



OutLook

(March 2008 - Updated January 2009)

Horses for Courses – Fixing the Growth Problem in New Zealand

Foreword

This series of papers has been developed to underpin the policy advocated by the New Zealand Manufacturers and Exporters Association (NZMEA).

The Association advocates a targeted tax approach to enhance and accelerate innovative behaviours in New Zealand firms. We draw on the analysis and experience of our membership, and other research to substantiate and present our perspective on how New Zealand can increase the growth rate of productive innovation and enjoy a first world future.

This paper discusses some alternative ways to think about innovation as it operates in different segments of the economy. Innovation and change have inherent risks for any company, yet change alone suggests that the more innovation our companies try, the greater the pay-off for the wider economy will be.

Introduction

New Zealand needs a range of policy settings that supports and encourages diverse innovation in all parts of the economy, and creates a more robust and diversified economic base. These incentives need to be targeted towards specific economic sectors to be really effective.

For example, a Crown Research Institute (CRI) such as AgResearch has a clear and constrained region of operation; helping to maximise the performance of the agricultural potential in New Zealand. Its' boundaries, focus and issues are clear and comparatively well-defined. On the other hand, Industrial Research Limited (IRL) faces a sector, which in comparison to AgResearch, is ill-defined and almost without boundaries. It is hard to see how one structure, the CRI, can be expected to function well when facing a sector with almost limitless scope.

The objective of this paper is to demonstrate that to increase the success of a small isolated nation, New Zealand's innovation system must itself be innovative. One size does not fit all, and supporting the generation of wealth requires many different forms of intervention, including no intervention at all.

Support required by firms to assist the innovation process can vary from R&D support to help with commercialisation, or staff and skills development. The one constant is that improvements need investment. For the best outcomes, the policy mix should offer a diverse and coherent support and incentive framework for investment in productive innovation; anything less will simply deliver more of what we have seen, along with New Zealand's continued slippage in terms of wealth creation and living standards with respect to the developed world.

“This Association advocates a targeted tax approach to enhance and accelerate innovative behaviours in New Zealand firms”

“interventions need to match the needs of the target sector”

Economy Growth Overview

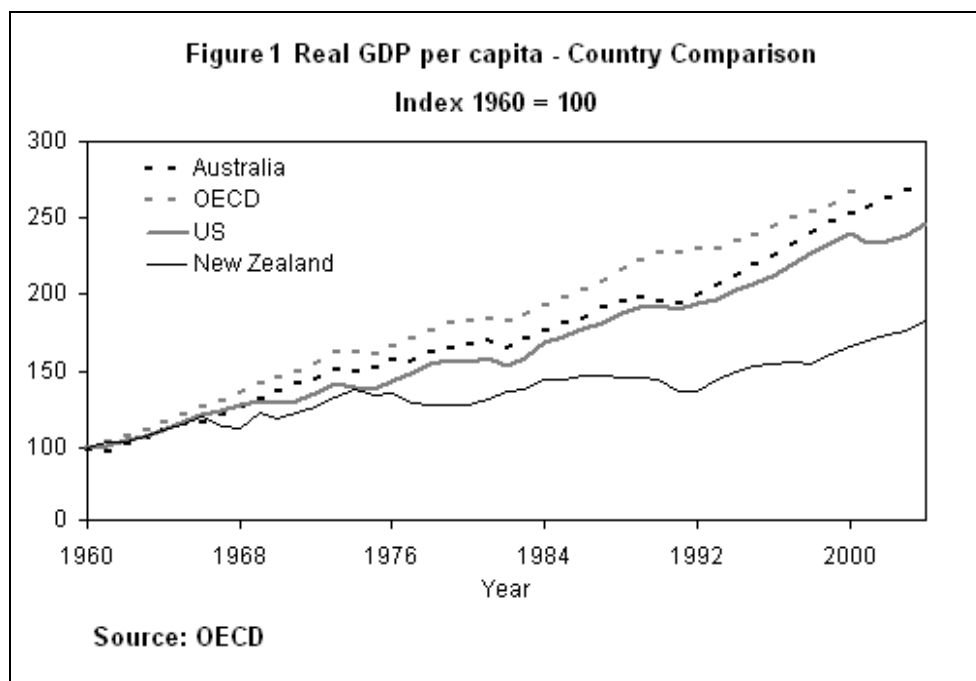
As we step into the twenty-first century, the world is changing faster than ever before. New Zealand, with a population of 4.3 million, and relatively low capital stock has to compete with industrial giants such as the United States, UK and Germany. At the same time, we have to scramble for market share with developing countries like China and India who benefit from their large scale and low labour costs.

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New Zealand has been a long-standing member of the Organisation for Economic Cooperation and Development (OECD), and each year the Organisation publishes the OECD Rankings, which place its members in the order of the country’s Gross Domestic Product (GDP) per capita¹. In the 1950s, New Zealand had a GDP per capita nearly 48 percent above the OECD average, ranked fifth, with only the United States, Switzerland, Luxembourg and Canada ahead. In the 1960s, even though New Zealand still held fifth place in the OECD Rankings, the level of GDP per capita had fallen to 31 percent above the average. In the 1970s, New Zealand’s GDP per capita figure was about 111 percent of the OECD average, and the ranking had slipped down from fifth to eleventh marking the start of the downward trend.

In the 1980s, a breakdown point for New Zealand economy, the GDP per capita figure fell 4 percent below the OECD average, and eight more countries became richer in GDP per capita terms leaving New Zealand in nineteenth place heading into the 1990s. After some major economic reforms, New Zealand managed to stop the drastic fall in the OECD rankings and kept itself in twentieth place with GDP per capita of 86 percent of the OECD average. The country comparisons of long-term GDP per capita growth are shown in Figure 1 with New Zealand’s economic growth failing to match the OECD average for the last forty years.

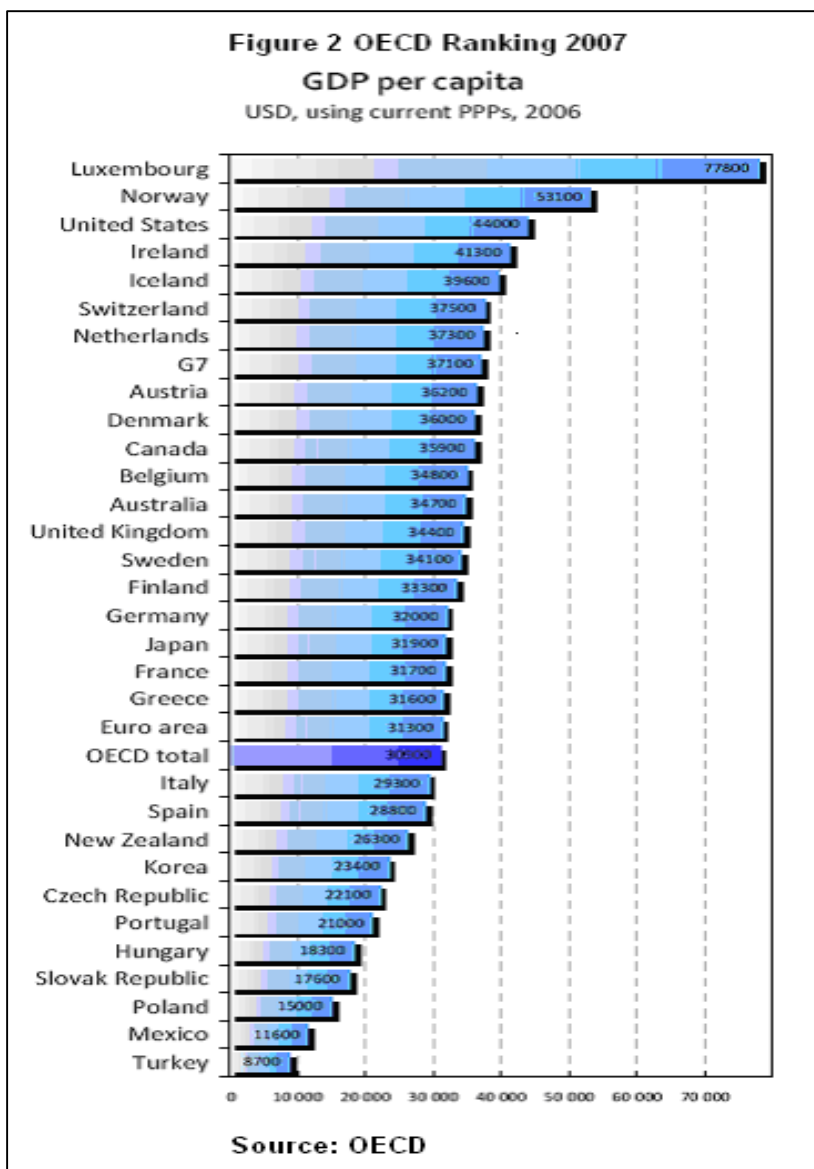
“New Zealand’s economic growth has failed to match the OECD average for the last forty years”



In September 2005, the minority Labour-led coalition Government was elected for a third term. It was their stated intention to lift New Zealand up the OECD ladder, however, there was no improvement in our ranking. As revealed by the OECD 2007 figure, New Zealand’s GDP per capita is about 85 percent of the OECD average, and placed at twenty-second (see Figure 2). This suggests that even though the recent growth rate in GDP per capita has been somewhat higher relative to other economies, the country will need to sustain the high levels of growth for long periods of time in order to regain a higher rank in the OECD.

From 2002 to 2004, the GDP growth in New Zealand was in the range of 3.5 percent to 4.5 percent, peaking at 4.6 percent annual average growth in December 2002. Since the second half of 2005, growth has eased - average annual growth dropped to 1.4 percent in the year to 30 September 2006, with a recent peak of 4.4 percent in the year to December 2004. According to the Treasury forecasts, growth is to remain low or negative in the short term, especially after the US sub-prime mortgage financial crisis that surfaced in 2007, which has led to a downturn in the global economy. This performance is startling given the contention by Treasury² that we have a deregulated economy. Clearly a better Government policy framework is needed to lift economic performance.

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In short, New Zealand’s current economic condition can be summed up in the sentence³, “New Zealand ranks more highly in the OECD on quality of life indicators (which depended on a range of factors including income) than it does on the two narrower economic measures: what New Zealand earns – gross national income (GNI) per capita – and what New Zealand produces”.

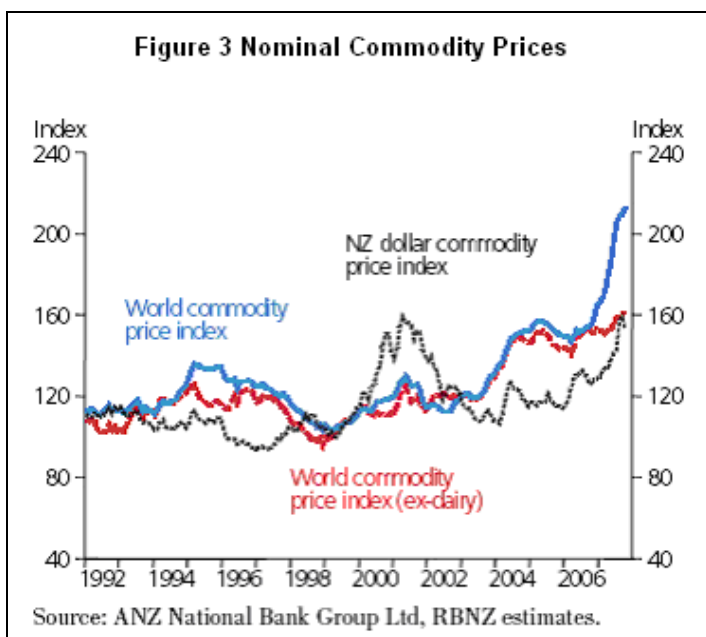
The question is: should New Zealanders be content about our economic performance because poor economic performance is compensated for by the cleaner air and greener grass, and accept that New Zealand will become a poorer country as a result? If the answer is no, then how to generate and sustain a higher level of growth should become our principal policy concern. However, before getting into the detail

of how to promote growth, it is important to assess the magnitude and feasibility of that “top half” goal.

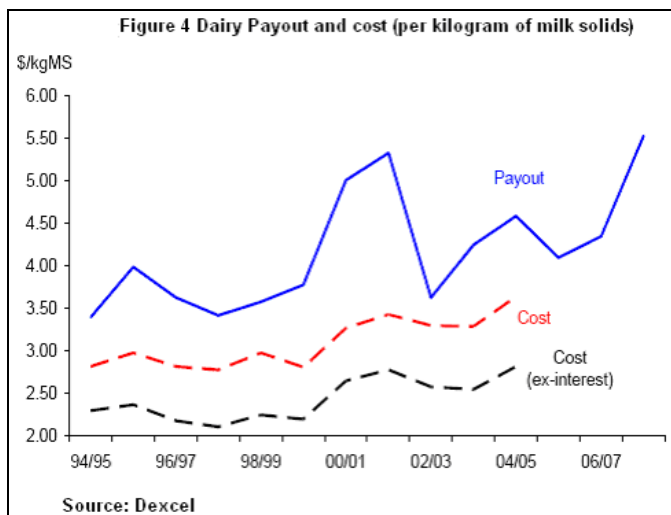
Overall Growth is the Key

In 2007, New Zealand generated GDP of US\$125,585million⁴. The primary industries accounted for 6.8 percent of GDP, the goods producing industries contributed 21.6 percent⁵, and the service industries 67.7 percent⁶. Therefore, in dollar terms, the primary industries contributed US\$8539.78million to GDP, the industrial sector produced US\$27126.36million, and services generated US\$85021.05million. Every person in New Zealand will need to generate an additional US\$4200 per year in order for New Zealand to be as well off as the average in the OECD. By a rough calculation, New Zealand would need a significant US\$17850million⁷ additional GDP, an overall increase of 14.21 percent in the economy.

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Even though the primary industries account for a relatively small part of GDP, New Zealand is renowned for its agriculture-based economy rather than its industrial base. Since 2002, world commodity prices have risen to a record-high in 2007 (see Figure 3). As a result, the dairy industry has enjoyed a long period of growth, and high dairy prices have flowed through into higher payouts for New Zealand’s dairy farmers (see Figure 4). Since then the world commodity price has fallen drastically, and in January 2009 Fonterra forecast a payout of NZ\$5.10 for each kilogram of milk solids, which was substantially lower than last year’s forecast of \$7.90.



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In contrast, the economic performance has not been so good for the industrial sector. For the year ended September 2006, the manufacturing sector experienced a contraction of 1.5%, and the sector is no longer the biggest employer in the Linked Employer-Employee Data (LEED) series. This raises the question as to whether high value manufacturing is the road to riches, or whether manufacturing will become a sunset activity and it is the dairy boom, and growth in service industries, that have the capability to make New Zealand rich again.

To attain the OECD average the New Zealand economy must generate approximately US\$17850million⁸ additional GDP. Given all other sectors continue as business as usual (for example, 0-1% growth for industry and 3-4% for services), and if all the other additional output must flow from the primary sector, the primary would have to nearly triple each unit of output. Is this really possible when issues around environmental sustainability, resource limitations and susceptibility to climate change are brought into the picture? As for the service sector, it has achieved strong growth in recent years, but without strong primary and productive sectors, services will lose their customer base and the capacity for growth will be limited. According to The Bank of New Zealand/Business New Zealand Performance of Services Index (PSI), the rate of growth in the services sector has eased since April 2007⁹.

“New Zealand’s future must be built on a diverse base of growth from all industrial and primary sectors”

These figures show that New Zealand’s future must be built on a diverse base of growth from industrial and primary sectors, and policy must match the needs of each sector, particularly those with significant growth potential. The best outcomes on a sector by sector basis will require different policy settings sensitive to the unique nature and growth potential of each sector.

Monetary Policy and Low Export Growth

Non-inflationary growth has been one of the main objectives for the New Zealand Government. According to the current Policy Target Agreement (PTA), the Reserve Bank of New Zealand (RBNZ) is to keep inflation between one and three percent on average over the medium term. The Official Cash Rate (OCR) was introduced in March 1999 as the primary tool¹⁰ to achieve this target. The OCR is moved up, to increase interest rates in an effort to restrain demand, and so control inflation.

Unfortunately, when inflationary pressures are high the use of the OCR also serves to increase the exchange rate, as foreign speculative funds are attracted to New Zealand’s high interest rates so long as New Zealanders continue to borrow. The high exchange rates diminish returns for exporters and damage our productive sector. Even more worryingly in the long term is that high interest rates and overvalued exchange rates have amplified external sector risks, resulting in reduced investment.

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Until 2008, New Zealand was in an expansion phase. The Consumer Price Index (CPI) inflation for the year to September 2008 was 5.1 percent, which is well outside

the target range. In July 2007, the OCR reached a record-high of 8.25 percent in an attempt to control this problem, and the New Zealand dollar reached 82 US cents (see Figure 5).

Policy contrasts between the big northern economies and New Zealand were part of the problem. Inflation in the USA was ignored and their interest rates remained low meaning that the contrast with interest rates in New Zealand placed intolerable speculative pressure on the New Zealand exchange rate. Dealing with the consequences of these policy differences must be a component of the local policy framework.

Since July 2008, a number of expansionary policies have been implemented and the OCR was reduced to 3.5 percent in January 2009, which is still high by international standards.

Figure 5 NZD/USD Exchange Rate 1990-2009



“the problems causing persistent inflation driving up our exchange rate should not be forgotten despite inflationary pressures easing.”

In essence, the persistent inflationary pressures are the source of the problem. Although inflation control has now become a non-issue due to the global financial crisis, the negative growth impact of high inflation should not be forgotten.

It is recognised that international factors such as high oil prices are outside the New Zealand Government’s control, however, fiscal policy should be in line with monetary policy in order to promote growth. Investment in productive activity should be encouraged as opposed to land and buildings, and our monetary policy framework needs to be reviewed¹¹.

‘One Size Does Not Fit all’ - Innovation and Government Involvement

Innovation has become a key issue to countries and individual businesses. Products and services are the result of the intellectual property generated by innovative firms and individuals. As one of the key drivers of economic growth, promoting and encouraging technological progress and innovation has become one of the main policy objectives of Governments around the world.

As with most developed countries, New Zealand has noted the importance of encouraging innovative activities in increasing economic growth. Research and Development (R&D) has the most obvious and direct impact on innovation¹². On the surface, it looks like New Zealand is not doing enough R&D; approximately 1.17

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percent of GDP was spent in the 2006 reference year, which is well below the OECD average¹³ of 2.25 percent. It is worth stating that there is no point doing R&D for the sake of R&D, because without commercial outcomes the effort is effectively wasted. Who should be doing more R&D and where should the effort and investment be focused?

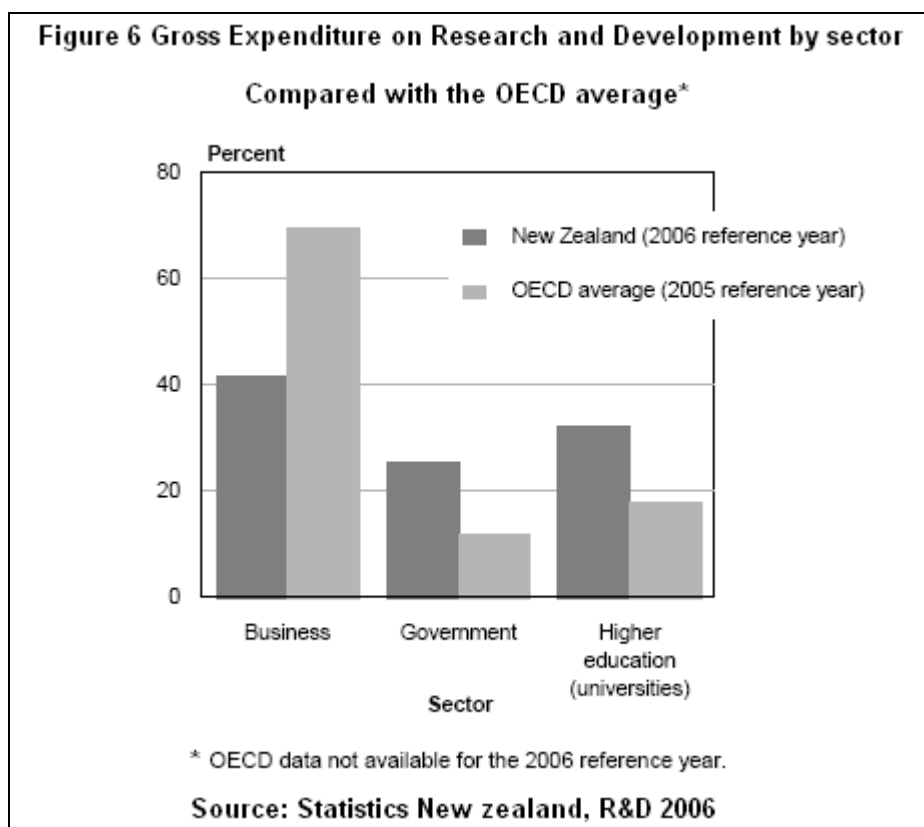
In general, R&D expenditure is measured in the business, government and higher education sectors (i.e. CRIs and Universities). Currently, New Zealand’s business sector and universities are underperforming in terms of R&D compared to the OECD average (see Table 1).

At the same time, the sector distribution of New Zealand’s R&D investment is rather different (see Figure 6), particularly in the business sector. Businesses contributed a considerably lower percentage of overall R&D expenditure compared to the OECD average and our investment profile resembles Eastern Europe and Latin America, rather than the pattern of East Asia and the West¹⁴. To some extent, the lack of business contribution may be compensated by the CRIs and Universities, but to what affect?

Table 1 Research and Development Expenditure as a Proportion of GDP

	Business	Government	Universities
OECD average	1.49	0.27	0.39
New Zealand	0.49	0.30	0.38

Source: Statistics New Zealand, R&D 2006



“Changes in tax treatment of R&D were widely welcomed by industry, and placed New Zealand on par with other developed countries. Removing the credit leaves innovative firms at a severe disadvantage.”

There is a disproportionate R&D contribution by Government. The previous Government had recognised the imbalance, and announced the changes in the tax treatment for R&D investment in the 2007 budget in encouraging business R&D. This means a New Zealand business that undertook R&D would have been eligible for a tax credit of 15% of allowable expenditure from the 2008/09 income year. This change was widely welcomed by industry, and placed New Zealand on a par with other developed countries in this regard. The removal of the credit in the 2009/10

income year is a backward step, which goes against international trends, and has left New Zealand's innovative firms at a severe disadvantage.

Statistics New Zealand splits gross R&D expenditure into four categories of socio-economic objective (see Figure 7). Respectively, 18 and 20 percent of gross expenditure are spent in improving agriculture, forestry and fishing (primary) and industrial development (manufacturing).

Socio-economic objective	\$(million)	Percent
Agriculture, forestry and fishing	333.2	18
Industrial development	360.3	20
Development of infrastructure	295.0	16
Other purposes	837.2	46
Care of the environment	137.5	8
Health	268.7	15
Earth and atmosphere	58.2	3
Others ⁽¹⁾	372.8	20
Total	1,825.6	100

(1) Includes energy, social development and services, defence and other research purposes category. General advancement of knowledge (knowledge general) is included in the other purposes category.

Source: Statistics New Zealand, R&D 2006

Within the business R&D, 31 percent is done for industrial development and 20 percent is for purpose of primary production (see Figure 8). Based on the assumption that businesses invest for profits, there is no reason to regulate how and where the R&D funding is spent.

Socio-economic objective	\$(million)	Percent
Agriculture, forestry and fishing	151.3	20
Industrial development	233.7	31
Development of infrastructure	188.4	25
Other purposes	189.8	25
Care of the environment	10.9	1
Health	102.6	13
Earth and atmosphere	1.9	0
Others ⁽¹⁾	74.4	10
Total	763.3	100

(1) Includes energy, social development and services, defence, and other research purposes. General advancement of knowledge (knowledge general) is included in the other purposes category.

Note: Due to rounding, figures may not sum to stated totals.

Source: Statistics New Zealand, R&D 2006

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However, the same story does not apply to the government sector. Within the government sector, four types of R&D have been conducted (see Figure 9). 84 percent of government R&D was spent on acquiring new knowledge (basic, targeted basic and applied research), with 44 percent directed primarily towards a specific practical aim or objective. The remaining 16 percent, experimental redevelopment, was directed at producing new or improved products, processes and services.

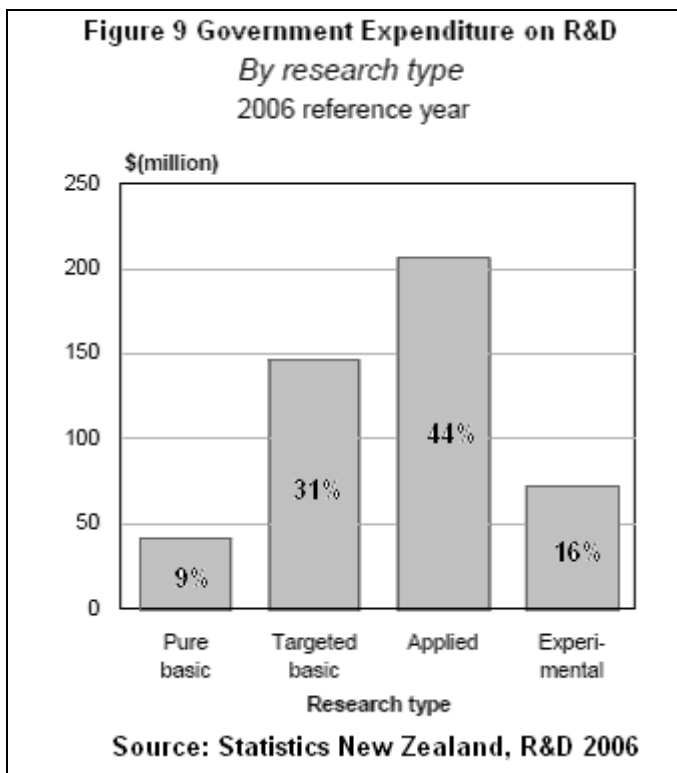


Figure 10 Government Expenditure on Research and Development
By socio-economic objective 2006 reference year

Socio-economic objective	\$(million)	Percent
Agriculture, forestry and fishing	145.4	31
Industrial development	59.6	13
Development of infrastructure	33.6	7
Other purposes	230.7	49
Care of the environment	96.6	21
Health	41.8	9
Earth and atmosphere	35.6	8
Others ⁽¹⁾	56.7	12
Total	469.4	100

(1) Includes energy, social development and services, defence, and other research purposes. General advancement of knowledge (knowledge general) is included in the other purposes category.

Note: Due to rounding, figures may not sum to stated totals.

Source: Statistics New Zealand, R&D 2006

This R&D is typically carried out via crown entities such as Universities and CRIs. The work only acquires value when it is utilised or commercialised by third parties. Compared to others, the primary sector has relatively explicit and constrained aims and objectives, therefore it benefits directly from Government R&D, provided the technology is transferred to producers. For the manufacturing sector, and especially elaborately transformed manufacturers (ETMs), constraints are less obvious and competition is more immediate. It is impossible for these crown entities to know their customers needs beyond the primary sector, and it is impractical to develop and maintain the range of skills and capabilities that might be needed by industrial users.

By its nature, the competitive landscape for industry is diverse and success is unpredictable. It is impossible to pick winners; we should not be surprised that it is generally not working.

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Government spending on R&D for the primary sector is probably money well spent. It can be targeted, and given the technology developed is transferred to our producers, the tax payer will see a return for the investment. Government spending on industry is too difficult to be effective; we need a better way to encourage growth in the industrial sector.

Conclusion

The task for New Zealand in climbing back up the OECD ladder is not a simple one. Recognising our strengths and weaknesses is the first step, but as long as Government policy pursues a 'one-size-fits-all' innovation policy, the efforts to accelerate growth across all sectors of the economy will continue to fail.

New Zealand's economic sectors have different needs and different commercialisation paths. Faster growth follows from the right sort of support delivered in an appropriate way, and must not be seen as an issue of providing support for one sector only. In March 2008, the previous Government announced the launch of its 'New Zealand Fast Forward Programme in Pastoral and Food Industries' and the contribution of NZ\$700 million to the fund. On the same day, Feltex announced that it was cutting manufacturing jobs at two of its Lower North Island plants.

The point here is that support for innovation requires a broadly based approach that delivers a diverse commercial outcome. Even though for innovation it is a case of the more the merrier, it is important to note that different sectors require different stimuli and support. This paper used the example of a land based CRI and highlighted that they have a relatively well defined and constrained region of operation, helping maximise the performance of the agricultural potential in New Zealand.

In comparison, the industrial sector is essentially incoherent, so any policy intended to encourage industrial innovation should, of necessity, be different to those seeking to maximise land based outcomes. The 'one-size-fits-all' approach will continue to deliver low growth outcomes. The right intervention to match the needs of each sector will encourage higher growth.

The industrial sector needs behaviour targeted support to encourage the right environment for higher levels of innovation. Specifically, greater investment in productive activity including:

- A balanced taxation regime across income, profits and realised capital gains.
- Isolate efforts to restrain inflation from the exchange rate and significantly reduce the impact of house prices on the CPI measurement.
- Extend deductibility on early stage productive investments.

More R&D based commercial out-turns:

- Tax credit for R&D.
- Expense all productive equipment and patents.
- Tax credit for people and skills development targeted at new products and process.

This range of policy settings is required to support innovation. Expensing plant, equipment and patent costs, early stage investment deductibility and tax credits for skills development, would provide a commercialisation framework for a R&D Tax credit. This would create a balanced approach to encourage a diverse range of innovation and development across our entire economy.

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“The industrial sector needs behaviour targeted support to encourage greater investment in higher levels of innovation.”

Members of the New Zealand Manufacturers and Exporters Association make nearly \$2.0 billion in sales and have an export value of around \$1.0 billion. Our organisation can trace its existence back to the early history of New Zealand. As a legacy of the hard work and careful financial management of the past, we have a significant asset base that enables our independence and extends our activity. Subscriptions fund only a very small part of our current operating costs.

Membership is open to all manufacturers and exporters and others at the discretion of our Council. Enquiries should be directed to mea@mea.org.nz.

¹ Measured in USD and inflation adjusted using current year PPPs.

² <http://www.treasury.govt.nz/economy/overview/2007/nzefo-07.pdf>

³ Quote from Economic Development Indicators 2007 page 18, which is produced by Ministry of Economic Development, The Treasury and Statistics New Zealand, for more detail see http://www.med.govt.nz/templates/MultipageDocumentTOC____32722.aspx

⁴ GDP figure is purchasing power parity (PPP) adjusted and sourced from CIA World Book. <https://www.cia.gov/library/publications/the-world-factbook/geos/nz.html#Econ>

⁵ Manufacturing sector output contributed 14.9% of real GDP.

⁶ Source: The Treasury, New Zealand Economic and Financial Overview 2007, p. 15.

⁷ Multiply the additional GDP per capita (USD4200) by New Zealand's population (around 4.25 million), which gives the additional GDP figure of USD 17,850 million, where the population figure is sourced from Statistics New Zealand population clock on January 2008, and the figure is estimated to increase by one person every 10 minutes and 23 seconds.

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⁹ <http://www.businessnz.org.nz/file/1367/PSI%20Write-up%20for%20January%202008.pdf>

¹⁰ For more information on New Zealand monetary policy, please refer to MEA Outlook "Monetary Policy and Productivity", <http://www.mea.org.nz/document.aspx?id=163>

¹¹ For more information on productive investment, please refer to MEA Outlook "Assets Tax and Productivity", <http://www.mea.org.nz/document.aspx?id=43>

¹² For more information on R&D in New Zealand, please refer to MEA Outlook "Research and Development", <http://www.mea.org.nz/document.aspx?id=44>

¹³ 2005 reference year.

¹⁴ The Economist, Feb 7th Issue, "Of internet cafes and power cuts".