GROUP OF EIGHT AUSTRALIA

RESEARCH EXCELLENCE TO SHAPE AUSTRALIA'S FUTURE

INTRODUCTION

The latest economic data shows Australia's productivity is going backwards, yet in an effort to understand why and what to do about it, we have so far overlooked the need for a *National Research Strategy.*

This is essential if Australia is to secure its economic future through increased productivity and prosperity. Indeed, if the Australian Government abandons any target, hard or soft, to get Australia's research and development (R&D) investment to 3 per cent of GDP, our long-term prosperity is at risk.

This is because productivity growth is the only way to achieve long-term improvement in living standards, including having the capacity to manage our pressing social and environmental challenges. A vibrant and successful research ecosystem enables improved human 'know-how' and innovation that, in turn, leads to new products, processes, and markets. Productivity therefore is underpinned by R&D.

Many innovations come from our R&D, broadly defined as investment in new knowledge to improve products and production processes. There are different forms of R&D, from basic (sometimes called 'fundamental' or 'blue sky') to applied research. All add to the stock of human knowledge that drives productivity and delivers improved living standards. This breadth of R&D also tackles existing and new challenges, be they health, environmental or social.

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THE EVIDENCE IS BEFORE US

Evidence suggests that the positive economy-wide innovation and productivity benefits of research in Australia, while difficult to measure, are significant.

Recent estimates from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) on the societal returns to national R&D investment indicate a benefit-cost ratio of 3.5. But this does not mean that all research achieves societal benefits – it depends as much on the quality of the research and expertise of the researchers and intellectual capital of the institutions, as the quantity of research.

THE SCALE AND QUALITY OF RESEARCH MATTERS

Research is conducted across our whole research ecosystem and there are pockets of strength even in our smaller institutions. However, both quality and scale in research matters – it's what drives innovation and impact and underpins productivity growth.

In Australia, the bulk of university-based research funding from industry and other non-government sources – some 70 percent – flows to our research-intensive Go8 universities. In these institutions, you have both quality and scale of research effort. This is what ensures a greater likelihood of societal returns from research – in terms of the net economic, social, and environmental benefits that are delivered. Analysis by London Economics (2022) finds that for every $1 billion invested in Go8 university research, an estimated additional in-year economic output of $9.2 billion is generated across the rest of the Australian economy.[1]

Given Australia's relatively small global population and size, large research-intensive universities are critical. They have the capacity to attract, employ and train world-leading researchers to expand the frontiers of human knowledge and capability across a wide range of diverse fields, such as biomedical and clinical sciences, IT, and computing capability, among others. World-leading research should be the expectation that Australian taxpayers have with respect to Australia's leading universities. The value and importance of research is ultimately judged globally. In the same way that Australian goods and services have had to become globally competitive on world markets, so must Australia's university research be competitive on the global stage. To achieve this, both scale and quality of research efforts are critical.

But it goes further than this.

High quality research is the precursor of successful translation, innovation and commercialisation. However, it's the scale and focus that brings with it the capacity to work across the entire innovation pipeline; to attract the partners and investors essential to bring research outcomes to market; and to drive economic benefit and productivity for national benefit. It's the large research-intensive universities that act as anchor tenants of innovation precincts that are so essential to diversification of our economy and the development of our advanced manufacturing capabilities.

In addition to underpinning our prosperity, being global leaders in research creates a virtuous circle – it means other smart people, institutions and industry partners across the world are willing to partner with Australia to create new knowledge and solve global problems. In other words, there are positive spillovers for Australia. This in turn, drives the productivity multiplier delivered through high quality R&D.

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1 London Economics. (2022). The economic impact of research and innovation: Group of Eight universities. Forthcoming.

RESEARCH METRICS TELL THE STORY

The good news is that Australian university research is world class in quality and influence but this position won't be retained without the presence of large research-intensive universities that can deliver both quality and scale in their research efforts.

A number of indicators underpin the good news conclusion, including: independent global rankings of university research quality and influence; the fact that high potential international students overwhelmingly seek our research-intensive Go8 universities when deciding to study in Australia; and the extent of collaboration – by Go8 researchers with world-leading researchers both internationally and domestically – thereby lifting the quality and standards of research across Australia. For example:

- The world is telling Australia that all eight of the Go8 members are the top Australian universities and are in the top tier internationally with all appearing in the top 100 in the world – with six in the top 50. The Go8 members are followed by a strong Australian cohort of seven other universities in the top 200.
- The Go8 have a top 10 per cent publication citation rate of 15.4 per cent (that is, the number of publications in the top 10 percent globally as a per cent of all Go8 publications). This compares to non Go8 universities of 14.9 per cent.
- The Go8 collaborate internationally with the world's best researchers with 56% of Go8 publications having an international collaborator.
- Go8 members also collaborate widely within Australia – bringing the benefits of these international research collaborations to the whole Australian system – with over 82,000 publications in the period 2018–2022 involving a Go8 member and another Australian university not in the Go8.
- Go8 universities attract 38 per cent of all international students at Australian universities.
- The Go8 spends over one-fifth of total research expenditure in Australia, from all sources.
- Go8 graduate almost half of all PhDs in Australia – these are the people specifically trained to contribute to further research that underpins knowledge and innovation for Australia.

So, if this is the good news, what is the bad news? The bad news is that we could do even better as a nation if we had a clear national strategy going forward, that addressed the obstacles to our research-intensive universities contributing even more and helping solve our current productivity problems. The world does not stand still, nor do the frontiers of knowledge creation and dissemination – in fact challenges such as climate change need nations such as Australia to be at the forefront of knowledge. Leaders in global research should be given every opportunity to respond to enhance Australia's prosperity.

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CONCLUSION

The Go8 has outlined bold ideas in its submission to the *Universities Accord* to address these obstacles. We need amongst other ideas, greater diversity of mission, scale and focus among universities delivering research and full economic cost support for government research grants. By addressing the obstacles for research intensive universities, Australia wins big time. We can recognise these leaders and further champion world excellence we have with the Go8 universities without hindering any Australian institution aspiring to and achieving globally recognised research.