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### **Bringing on the Innovators**

Seventy years ago this week a little-known Hungarian patented one of the 20<sup>th</sup> century's most successful inventions. Lazlo Biro, a journalist tired of writing with smudgy wet ink, observed in a Budapest printing shop that printing ink dried quickly and left no mess. With his brother Georg, Lazlo developed the ballpoint pen that these days can write for up to five linear miles and, since 1950, has sold in numbers upward of 100 billion worldwide. Sadly for Hungary, the Biro brothers fled World War II Europe and settled in Argentina, which claims Lazlo as its own and still celebrates his birthday as Argentinian Inventors Day.

Governments around the world seek to create the conditions that give rise to successful entrepreneurs like Biro, Thomas Edison, the Wright brothers, Henry Ford, Bill Gates and the countless other achievers whose inventions transform lives and help drive a country's economic growth.

In New Zealand it's often argued that a significant investment of public funds into knowledge-intensive industries, science, engineering and higher education will act as a springboard for prosperity. Of course knowledge and information technology are fundamental to economic progress, and New Zealand plainly needs good scientists and engineers. Likewise few would dispute the need for publicly funding 'public good' research into such things as local soils or methane emissions.

But there is little evidence that New Zealand is a technological laggard. OECD figures put us in the top group of countries for IT spending as a proportion of GDP and our provision of computers in schools is among the highest in the world. We rate well for uptake of new technologies like the internet, and our spending on tertiary education relative to GDP is higher than all but a handful of OECD countries. Total R&D spending in Ireland,

an outstanding economic performer, is similar to New Zealand relative to GDP.

That is not to say all is well on this front: areas crying out for attention include the current dearth of qualified maths and physics teachers. It may well make sense to invest more public money in this vital area, to enable schools to attract and reward good teachers with pay that reflects scarce skills and performance.

But what's missing in the argument about appropriate levels of government funding for higher education and science is a proper debate about the principles for public and private funding, and how we run our institutions. For example, the interest-free student loans policy has diverted large resources that could be going into teaching and research, yet vice-chancellors seem cowed into silence about it.

The same need for rigorous analysis applies to government spending on R&D, where New Zealand's spend relative to the private sector stacks up well against other OECD countries and will doubtless be bumped up further by the new R&D tax credit. But international evidence shows no clear correlation between government spending on R&D and a country's economic growth rate.

Furthermore, there is ample evidence that when governments do try to pick winners or even clusters of winners, they usually get it embarrassingly wrong. Witness the fate of the Wright brothers after their successful first flight in 1903. The US federal government, which had earlier given a large grant to a team of top-drawer Smithsonian professors to be the first to fly, could not accept that a pair of amateur bicycle builders from Ohio had gazumped them. So the Wrights endured decades of battling US officialdom, and their aeroplane *Flyer I* spent most of its and their life languishing in the British Museum.

Those searching for lessons about how to nurture entrepreneurship could well look to Silicon Valley, a standout modern success story. A good account of it, titled *Why Silicon Valley Should not Normalise Relations with Washington*, was written some years back by Cypress Semiconductors

chief executive T J Rogers. *“I do not want more government in Silicon Valley”,* wrote Rogers. *“[Government] extracts 20 percent of the yearly output of Americans in federal taxes, consumes much of it to run a grotesquely inefficient organization, and then allows us to fight to recover in the form of grants and subsidies the rest of what we first earned...”*

As Rogers concluded, the key factors that knowledge-intensive firms need to prosper are not very different from what other businesses need: low taxes, because high taxes reduce the expected return on risky projects and curtail investment; and low regulation, especially employment-related: if governments make it costly to shed workers when ventures don't work, they won't be started in the first place.

Mostly what governments need to do is get out of the way and concentrate on their own core functions, such as providing public goods (including public good science and infrastructure) and rigorous, competitive education. Only in such environments will the ideas of today's Wright and Biro brothers emerge and take flight.

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