

Appendix 9. Translating Research for Economic and Social Benefit: Country Comparisons

Introduction

Innovation in Australia is suffering from a lack of a national innovation strategy, short-termism, inadequate scale and a fragmented approach. We need to urgently improve the application of publicly funded research, in order to generate economic and other benefits.

The interdisciplinary report by the Australian Council of Learned Academies (ACOLA), SAF09 *Translating Research for Economic and Social Benefit: Country Comparisons* (<http://acola.org.au/wp/saf09/>) analyses international approaches to encouraging and facilitating research translation, commercialisation and collaboration. The report draws on consultant reports and the authors' expertise in government, science and innovation.

The 14 nations studied were Finland, Denmark, Sweden, Germany, United Kingdom, Israel, United States, Canada, South Korea, Japan, Singapore, China, Brazil and Chile. There is a clear link between national policy on innovation and innovation performance. Nations that do better than Australia in innovation are characterised by rigorous policy setting and programs that encourage a culture of innovation and collaboration.

Learning from overseas

One of the challenges for Australian public sector researchers is finding an industry partner with which to engage. We have relatively few firms that do research and development. Australian researchers are not well engaged with industry or with other parties.

Australia's higher education research spending is above the OECD average. Australian public sector expenditure on research and development is also strong. Public sector research is a major part of Australia's research system. Accountability to the public makes it particularly important that we encourage and accelerate the translation of public sector research into economic and social benefits.

Recognising the importance of the flow of knowledge to application, many countries have developed a range of mechanisms to bring together researchers and potential users.

Governments have a vital role in adopting policies that can support and drive innovation, and to reflect emerging challenges and priorities. Governments must ensure public investment in science and research, and encourage and support innovation within the private sector.

As well as funding research, the countries reviewed offer policies and programs to encourage and enhance the application of research. These include funding for start-ups, university-based incubators and technology parks, training for managers of intellectual property, and mentoring for university student and faculty entrepreneurs.

Furthermore, such funding, policies and programs can provide assistance to researchers for collaboration, assistance to businesses, exchange and placement of researchers, technology transfer support and intellectual property support.

The countries reviewed have each adopted a suite of measures to encourage the translation of public sector research to benefit the broader community.

Recipes for success

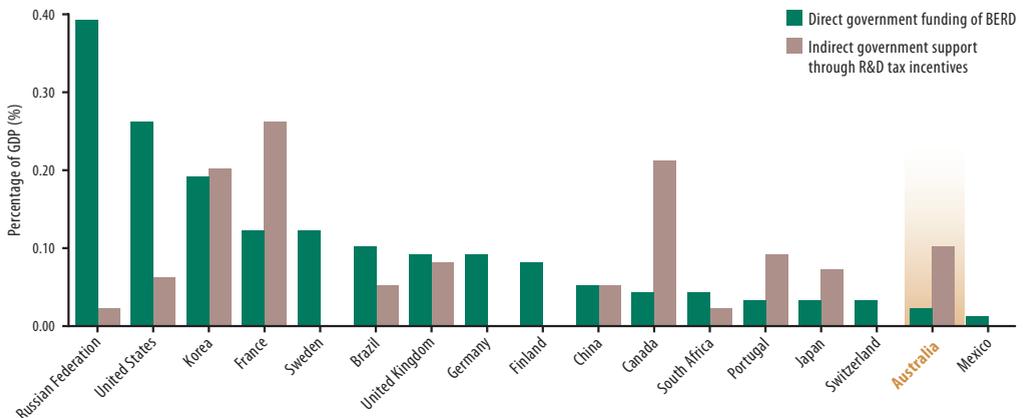
Australia's efforts to support the translation of public sector research have been minimal. In many cases, there has been inadequate reporting of program results and minimal evaluation of achievement.

There are several overseas examples where stable, well-designed and well-funded measures have created jobs, increased business turnover and provided other benefits.

Supporting small and medium-sized enterprises and start-ups that have high growth potential will help to increase the translation of Australian public sector research. Such enterprises with high growth potential are an important source of future jobs and economic growth and are the target for many of the overseas government measures reviewed.

Start-ups help commercialise public sector research. Government support should be available to help start-ups, subject to the start-ups having essential prerequisites, such as intellectual property and business strategies, and researchers willing to continue the development process.

Firms that undertake research and development are more likely to become involved in the translation of public sector research. Australia is overly reliant on indirect support for business research and development through the research and development tax incentive. The incentive could be adjusted to encourage collaboration with public sector researchers.



Direct government investment in business research and development (R&D) and tax incentives for R&D. (BERD: business expenditure on research and development) (Source: Adapted from OECD (2013) *OECD Science, Technology and Industry Scoreboard 2013*. OECD Publishing, Paris, France). DOI: <dx.doi.org/10.1787/sti_scoreboard-2013-graph97-en>

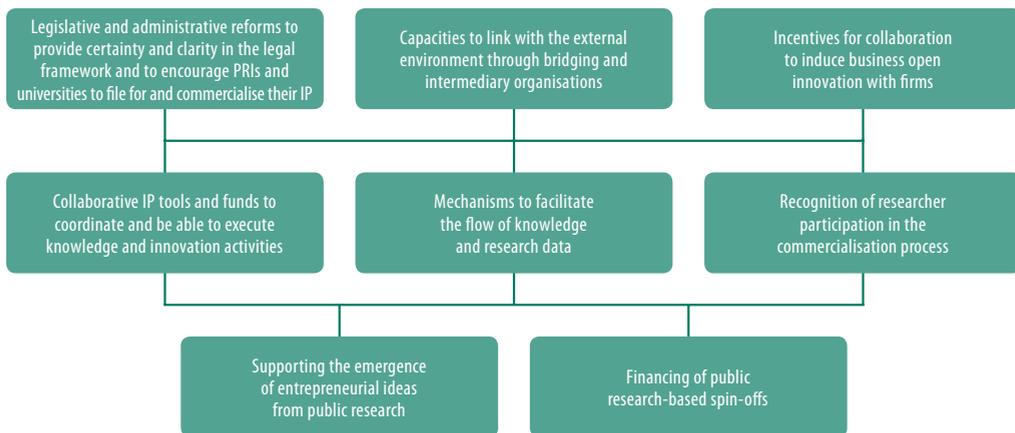
Shifting the balance of government support for business innovation to greater use of direct measures such as grants, loans and procurement contracts would allow a more focused and targeted approach to support research collaboration and translation.

We need to reform research collaboration programs, such as Australian Research Council's Linkage Program, by increasing funding and adopting the leading grant administration practices of the overseas programs reviewed.

Measures that require a joint proposal from public sector researchers and external partners (often business) work well. Australia's Cooperative Research Centres Programme is a good example of this approach.

Programs that support the placement of students and new graduates within external organisations will help to transfer new creative and technical skills to business, government and not-for-profit sectors. Work-integrated learning placements can also help build relations between universities and external parties that can lead to future collaborations.

The engagement of researchers from humanities, arts and social science disciplines has opportunities and challenges that are different from those of the science, technology, engineering and maths disciplines. For these reasons, some countries have adopted specific measures to encourage such engagement and collaboration. It is important to ensure that humanities, arts and social science researchers are not excluded from measures to encourage public sector researcher engagement with external parties.



Strategies for enhancing the transfer and commercialisation of public sector research. (PRI: public research institutions; IP: intellectual property) (Source: OECD (2013) *Commercialising Public Research: New Trends and Strategies*. OECD Publishing, Paris)

Conclusion

Australia would gain from a coherent national innovation strategy with an agency to manage it, and less reliance on indirect support for business such as through the research and development tax incentive. Most leading practice countries have well-resourced and coordinated innovation strategies, which guide the selection of policy and program options.

Other important steps to lift research application and business-researcher collaboration include:

1. increasing assistance for collaborative research;
2. providing targeted incentives to universities to increase their engagement with external agencies;
3. employing commercial managers to help researchers engage with commercial partners from the early stages of projects;
4. implementing measures to support the financing of commercial outcomes from public sector research; and
5. commissioning independent reviews and evaluations of research translation measures to ensure that they are achieving their objectives.

Expert Working Group Members

Dr John Bell FTSE (Chair)

Professor Mark Dodgson FASSA

Professor Les Field AM FAA

Professor Paul Gough

Professor Tom Spurling AM FTSE

Professor Beth Webster