

## Sustainable economic growth for New Zealand: An optimistic myth-busting perspective

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Long-term vision is something we tend to avoid in New Zealand, with the possible exception of Māori, who have greater reason to focus on the development of their assets for future generations of mokopuna. But I will argue here that vision is essential to any strategy aimed at enhancing prosperity. It is my belief that we are poor because we choose to be poor, and that what holds us back are self-serving but dishonest myths.

The first myth is that we are an egalitarian society, a great place to bring up children. However, in income disparity, child mortality, imprisonment rates, and most other negative social indicators, we are among the worst in the OECD. The second myth is that we are clean and green. In truth, the reality is altogether different. Like other developed countries we have despoiled our environment to eke out a measure of prosperity, and we therefore have no moral high ground from which to preach to others. Our valuable dairy industry severely impacts our rivers and lakes. Our pastoral industries are significant emitters of greenhouse gases. The third myth is that we, as New Zealanders, do not need prosperity, that we have 'lifestyle' instead. However, we complain that our health system

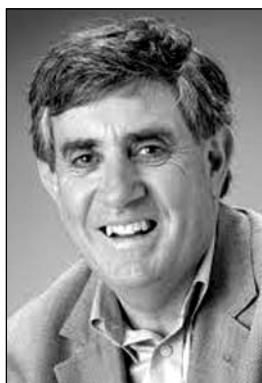
cannot afford to meet our needs and that our infrastructure is decrepit, and now we face significant economic stress following the Christchurch earthquake. Furthermore, the 'lifestyle' argument is hard to sustain, given that, although New Zealanders are the second hardest working in the OECD, when we look at how hard we work against how productive we are, compared with other OECD countries, we see that New Zealanders are amongst the least productive.

Fifty years ago more Australians migrated to New Zealand than *vice versa*, and the New Zealand dollar was much stronger than Australia's. Now Australia is 35 per cent richer than New Zealand, representing a \$40 billion per annum GDP shortfall for us. Let me illustrate that in a different way. There are 1.3 million FTE of jobs in New Zealand. In order to maintain our current per capita GDP we need a revenue per job of \$125,000. In order to match Australia we need around \$170,000. Tourism brings in around \$80,000 per job, and while usefully employing unskilled New Zealanders, it cannot provide a route to prosperity. By contrast the dairy industry brings in around \$350,000 a job. The problem with dairy is that environmental limitations prevent us from scaling it up at all, let alone by the factor of 5 or 6 we need to make up the \$40 billion per annum shortfall.

Interestingly, our largest export-earning sector is manufacturing (contradicting yet another New Zealand myth that everything is 'made in China'). At around \$250,000

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**Sir Paul Callaghan** GNZM, FRS, FRSNZ is Kiwibank's 2011 New Zealander of the Year, for his service to science in the fields of nanotechnology and magnetic resonance. He holds a DPhil from the University of Oxford, was made Professor of Physics at Massey University in 1984, and was appointed Alan MacDiarmid Professor of Physical Sciences in 2001.

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a job on average, these businesses thrive by producing goods that have a high profit margin and a high ratio of value to weight. The key to this kind of manufacturing is knowledge content, and that in turn is driven by investment in research and development (R&D). The poster child of such business is Fisher and Paykel Healthcare, with a \$500 million per annum of exports. If we had 100 such companies, our prosperity would be assured, and in a manner which is entirely sustainable. Such businesses generate no greenhouse gases, do not require land or energy, and do not dump nitrates in our streams. Out in the larger global economies, there are even more startling examples of sustainable businesses which are highly productive. Apple Inc earns around \$2,000,000 per job, while Google and Samsung earn around \$1,400,000.

The engine of such an economy is the pipeline of small and medium enterprises that have the potential to grow through investment in R&D. Herein lies New Zealand's failure to understand what drives real prosperity in the outside world. We have been stuck at a public funds investment in R&D of only 0.5 per cent of our GDP for decades, regardless of which party is in power. This is way behind our competitors. As an excuse, governments argue that industry investment is even less, but in my view, that simply reflects the existing bias towards low R&D business in our national business profile. For example, the food industry world-wide typically invests 0.5 per cent of revenue in R&D while the pharmaceutical industry invests 90 per cent. Our second failure arises from false analysis concerning a need to specialise. It is argued that because we are small, we must specialise by playing on our strengths. In the 1990s, a belief that we needed to build on our biological industries strength led to a disproportionate investment in biotechnology, for very little beneficial outcome. Out of our top 100 companies in 2010, only two are in biotech. Now politicians tout cleantech or smart foods.

The obvious and the politically fashionable products will undoubtedly be addressed by much bigger players than New Zealand in the world economy. The evidence shows that we will be good at what we are good at, and we need to be prepared for the fact that we are good at some unusual and unpredictable stuff. Where we will be successful is in the technology niches. Because we are only 0.2 per cent of the world's economy, we are subject to a 500 times multiplier which can make such niches highly profitable bases for businesses which are large on the New Zealand scale. Fisher and Paykel Healthcare dominate the world market for respiratory humidifiers. Rakon are world-class players in crystal-controlled oscillators. If we can, as we do now, have 10 such companies exporting between them nearly \$4 billion per annum, why not 100? Indeed, we have grown such companies despite a complete lack of awareness by the New Zealand public that we can do this sort of thing. These businesses are essentially invisible. They do not sell in New Zealand, but internationally. They do not sponsor the ballet or children's soccer. They make weird products that our kids and their parents do not understand.

We have it in our power to change all that. We have an excellent education system, as good as the Danes or Swedes. If we care for our environment and create a just, equitable and creative society, a 'place where talent wants to live', we can attract the best in the world, and provide opportunity for our most talented Kiwis to see their future here. Imagine what we could achieve if we built a strategy around, and made central to our thinking, the existing success of our emerging knowledge sector, gearing our education system accordingly. One hundred inspired New Zealand entrepreneurs can turn this country around. That is the challenge for us all.