

# SUBMISSION TO THE 5 YEAR PRODUCTIVITY INQUIRY INTERIM REPORTS 2022

November 2022

Universities Australia (UA) welcomes the opportunity to make a submission to the Productivity Commission (PC) interim report series. Our comments relate to the 5-year productivity inquiry reports: 'The key to prosperity'; 'From learning to growth'; 'Innovation for the 98%'; and 'A more productive labour market'. This submission supplements UA's input into the initial call for submissions in March 2022 by the PC into productivity.

Universities Australia is the peak body for Australia's 39 comprehensive universities. Our members are spread across Australia, in regional and metropolitan areas. They educate more than a 1.5 million students each year and undertake research that adds to Australia's stock of knowledge, and to Australia's economic and social wellbeing.

As noted in UA's earlier submission to the PC, universities' main productivity contribution is through teaching and research. Universities teach the workforce of the future, prepare young Australians for their careers and deepen the skills of the existing workforce. By training skilled graduates, universities power businesses to innovate and thrive.

University researchers make the discoveries that enhance businesses productivity and sharpen the competitive edge. Universities lay the groundwork for brand new industries and technologies such as quantum computing.

By partnering with firms, university researchers develop new products and better ways of doing things.

Universities are engaged in their communities, well beyond their roles in teaching and research. Universities are often a big employer and main economic driver in their regional and urban communities. Universities' actions and responsiveness in recent crises including bushfires, floods and a global pandemic are powerful reminders of universities' integration into their communities, and of what they can contribute.

Graduate skills, research and innovation and a wide range of activities to support the community have always been fundamental to Australian universities. These contributions now have a bigger impact, and the nation's need for them is greater than ever before.

UA notes the questions raised by the PC covering a broad range of issues, including institutional funding, teaching models and research. UA will address these and more through the University Accord process in 2023.

## KEY POINTS

- As the Productivity Commission reports note, a skilled and educated workforce is a key driver of productivity. The recent Jobs and Skills Summit highlighted the challenges faced in ensuring that Australia has the right skills base now and for the future.
- Australian universities have a vital role to play in addressing the nation's skill shortages, ensuring businesses – big and small – have the workforce they need to fuel our economy.
- The disconnect, identified by the PC, between a more educated population and low national productivity is complex, including regional differences in education delivery and attainment.
- Australian universities are productive in both their research and education functions.
- The declining R&D intensity of the Australian business sector in a world of rising R&D intensity, coupled with the management capability issues raised in the reports point to challenges in the business sector.
- A better understanding of the policy drivers and potential for the incentivisation of industry investment in R&D needs to be a priority if Australia is to realise further productivity and economic gains from research investment.
- UA notes the difficulties raised in the report regarding the measurements of productivity in the non-market sector. UA would be pleased to work with the PC on exploring novel methods of productivity measurement in the university sector and further work to understand the linkages between national productivity and university productivity.

### ***Productivity in education***

The PC states that an increasingly educated population is not positively impacting on Australia's productivity. UA respectfully disagrees with this conclusion, based on our own work and the work of others in the sector.

Further work is required to understand the nature of this correlation and causative effects. Further, some productivity benefits may elude capture in the standard metrics. There are benefits beyond the frame of productivity that arise from an increase in university educational participation and attainment.

The quality of education in Australian universities is high and internationally competitive. According to the Student Experience Survey (SES) 2021 report, prior to 2020, the undergraduate student rating of the quality of their overall education experience varied within a narrow band of 78 per cent and 80 per cent.

Despite a dip to 69 per cent in 2020 (the first year of the pandemic), in 2021, 73 per cent of undergraduate survey respondents gave a positive rating of their overall education experience at universities. This was probably attributable to universities' ability to quickly adapt their delivery of courses amidst various pandemic-induced restrictions and lockdowns.

Teaching quality and skills development have been areas that have received a relatively high percentage of positive ratings from student survey respondents. In terms of teaching quality, 79 per cent and 80 per cent of undergraduate and postgraduate coursework students provided positive survey responses in 2021. Similarly, 79 per cent of undergraduate and postgraduate coursework students provided positive survey ratings of skills development received at universities.

The Government's *Employer Satisfaction Survey* consistently shows that employers are very satisfied with the new graduates that they employ. Employers employ graduates – and pay them a premium – because of the value they add to business. This is a clear-eyed and rational business decision.

Australian employers have continued to express their satisfaction with the skills of university graduates and their ability to make an immediate impact in the workplace. The *2021 Employer Satisfaction Survey* – which reported the views of 3,450 direct supervisors of recent graduates – found that 85.3 per cent of employers expressed overall satisfaction with their recent graduates in 2020, the highest satisfaction since the survey began in 2016. In 2021, more than nine-in-ten supervisors (92.1 per cent) indicated that the graduate's qualification prepared the graduate "very well" or "well" for their current employment.

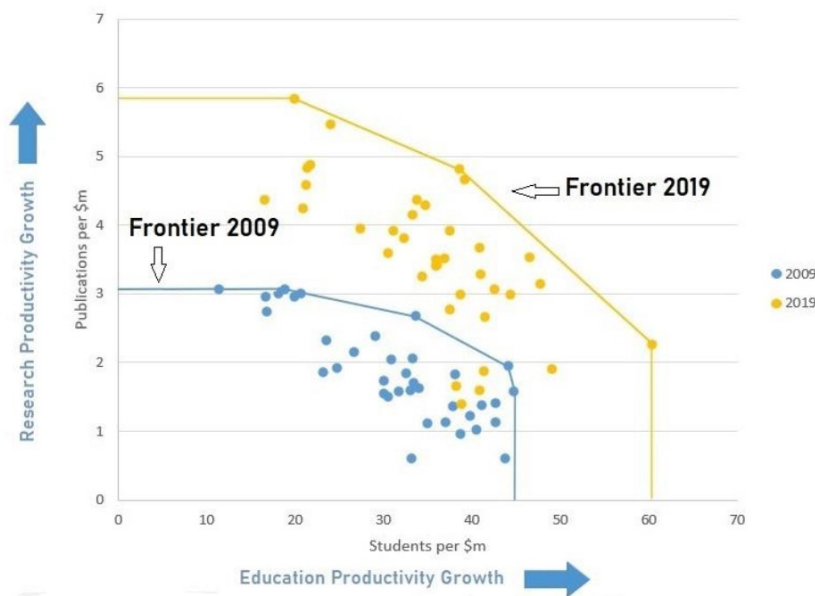
Compared internationally, [Universitas 21](#) ranked Australia HE system 9<sup>th</sup> among 50 countries in 2020, and Australia boasted 26 universities in the Top 500 of the [QS World University Rankings 2022](#).

**Measurement of productivity in universities**

Significant conceptual challenges remain in the measurement of productivity in education, and universities specifically. The Higher Education Research Group (HERG) has made detailed efforts in this in the Australian context using what they term their Research and Education Efficiency Frontier (REEF) methodology.<sup>1</sup>

Based on this measure, they show that the university sector has significantly increased its productivity between 2009 and 2019 (Chart 1) in both research and education. They note that between 2009 and 2019, all 37 universities examined improved in either or both education and research productivity, achieving an annual 3.4 per cent productivity improvement.

**Chart 1: Australian University Productivity REEF Methodology based on Expenditure 2009 and 2019**



Source: HERG (2020), Productivity growth in Australia’s universities: 2009 to 2019.

Results such as these, as well as the case studies in the health sector noted above, appear to go against the causal assumption in the report and therefore poses a research question worthy of further investigation by the PC. It is worth noting that the failure to detect or measure capture productivity benefits (and other benefits, for that matter) does not mean those benefits do not exist; indeed, that failure tells us more about the instrument than it does about the target of measurement.

**The cause and effect pathways from where a student graduates to national productivity figures is complex and relies to a great extent on the action of other economic factors and actors, perhaps most importantly the business sector.**

Some of the challenges have been articulated in the interim reports, as well as in UA’s submissions and include what may be termed as an uncompetitive rate of R&D intensity, coupled with management capability that requires improvement.

<sup>1</sup> HERG (2020), Productivity growth in Australia’s universities: 2009 to 2019.

Notwithstanding this, universities continue to innovate in both teaching and research, which can be expected to deliver further benefits to national prosperity. The national research and innovation system works best when a vibrant private sector research system has strong connections to the university research system. Government policy and universities continue to focus on the formation of productive linkages between universities and industry.

### ***Changes in the research profile of Australian universities***

As noted in our previous submission to the PC, Australian universities undertake research from basic to applied research and experimental development.

In Australia, universities perform the bulk of basic research – 87 per cent of ‘pure basic’ and 44 per cent of ‘strategic basic’ research. Perhaps unexpectedly, in light of the unfavourable business R&D expenditure outlined above, universities also undertake the majority of applied research, performing 45 per cent, relative to industry at 39 per cent. It is only at the experimental development stage where business dominates, undertaking 84 per cent.

The research profile of the Australian higher education sector has altered significantly, shifting from a profile of undertaking basic research in the majority to applied research. In 1992, 40 per cent of university research was classified as ‘pure basic’, and when combined with strategic basic it accounted for 64 per cent of Higher Education Research and Development Expenditure (HERD). This had reduced to 19 per cent pure basic research by 2020, giving a combined basic research effort of 37 per cent.

A key dimension on these investments in research is the increase of the absorptive capacity of the Australian economy through the increase in human capital. This has important flow on effects (as outlined by the PC) in the ability of the Australian economy to innovate and raise its productivity.

### ***The global research environment***

Over the last three decades, global R&D investment has risen three-fold from \$US 662 billion in 1992 to \$US 2.07 trillion in 2020.<sup>2</sup> The two major R&D performers were the US and EU, accounting for 39 per cent and 31 per cent of R&D expenditure respectively.

In addition to real expenditure on R&D rising, there is also a clear trend that the knowledge intensity of the world economy is increasing.

The OECD’s expenditure on R&D has been growing steadily, sitting at 2.68 per cent of GDP in 2020, from 2.25 per cent in 2010. The main driver of this growth in R&D spending has been business (BERD).

OECD businesses have significantly raised their research expenditure over the last 10 years from 1.49 per cent of GDP to 1.92 per cent. This amounts to an additional \$US 350 billion in real terms every year.

Unfortunately, Australian businesses have done the opposite, with R&D expenditure falling from 1.27 per cent in 2010 to 0.92 per cent in 2019 (latest) or a reduction in real expenditure of \$3.17 billion (AUD, 2020 dollars).

When the businesses of our competitors spend twice as much on R&D than we do as a share of the economy, then we need to reflect.

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<sup>2</sup> R&D expenditure is measured in USD constant prices using a 2015 base year and Purchasing Power Parities (PPPs). Global R&D expenditure here is approximated by the expenditures of the OECD and non-OECD economies reported by the Main Science and Technology Indicators (OECD) database. These are: China, Russia, Argentina, Romania, Singapore, South Africa, Chinese Taipei.

The Treasury has highlighted a slowdown in productivity due to underperformance by the business sector.<sup>3</sup> Moreover, in his recent speech, the Assistant Treasurer, the Hon Andrew Leigh MP noted the negative effects of industry concentration on productivity.<sup>4</sup>

The standout investor of Australian R&D is the higher education sector, performing as a share of GDP consistently higher than the OECD average at 0.64 per cent (2019) compared to 0.44 for the OECD average.

This level of investment correlates with relative comparisons of both the volume and quality of the research output of universities. In 2020, Australia’s share of the top 1 per cent highly cited publications was 7.94 per cent compared to 3.65 per cent for the OECD average.

***New models of education delivery to enhance productivity***

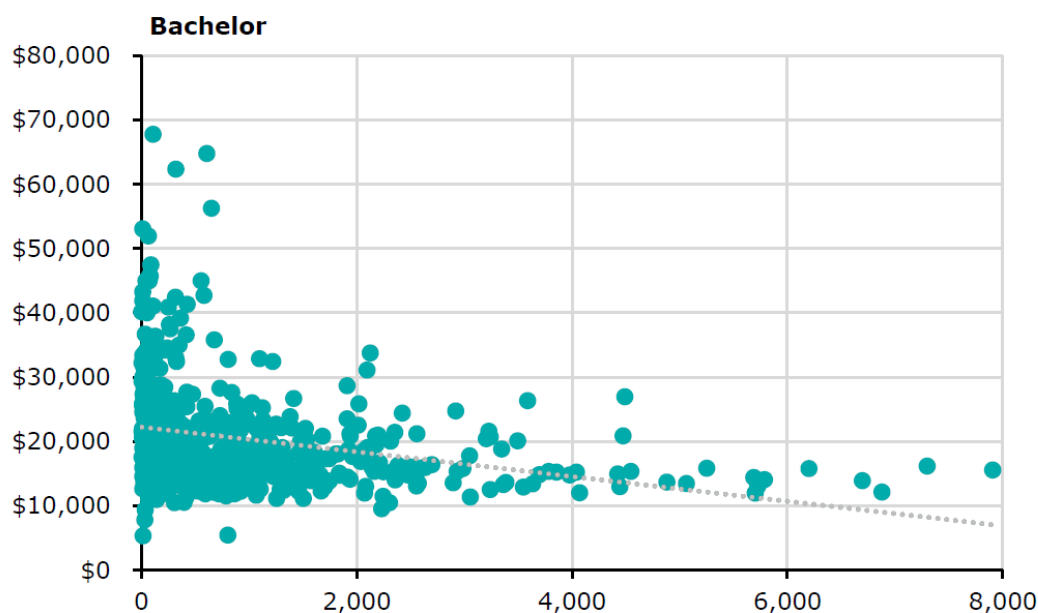
In relation to new models of education delivery, universities are working on developing and delivering microcredentials; and are continuously improving online delivery.

In relation to efficiency of teaching, a recent work is the Transparency in Higher Education Expenditure report also identified by the PC.

According to the report, the aggregate cost of teaching grew by 5 per cent (nominal) in 2017. Nearly four-fifths of this growth was driven by growth in the number of full-time equivalent students (‘EFTSL’). Only one fifth was due to growth in unit costs.

The report on the first cost of delivery exercise (in 2016) included a detailed econometric analysis of cost drivers. This analysis found that scale was a key cost driver. More recent data (2019) shows that at the Bachelor level, units enrolling more than 100 students recorded a teaching cost per student that was four per cent lower than the average for all Bachelor units. Coursework postgraduate units recorded similar results.

**Correlation between scale (EFTSL) and unit costs**



Source: Deloitte (2019), Transparency in Higher Education Expenditure, DESE, Canberra; p.54

<sup>3</sup> Reaching for the stars: Australian firms and the global productivity frontier (2022). Dan Andrews et al, Treasury [working paper](#).

<sup>4</sup> The Australian, 26 August 2022, The Hon Andrew Leigh MP, Opinion piece: A productivity turnaround requires a more dynamic, competitive economy.

Analysis of university expenditure data over time shows that the productivity of teaching has improved over time (and the productivity of research even more so).

### **Measuring productivity in education in a health setting**

Universities provide Australia with most of its new-entry health professional workforce across allied health, dentistry, medicine, midwifery, nursing and pharmacy. In order for new graduates to enter the workforce, they must have completed clinical placement.

When the COVID-19 pandemic hit, universities quickly mobilised to put courses online. While universities' ability to transition to online delivery was notable, health profession education was especially challenged with disruption to clinical placements and other crucial face-to-face learning.

The pandemic disrupted clinical placements and other face-to-face clinical learning, such as laboratories, leading to placement backlogs and essentially causing delayed entry of new graduates to an undersupplied health workforce.

Below are case studies on how universities responded to these challenges with virtual alternatives as part of health care students' clinical placement, and how lessons learnt can better prepare Australia in the future.

#### **Case Study 1: Josephine\*, second-year social work student**

Josephine was on placement in a mental health unit when the pandemic hit. Her placements were disrupted due to COVID restrictions and her ability to support people both through her placements and then graduate as a social worker were being delayed.

Josephine quickly realised that her role and the way she provided support to clients would have to change. She would have to move to telehealth consultations. At first this was very challenging. Josephine had been used to getting a complete picture of her clients through face-to-face appointments – but over the phone, all of the visual communication cues were removed. However, through support from the university and the health service, she learned to work differently and hone new skills. Josephine found that she could actually support **more** clients through this new approach as many clients preferred the phone sessions. They could access them more easily and were more likely to attend. Despite the uncertainty that came with the pandemic, Josephine's university education and support helped her to adapt quickly to this situation and she was able to continue to help clients while gaining new knowledge and skills.

#### **Case Study 2: Baenita\*, speech pathology student from Singapore**

When the pandemic struck, Baenita, like so many other international students, returned to Singapore to be with her family. Fortunately, Baenita was able to complete a full telehealth speech pathology placement based in rural Australia, online from her home in Singapore. While Baenita would have preferred a face-to-face placement, she believes the skills learned in an online placement have set her up to succeed in a modern-day workplace. Concurrently, she delivered a critical service in an area with limited options to received speech pathology.

By August 2020, Baenita had already completed her placement. She had been so successful and proven herself to be an exemplary professional, her employer offered Baenita a role working over telehealth from Singapore. By November 2020, Baenita was still in Singapore, but with her employers and university's help, she decided to apply for an exemption to enter Australia. The exemption to travel to Australia was approved due to being a healthcare worker.

Baenita has settled into her community well and is filling a critical role to her community.

\*Names have been changed.



These case studies demonstrate how Australia's universities have expanded online learning options, with new types of virtual clinical placement, enabling our future healthcare workforce to be trained and our and to provide critical health services to Australia, all within managed budgets.

### ***Occupational licensing in Health – productivity improvements***

#### **Automatic Mutual Recognition (AMR)**

AMR can - and has – supported more efficient movement of health workforce within Australia. The establishment of national registration for a number of Australian health professions was enabled through establishment of the National Registration and Accreditation Scheme (NRAS) and the Australian Health Practitioner Regulation Agency (AHPRA). National registration has supported greater mobility across jurisdictions in Australia of the 15 health professions regulated under NRAS.

One approach to support greater health workforce mobility could be to extend NRAS to the remaining self-regulated health professions. Including all health professions under NRAS was the original recommendation of the Productivity Commission's 2005 Australia's Health Workforce Report which led to establishment of NRAS and AHPRA.

#### **Licensing and scopes of practice relevant to health professionals:**

In Australia, health practitioner registration is linked to a specific scope of practice. Options to broaden scopes of practice for different health professionals could potentially contribute to enhanced service delivery, especially in areas that are often underserved (e.g. rural/regional communities, certain service settings). Some models already exist (e.g. Remote Area Nurses and rural generalists in medicine and allied health). The former Health Workforce Australia (HWA) also looked at broadening scopes of practice to maximise health workforce. This is an area that could be further explored. However, it would need to be done in close consultation with the professions, accreditors, health services regulators and education providers to ensure required quality and safety parameters were met.

#### **Application of mutual recognition of licenses to overseas trained workers:**

Some mutual recognition of qualifications occurs for overseas health practitioners. However, disease burdens and population demographics vary by country, and even by region within the same country. Health practice is substantially influenced by these factors, as well as by cultural, environmental and societal considerations. Understanding the patient in their social, cultural and environmental context is an important part of health history taking, diagnosis and treatment.

Even where qualifications are aligned, there is room for short bridging courses to support overseas trained health workers become familiar with practice, culture and systems in Australia.

#### ***Equity***

One of the more remarkable social policy achievements by Governments has been the expansion of the number of university places. This has resulted in a greater share of the population undertaking a university education.

These gains have also been experienced to some extent by equity groups. According to the Department of Education, between 2006 and 2020, the number of Indigenous undergraduate students surged from 6,604 to 16,559, a 150% increase.

During the same period, the number of domestic students of disadvantaged background pursuing undergraduate studies increased by 73%, from 85,379 to 147,802. Aside from gains in absolute terms, between 2006 and 2020, the percentage of Indigenous undergraduate students increased from 1.2% to 2.0%. During the same period, the percentage of domestic undergraduate students of disadvantaged background increased from 16.0% to 18.0%.

## CONCLUSION

UA supports the Productivity Commission's comprehensive approach to investigating raising the rate of productivity and thereby national prosperity.

Through metrics and case studies, UA has sought to illustrate what productivity means in the context of the university sector. Australian universities display high levels of productivity in both their teaching and research functions.

The disconnect between the levels of education in the population and national productivity reported by the PC suggest that there are a broad set of factors that contribute to this result, including challenges identified in the business sector. UA's experience leads us to suspect that more sensitive means of determining the productivity effects of higher education will reveal real underlying productivity improvements attributable to increased university participation and attainment.

UA would be pleased to work with the PC on exploring novel methods of productivity measurement in the university sector and further work to understand the linkages between national productivity and university productivity.