&D (BERD) as a share of GDP declined by 33 per cent from a peak of 1.37 per cent of GDP in 2008 to 0.92 per cent in 2019–20.[24] Government expenditure on R&D has declined by a similar percentage.

Universities play a pivotal role in Australia's R&D effort. In 2019–20, Australia's universities undertook 36 per cent of Australia's total R&D, and almost 80 per cent of public sector research.[25] Universities perform 90 per cent of discovery or basic research in Australia, and a higher proportion of Australia's applied research than industry – 42 per cent of Australia's applied research expenditure is in universities, compared with 41 per cent in industry.

Universities' share of total research in Australia (36 per cent) is the eighth highest level in the OECD. In comparison, levels of university research as a share of national research are lower in peer nations, including Singapore (28 per cent), New Zealand (25 per cent), the UK (24 per cent), France (21 per cent), Germany (18 per cent), USA (13 per cent), Japan (12 per cent) and South Korea (8 per cent). An example of a peer nation with similarly high rates is Canada (42 per cent).

As business and Government spending declines, universities are carrying an ever-greater share of Australia's R&D effort. Universities' share of Australia's total R&D expenditure has increased by 12 percentage points since 2008, when it was 24 per cent of gross expenditure. However, the amount of university expenditure on R&D supported by dedicated research grants from the Australian Government has declined from 40 per cent in 2008 to 34 per cent in 2018.

4.7 WHAT ARE THE BUDGETARY SOLUTIONS?

Key Australian research developments and sovereign capability address the challenges of the future. Breakthroughs from treating severe asthma and curbing tuberculosis[26] through to the evidence and expert driven response to a global pandemic are all the result of a robust research

[23] OECD 2020, Main Science and Technology Indicators database

[24] OECD 2020, Main Science and Technology Indicators database and Australian Bureau of Statistics 2021, *Research and Experimental Development, Businesses, Australia, 2019–20*.

[25] ABS 2021, *Research and Experimental Development, Businesses, Australia, 2019–20*.

[26] See 'Aridol and Bronchitol' (2018), 'Severe Asthma: Mepolizumab' (2019), 'Tuberculosis control in the South-East Asian region' (2020) and 'History of tuberculosis control in Australia' (2020), Impact Case Studies, NHMRC. Http://www.nhmrc.gov.au/about-us/resources/impact-case-studies.

pipeline. It is the result of essential investment at each stage of the research journey, from invention to adoption, adaptation, and eventual impact. The economic and societal gains of research translation have led to an increased Government focus on commercialisation and collaboration initiatives. However, Australia must first maintain its high-quality research output – so that there will be research to translate.

For a thriving ecosystem of research translation, balance across all aspects of the research pipeline – from basic research through to commercialisation – is necessary. This pipeline does not come with pre-determined timelines. For example, ongoing key developments in neurodegenerative disease research, and subsequent translation and commercialisation activities conducted by the Florey Institute of Neuroscience and Mental Health at The University of Melbourne, began with a NHMRC Postgraduate Scholarship in 1989.[27] Similarly, with a project commencement-to-commercialisation period spanning 1998 to 2014, irrigation technology research advanced and implemented by researchers from the University of Southern Queensland, has now resulted in significant efficiencies, water saving and economic gain for the Australian cotton industry.[28]

As well as fostering the research necessary for translation and impact, universities, with Government support, provide the expertise to effectively adapt and adopt research, and to respond to Australia's most pressing challenges. This expertise is not developed overnight, but instead through persistent investment in the development of Australia's national capabilities and workforce.

The sector appreciates the Government acknowledging the price the country would pay for a sudden reduction in university research expenditure. This was recognised through a $1 billion injection of stabilisation funding in the October 2020 budget. This funding is very welcome. However, a one-off injection of funds does not solve the major, ongoing issues affecting Australia's investment in research and development.

Universities continue to discuss issues of research funding across all disciplines with the Government and seek further dialogue on long term sustainable funding models for all university research, including basic research. The $1 billion one-off supplementation to research funding to meet the detrimental impacts of the COVID-19 pandemic upon institutions was timely and represented a significant contribution to research sustainability. Further policy development needs to be undertaken on the importance to Australia of basic research, including the need to attract, develop and maintain the talented researchers that will sustain this basic research effort. Australia relies on universities to undertake its basic research – they undertake 90 percent of discovery (basic) research in this country. Basic research must be conducted in addition to translational research and other activities directed towards commercial outcomes, not instead of it.

Basic research provides the new knowledge that leads to all the other results. It does not always fit easily into accepted short-term incentive frameworks, yet history has repeatedly reinforced the central part that basic, curiosity-driven research plays in driving prosperity and progress.

4.8 WHAT SHOULD SUPPORT FOR INDUSTRY R&D LOOK LIKE?

Australia is an international outlier in the proportion of support for business R&D that is delivered through indirect funding. Some 86 per cent of Australia's total innovation investment flows

[27] See 'Neurodegenerative disease and metals' (2019), Impact Case Studies, NHMRC. nhmrc.gov.au/about-us/resources/impact-case-studies

[28] University of Southern Queensland, 'Optimising surface irrigation leads to increased productivity in the Australian cotton industry', Engagement and Impact 2018, Australian Research Council

through the Research and Development Tax Incentive (RDTI). This is the highest level of indirect support for R&D in the OECD.[29]

Direct funding of R&D provides flexibility in policy objectives, ensures that investment is well targeted and guarantees additionality. In contrast, indirect policy measures – such as R&D tax incentive – suffer from persistent questions on whether the R&D activity would have been undertaken irrespective of the incentive. Whilst it is often claimed that direct funding is more expensive to administer than an indirect, tax-based incentive, the benefits outweigh this cost. Also, the administrative costs of indirect incentives are considerable.

In the *2016 Review of the R&D Tax Incentive*, the program administration cost was estimated to be $437 million in 2014–15, of which $199 million (or 46 per cent) comprised fees to consultants[30]. The burden of the cost does not fall evenly on business. Compliance costs were estimated to account for 23 per cent of benefits for small businesses, compared to 8 per cent for large. Of the compliance cost, small businesses spent 41 per cent on consulting fees, compared to 54 per cent for large business.

Direct funding of R&D offers a mechanism for better aligned incentives for university-industry collaboration, from small to medium enterprises to large business. Universities Australia notes the current efforts to support innovation as part of the Modern Manufacturing Strategy and supports further efforts at a diversified approach to direct R&D support mechanisms.

[29] Direct government funding and government tax support for business R&D, 2018 and 2006, OECD R&D Tax Incentive Database, http://oe.cd/rdtax, December 2020

[30] Ferris, B., Finkel, A. and Fraser, J. 2016, *Review of the R&D Tax Incentive*, p. 25.

5 INTERNATIONAL EDUCATION

Recommendation 8:

Government should fund the development of information for culturally and linguistically diverse populations to provide guidance on self-isolation requirements on arrival into Australia, access for COVID-19 testing and assist them in proving their vaccination status.

Recommendation 9:

Government should fund service providers to ensure international students are able to access physical and mental health support services.

Recommendation 10:

Government should re-establish the Endeavour Program.

Recommendation 11:

Government should review the New Colombo Plan with a view of expanding the program to include a broader range of destination countries and to provide targeted opportunities for specific cohorts of students who are currently under-represented.

The real and immediate challenges facing the sector must be acknowledged in the context of previous successes which pre-pandemic, saw the sector educate 756,636 students in Australia in 2019[31] and contributed $40.3 billion to the Australian economy during that same year.[32] The sector directly or indirectly supported almost 250,000 jobs across the nation.[33]

Universities Australia recommends that the Government consider practical ways to support students as they return to Australia and promote a positive environment for international students across all sectors. Noting that the international student cohort is comprised of students from more than 140 different countries, there is a diversity of cultural backgrounds and experience that shapes students' needs and the ways they interact with institutional, community and government services. Effective consultation with international students, including co-design of services that cater to the diversity of international students' needs, is paramount.

International students would greatly benefit from culturally relevant information and guidance in relation to proving their vaccination status (and options for boosters), their obligations with regard to self-isolation on arrival and the provision of appropriate and fair arrangements for COVID-testing. Consideration should also be given to the provision of support for those students who have suffered extreme financial and psychological hardship during COVID-19, the impact of which is likely to be ongoing for many students. Support could be extended to service providers, external to education institutions including a range of services integral to international students' physical and mental health, as well as other community services.

[31] https://internationaleducation.gov.au/research/datavisualisations/Pages/Student-number.aspx

[32] https://internationaleducation.gov.au/research/research-snapshots/Documents/RS%20Education%20export%202019.pdf

[33] https://internationaleducation.gov.au/research/research-snapshots/Documents/RS_Export%20income%20infographic%202019.pdf

Australia's international education sector should not concentrate solely on educating international students from other countries – international exposure is an increasingly important part of Australian students' learning experience. Within the university context, 19 per cent of undergraduate students undertake a student mobility opportunity, and international contact is a common feature throughout postgraduate research experiences. Universities appreciate how highly students value these experiences and should be supported to enhance their capacity to provide for their students.

The loss of the Endeavour Program had a significant impact on the sector. The program provided a valuable opportunity for students and early- and mid-career researchers to build their international networks and leadership capabilities. Reestablishment of the Endeavour Program or a similar initiative would provide significant benefits to Australia's domestic cohort and broaden the reach of Australia's education networks.

As the sector emerges from the pandemic and international travel becomes more likely it would be timely to conduct a review of the New Colombo Plan, with a view to considering the merits of expanding the program to include a broader range of countries. Consideration could also be given to providing targeted opportunities for specific cohorts of students, for example, a dedicated program for Indigenous students. This would require comprehensive consultation and planning, to ensure any such program is fit for purpose and meets the needs of the intended cohort.

6 MANAGING REGULATORY BURDEN

Recommendation 12:

Government should work - in partnership with Universities Australia - to identify and deal with regulatory overlap and to coordinate regulatory and reporting requirements more effectively in different portfolios.

Australian universities are autonomous institutions with a range of reporting and compliance obligations under both Commonwealth and state/territory legislation. Universities take their compliance responsibilities seriously and invest in staff, systems and processes to ensure their legislative obligations are met.

Universities Australia acknowledges the regulatory and fee relief provided by the Australian Government in response to the COVID-19 pandemic.

However, there has been a trend increase in recent years in the number of regulatory compliance activities required and expected of universities. This includes the introduction of the Excellence in Research for Australia (ERA) and Engagement and Impact (EI) exercises, and the introduction of the Guidelines to counter foreign interference in the Australian university sector in November 2019. While the guidelines are not a compliance document, there are nevertheless expectations about how universities respond to the advice contained in the document.

Universities Australia and the university sector is pleased to work collaboratively with Government on the range of national security issues, of which the best example is the University Foreign Interference Taskforce. The revised UFIT Guidelines, released in November 2021, are a testament to what can be achieved through effective collaboration, one which other countries in the world have sought to emulate.

Notwithstanding such successes, it remains the case that universities are facing oversight and expectations from an expanding list of Commonwealth departments and agencies. Those departments and agencies include, but are not limited to:

- Department of Education, Skills and Employment;
- Department of Home Affairs;
- Department of Defence;
- Attorney-General's Department;
- Department of Foreign Affairs and Trade;
- Department of the Prime Minister and Cabinet;
- Tertiary Education Quality Standards Agency (TEQSA); and
- Australian Research Council (ARC).

This lack of coordination is counter-productive. Whilst each Government department and agency is working from their own perspective and set of responsibilities, the combined effect on individual universities is in real danger of being counter to the aims of Government.

We completely agree with the objective of a safe and secure Australia and urge the government to be risk-proportionate and coherent in its approach to policy and regulation. A recent example of where the regulatory impact is not fully recognised is in the critical technologies space. In the

recently released ‘Blueprint for Critical Technologies’ and the corresponding ‘Action Plan’, the response framework for critical technologies lists the implementation of UFIT as low cost (in the ‘responsive support’ category). Universities Australia strongly disagrees with this assessment of the impact. Universities Australia is aware that the implementation of cybersecurity and due diligence measures have run into the many millions across the sector to date.

This is but one example of the regulatory impact on the sector. Universities Australia would be happy to work with Government to identify efficiencies and to strengthen policy coherence.