

Business R&D and Technology Transfer - The Context

New Zealand's challenges

New Zealand has a distinctive industry structure with

- Few large R&D intensive firms
- A high proportion of export receipts from primary production
- Success at growing new firms, but challenges in growing them to a global scale and retaining the benefits here

The Economic Growth Agenda aims to increase the number of high value manufacturing and service firms that are more R&D intensive. To do this government needs to ensure that firms are incentivised to invest in R&D activities that accelerate their growth.

A mix of tools is required

- Our tool set is currently limited both in terms of stimulating firms to invest in R&D and in the transfer of knowledge between publicly-funded research organisations and firms
- Our medium to larger sized firms under-invest in R&D. It is these firms that offer greatest potential to lift economic performance
- There are sector niches in New Zealand's economy with strong growth potential - in particular high value manufacturing and services and building off our primary sector through safe value added foods
- There is strong evidence to show that increases in business R&D lead to increases in GDP. However, R&D is a long term game with the impact difficult to clearly attribute. Other economies where business R&D has increased have seen shifts in industry structure toward higher value products and services

There are also other relevant actions underway that will support the wider business innovation environment

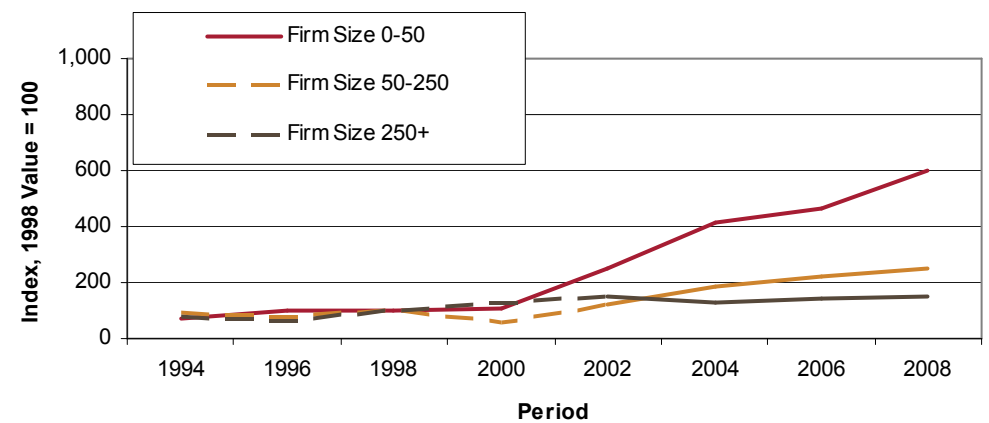
- The CRI Taskforce will report in January 2010 on ways to strengthen CRI performance. Clearer science priorities will enhance the responsiveness of the science system and CRIs to the needs of firms
- The Prime Ministers Chief Science Advisor is also providing advice on a multi year plan for science and innovation
- The Tax Working Group and Capital Markets Development Taskforce will make recommendations to optimise the business environment
- Government already has a range of tools designed to enhance firms capabilities to innovate and internationalise

Trends in business R&D

Business Expenditure on R&D in NZ is low. However, it is growing among our small firms, but is not growing at the same rate in our larger businesses. To achieve EGA targets will require our larger firms to lift their

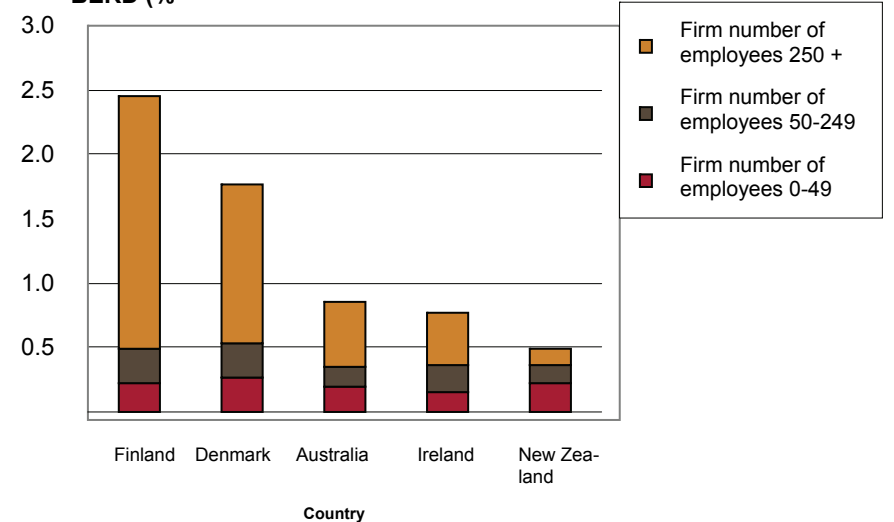
NZ BERD growth \$m by Firm Size 1994-2008 change over time, indexed to 1998 values = 100

Source: Statistics NZ (Research & Development in New Zealand)



Level of business expenditure on R&D by firm size

BERD (%)



Key decisions on direction

Action is needed on two fronts—lifting in-firm R&D and improving linkages between our firms and publicly-funded research organisations. Further analysis of the options follows, but in summary

1) Lifting in-firm R&D

Either:

- Spend **\$100M+** and implement a new **non discretionary targeted grant**

Or

- Spend a more modest amount—say **\$25–50M** to implement a new **development voucher**

Both are aimed at supporting more development activity within R&D intensive firms to accelerate commercialisation of in firm research. The main difference is in the selection and number of eligible firms. The non-discretionary grant would be broad based with rule based selection. The Development Voucher would be targeted at a smaller number of firms and would be more judgement based selection.

AND

2) Improve linkages between our firms and public research organisations

- A new initiative is a **technology voucher** for firms to spend at a research organisation (**\$5M**, pilot)
- There are some relatively low cost initiatives to get better transfer of knowledge between publicly-funded research organisations and firms that can be delivered through reprioritisation
- The findings of the CRI Taskforce are also likely to address linkages between firms and publicly-funded research organisations

Summary of funding packages for new initiatives

Initiative	\$25–50M extra	\$100–\$200M extra	\$200m+ extra
Business R&D Initiatives			
Non Discretionary grant		√	
Development Voucher / Grant	√		
[deleted—confidentiality of advice]			
Technology transfer Initiatives			
Technology Voucher	√	√	√
[deleted—confidentiality of advice]			
Centre of excellence in technology transfer	√	√	√

Assumptions

1. All these packages complement the existing TechNZ programme
2. With no additional funding some of the smaller scale technology transfer initiatives can be funded through reprioritisation

Funding Sources

Funding to enhance business innovation and enhance linkages between firms and publicly-funded research organisations can be sourced from:

- [deleted—confidentiality of advice]
- Reprioritisation within Vote RS&T
- Reprioritisation from other votes
- A combination of the above