

# IRU discussion paper – March 2023

# Major trends in university research income and expenditure

## **Executive summary**

- Over the last twenty years, research income and expenditure in Australian universities has grown. Australian universities are productive and efficient, producing high-quality research with high international rankings and high levels of international collaboration.
- Growth in total Australian expenditure on research and development (R&D) has largely been driven by the higher education sector in recent years, with government and business investment flat.
- As a percentage of GDP, total Australian investment in R&D is declining. Australia's share of global R&D is also declining in 2019, it was down to 1.1% of the total investment by OECD economies plus China.
- Overall growth in university research masks significant shifts in the balance of investment across different kinds of research and different universities.
  - Applied research has grown much faster over the last twenty years than basic research, with applied research and experimental development now making up the majority of university research. Recent government priorities have also directed significant new funding to university-industry collaboration and commercialisation.
  - Investment in STEM (science, technology, engineering and maths) disciplines is much larger than HASS (humanities, arts and social sciences) disciplines.
  - Growth has increasingly been financed from university funds (including international education revenue) and most of the growth has occurred in a small number of universities.
- Public funding for research in Australian universities has long operated under a "dual funding system", with universities receiving a research block grant in addition to funding through competitive grant programs. The purpose of block funding is to support the costs of research not covered by grants and to allow universities to invest in other kinds of research activity essential to their mission as public institutions. This includes the building of long-term capability and infrastructure, investment in fundamental/theoretical work, investment in research careers and collaboration with local communities which does not generate an immediate financial return.
- Over the last twenty years, the ratio of block grant funding to total research income has been cut in half, and is expected to decline further as new programs such as the Medical Research Future Fund (MRFF) expand. This has a major impact on the kinds of research that can be undertaken and which universities can afford to do what.

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#### 1. Total Australian R&D expenditure (GERD) by sector.



#### 2. GERD as a percentage of GDP.





## 3. Australian spending on R&D in international context.

4. Total research expenditure by universities (HERD) by type of activity.



The proportion of higher education research and development (HERD) expenditure directed towards applied research or experimental development increased from less than 40% in the early 1990s, to half of all HERD by the mid-2000s and 58% by the mid 2010s. In 2020, the most recent year for sectoral data, it was 63% of HERD. This transformational shift away from basic research has been sector-wide, but particularly prominent in regional and outer metropolitan universities.



5. Total HERD by discipline area. (STEM is the science, technology, engineering and maths fields. HASS is the humanities, arts and social sciences.)



#### 6. Total HERD by university group (Go8/ATN/IRU/RUN/non-aligned unis).







#### 7. HERD by source of funding.

8. Breakdown of Cat.1/Cat.2/Cat.3/Cat.4 research income to all Australian universities.



Note: Category 1 funding is Australian competitive grant funding (eg. from the ARC, NHMRC and MRFF). Category 2 funding is from other Australian public sector sources (Commonwealth and State governments). Category 3 is income from private sector, philanthropic and international funding sources. Category 4 is income from participation in Cooperative Research Centres (CRCs).





# 9. Research Block Grant (RBG) funding and Cat.1 research income to all universities.

The RBG is part of a long-standing "dual funding system" of public funding for research. Researchers compete for public competitive grants tied to specific projects, and universities receive flexible base research funding through the RBG to support systemic costs of research not directly funded through other means. Competitive grants do not cover the full cost of research, such as overheads for libraries, laboratories, buildings and infrastructure, and the salaries of support and technical staff. In addition, competitive grants do not cover full project costs. For example, in 2021 the ARC provided only 87% of the funds requested for approved Linkage Projects and 71% of funds requested for Discovery projects, a collective shortfall of around \$110 million. The shortfall for approved competitive grants must be covered through RBG and other indirect funding sources, such as student fees, consultancies and contract research.

Public competitive grant income is also now more often targeted towards industry collaboration and application-oriented research, such as through ARC Linkage and the MRFF. The MRFF, an ongoing research fund set up by the Australian Government in 2015, has only recently reached its \$20B capital goal with an annual disbursement of around \$650M to support research. The full effects on RBG are yet to be realised. The lagged impact of research income as an RBG input (research income from two years prior are used as inputs) means that only \$111M of MRFF income in 2019 and \$224M in MRFF research income in 2020 were inputs to the 2022 RBG. The MRFF is an important new part of the research funding system, but because the MRFF does not cover the full costs of research, once it reaches its full scale it will further stretch the capacity of the RBG to support the research system.





## 10. Research Block Grant (RBG) funding and total research income to all universities.

# About the IRU

The IRU comprises seven public research-intensive universities across Australia. The group celebrates its 20<sup>th</sup> anniversary in 2023.

The history of our member universities goes back to the late 1960s and early 1970s when, under both Liberal and Labor governments, there was an expansion of new forms of higher education and research to meet the needs of the nation. As capital cities and regional centres grew, new universities and Colleges of Advanced Education were established to open up opportunities for under-served communities.

From their founding, IRU members pioneered new forms of inter-disciplinary teaching and research, for example in environmental and Asian studies. Today, our members are multi-campus universities with a continued commitment to sustainability. Our shared focus is inclusive education and innovative research that delivers impact for our communities.

The IRU is committed to constructive and evidence-based policy engagement and provides the ideal test-bed across the country for trialling new approaches.