Group of Eight

Submission to Inquiry into Business Commitment to R&D in Australia

House of Representatives Standing Committee on Science and Innovation

30 August 2002

1 Introduction

The Group of Eight supports the need for initiatives that will stimulate research and development (R&D) in Australia's business sector. We are very pleased that this matter is being investigated by the Committee and would be happy to provide additional or supporting documentation should that be helpful. We believe that a strong commitment to R&D in the private and public sectors in Australia is an essential element if we are to establish a vibrant culture of innovation. This is fundamental to our international competitiveness in the global economy of knowledge – a point we have made strongly in our recent publication *Innovation: Universities Leading Australia* (copies attached).

Sadly, private sector investment in R&D is well below the OECD average. Without a strong R&D performance in the private sector, the commercial opportunities flowing from university research can be lost

The Minister for Education, Science and Training, the Hon Dr Brendan Nelson MP is conducting a review of higher education and, in our submission to that review, the Group of Eight made a number of recommendations on the issue of R&D performance in the private sector. These recommendations are reiterated in our submission to this inquiry.

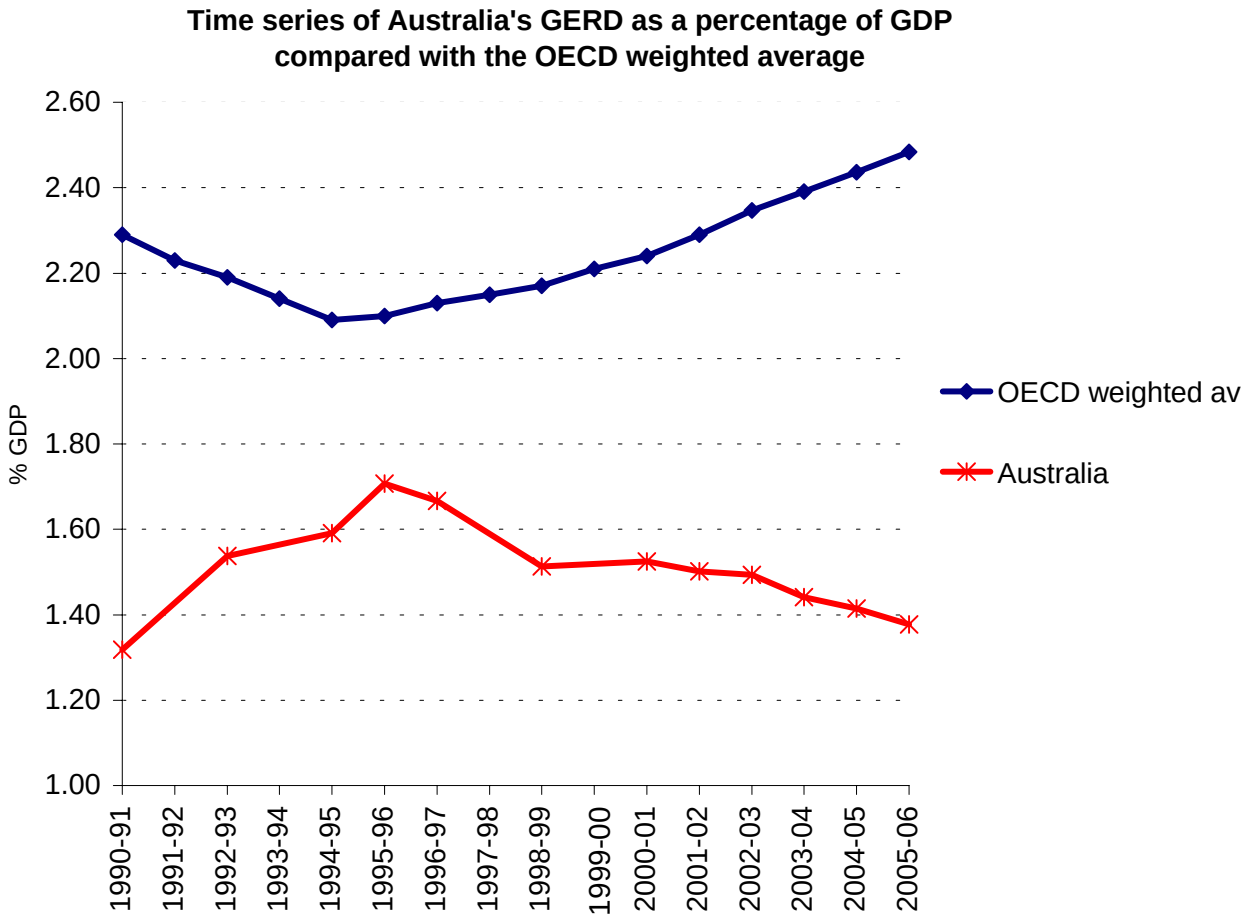
2 A snapshot of Australia's R&D performance

In December 2000 the Group of Eight published a report entitled *Research and Innovation: Universities Leading Australia*, which gave an overview of Australia's R&D performance.[1] We have recently updated the figures published in that report, based on the latest available data, and made projections of Australia's likely performance to 2005-06.

Australia's R&D performance continues to fall well below the OECD average (Figure 1). Australia now falls behind North American, Scandinavian and most Western European countries. In our own region, it also falls behind Japan, South Korea, Taiwan and Singapore. This is exacerbated by the fact that Australia continues to perform strongly in GDP growth, while failing to invest proportionately in R&D.

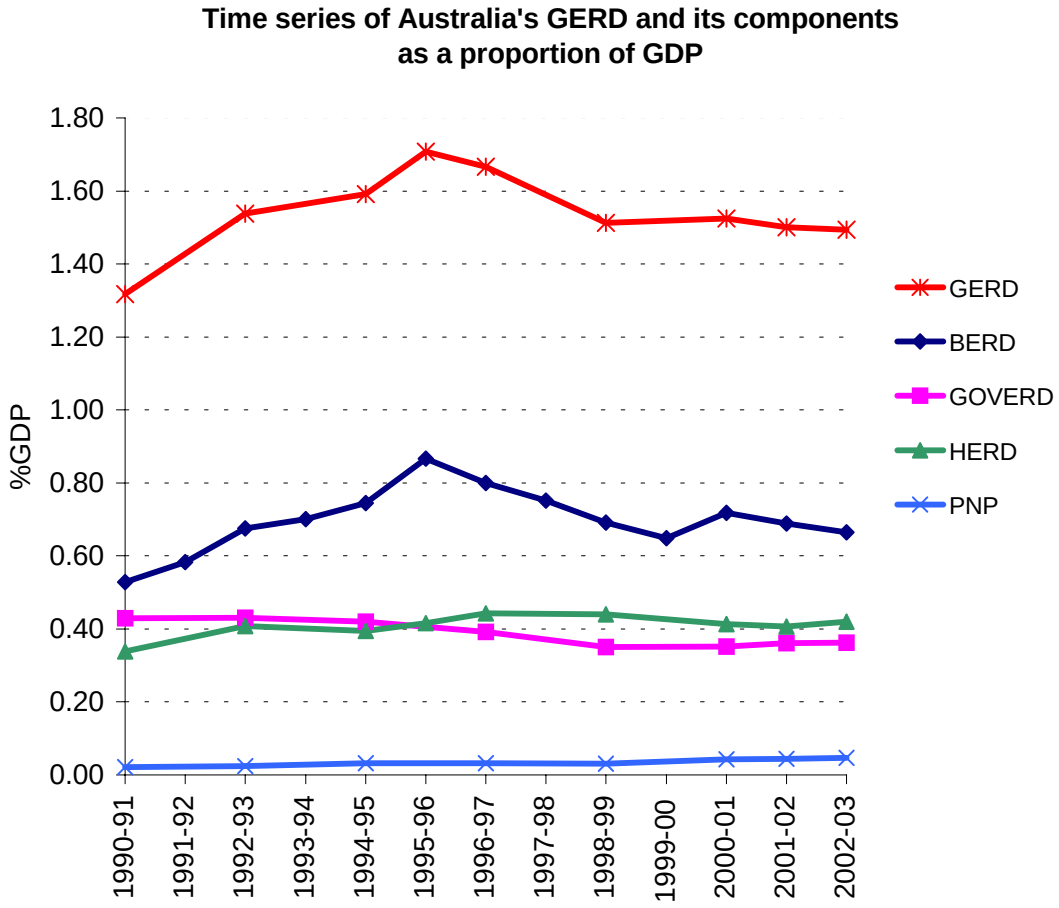
[1] This paper is available on the Go8 website at www.go8.edu.au.

Figure 1



Business investment in R&D was rising strongly until 1995-96. In the following period it declined, both as a percentage of GDP (Figure 2) and in real terms. At roughly the same time public investment in R&D in universities and government research agencies also began to show weakness.

Figure 2



The improvement in GERD in real terms in 2000-01 is largely due to a positive reaction from the business sector, which increased R&D expenditure by 18%. However, the level of additional Government funding may not be sufficient to restore Australia's international ranking in public sector research which has fallen from 3rd of 20 OECD countries in 1996-97 to 6th in 2000-01. Our estimates show very little to no growth in public sector expenditure as a percentage of GDP in the subsequent two years 2001-02 and 2002-03

The encouraging increase in BERD in the past year does not by itself provide a basis for confidence that similar improvements would continue. This analysis has assumed that BERD would remain at the current level in real terms, which means that BERD/GDP would continue to decline.

3 Benefits to the Nation

Australia's competitive position in the global economy depends upon its capacity to develop new knowledge. Successful, competitive nations are the first to understand and exploit new ideas. Australia has invested substantially in research over many years, especially from public sources, and has built a valuable R&D capability, particularly in its

universities and government research agencies. That capability, in science, engineering and technology as well as in the humanities and social sciences, has delivered great benefits to the nation in the past and will be even more critical to the nation's future in the global knowledge economy.

At the aggregate level there is a strong correlation between the rate of growth in a country's investment in R&D and its rate of growth in GDP. Both the rate and speed of return from research are increasing as the global knowledge economy develops. This applies to R&D in industry as well as university research, especially given the increasingly close links between the two sectors. In the Australian context there is a strong reliance by business on public sector research. For example, of all scientific research papers cited in private sector Australian-invented US patents, 90 per cent are from publicly-funded institutions.[2]

The economic efficiency of a nation is becoming increasingly dependent on the quality and scale of knowledge generation through basic research and knowledge and technology diffusion in the community. Investment in R&D by the private sector plays an important part in the innovation cycle. Where industry funded research is conducted by universities and public science agencies there is increased public benefit through the development of additional expertise and facilities in the universities and research agencies, provision of additional research training opportunities, and closer linkages. Business investment in R&D, historically the weakest link in Australia's chain of R&D funding, was rising strongly until 1995-1996. It has been falling steadily since then, both in real terms and as a percentage of GDP, with 2000-01 seeing the first increase after four years of decline.

It is essential therefore to acknowledge that Australia's R&D capability, even after the welcome initiatives of *Backing Australia's Ability*, is not keeping pace with that of other nations and, in relative terms, has declined in recent years. The investment of the past is being run down, limited resources are being spread too thinly, and total R&D funding as a percentage of GDP is going backwards relative to the rest of the world[3].

The Group of Eight believes that, in the knowledge-based economy, the key to a competitive Australia lies in increased investment in R&D, including greater input by the private sector, and closer collaboration between universities and industry as knowledge-producers and knowledge-users.

4 Removing disincentives to investment

There is a need for greater cross-portfolio coordination to create an environment conducive to increased private sector investment in research. Industry and science policy has tended to operate at too great a distance from higher education policy, although the recent inclusion of Science within the Education portfolio may rectify part of this problem. This distance is inconsistent with the development of the knowledge-based economy in which closer

[2] Narin F, Albert M, Kroll P, Hicks D, Inventing our Future: the link between Australian patenting and basic science – Summary of Findings, AusInfo, Canberra 2000, p12

[3] These issues are addressed in detail in the Group of Eight paper Research and Innovation: Australia's Future, available at www.go8.edu.au.

collaboration between the producers and users of knowledge provides the key to competitiveness.

There are currently a number of disincentives to invest in R&D which should be reconsidered. Initiatives to reverse these disincentives include taxation changes to assist the start-up of companies based on innovations arising from university research, for example through more generous treatment of share options and other forms of equity offered to inventors where a university chooses to spin out a company.

Specifically, consideration should be given to more generous tax treatment of share options, deferral of taxation (including capital gains tax) and other measures to encourage and support individuals to take up equity in start-up companies based on innovations. Similarly, fringe benefits tax currently may apply to a university sharing equity with inventors where the university chooses to spin out a company. This disincentive to the assignment of equity in spin-out companies should be removed. The establishment of a working group to identify specific measures that could enhance the rate of commercialisation of university research and industry collaboration and investment would greatly assist in the identification and removal of such disincentives.

A central objective of an integrated policy approach should be to encourage greater investment by industry in R&D in a way which forges closer links between universities and industry. The most effective way to do this is to use 'demand pull' by stimulating industry demand for R&D activity.

The Group of Eight therefore recommends the following measures:

1. Establish a working group to identify specific measures that could enhance the rate of commercialisation of university research and industry collaboration and investment
2. Increase the basic level of the R&D tax concession and review the conditions attaching to the premium rate of the tax concession to make it more accessible
    - While *Backing Australia's Ability* introduced a premium rate of 175% for the R&D tax concession for additional R&D, the effective value of the basic rate of the concession remains well below its previous level. Access to the premium rate is limited and complex.
2. Increase the rate of R&D tax concession for R&D conducted by universities and public science agencies
    - Where industry funded research is conducted by universities and public science agencies there is an additional public good benefit through the development of additional expertise and facilities in the universities and research agencies, provision of additional research training opportunities, and closer linkages. These benefits justify a higher rate of tax concession.
3. Re-visit R&D syndication
    - The R&D syndication scheme stimulated a substantial boost to industry funding for university research. The public good benefits of this have not been adequately assessed. It is possible that, with

careful revision, the scheme could be revived in a way that promotes these benefits while minimising the risks of tax evasion.

4. Provide tax incentives for industry investment in research infrastructure wholly or partly for use by universities or public science agencies
    - There would be mutual benefits if industry had greater incentives to invest in research infrastructure that is shared with, or ultimately used solely by, universities or public science agencies. Appropriate incentives could be a cost effective way of increasing private investment in this area.

5 Conclusion

The Group of Eight is committed to building upon its partnerships with business with a view to maximising the returns on investment in university research. Partnerships between research universities and the private sector stimulate innovation and knowledge creation with resulting public good and social benefits. With this submission we enclose copies of the Group of Eight innovation brochure which includes case studies of successful innovation in our universities. A number of these examples demonstrate the value of public-private partnerships.

The Committee is urged to consider the recommendations made by the Group of Eight which are designed to stimulate business to higher levels of investment in R&D, especially R&D based on university partnerships. The dividends will be significant for all Australians.

Professor John Hay
Chair

Virginia Walsh
Executive Director

30 August 2002

AUSTRALIA'S LEADING UNIVERSITIES

The University of Adelaide
The Australian National University
The University of Melbourne
Monash University
The University of New South Wales
The University of Queensland
The University of Sydney
The University of Western Australia

The Group of Eight Limited
ABN 98 089 687 990
PO Box 4008 Manuka
ACT 2603 Australia
Telephone 02 6239 5488
Fax 02 6239 5808
http://www.go8.edu.au
executive.director@go8.edu.au

APPENDIX

ABOUT THE GROUP OF EIGHT

The Group of Eight is a coalition of Australia's leading universities. These universities are united in the pursuit of their goal for Australia to achieve an international profile of excellence in research and innovation and to reap the economic, cultural and social benefits.

Membership comprises the Vice-Chancellors of:

The University of Adelaide
The Australian National University
The University of Melbourne
Monash University
The University of New South Wales
The University of Queensland
The University of Sydney
The University of Western Australia

Group of Eight universities:

- Conduct over 70% of all Australian university research;
- Produce between 60% and 80% of internationally recognised Australian university research publications in every field of research;
- Dominate university research links with industry, accounting for 54% of all Australian university expenditure on applied research and 61% of all expenditure on experimental research;
- Attracted $263 million in research funding from industry and business in 2001;
- Are partners in over 80% of the Australian Government's Cooperative Research Centres;
- Enrol more higher degree research students than all other Australian universities combined;
- Conducted research accounting for 96% of US patents originating in Australian universities, and
- Rank amongst the top 20 enterprises in Australia holding US patents.

The objectives of the Group of Eight are to:

- Enhance the contribution of Australia's leading universities to the national social, economic, cultural and environmental well-being and prosperity;
- Extend the contribution of Australia's leading universities to the generation and preservation of the world's stock of knowledge;
- Strengthen Australia's capacity to engage in and benefit from global developments; and
- Expand opportunities for Australian students, regardless of background, to participate in higher education of world class.