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TITLE: Cut science funding and lose valuable innovation

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The word productivity will be used countless times in this election campaign but the issue of our investment in science will be lucky to get its 24-hour news cycle in the sun. And while business groups are often critical of governments for being focused on the short term, they are not calling for increased funding for science education or scientific research.

On the contrary, they are calling on state and federal governments to cut taxes and public spending.

Investment in science is one of the longest-term investments a society can make and scientists deliver some of the biggest benefits. As Marie Curie said:

“We must not forget that when radium was discovered, no one knew it would prove useful in hospitals. The work was one of pure science. And this is a proof that scientific work must not be considered from the point of view of the direct usefulness of it. It must be done for itself, for the beauty of science, and then there is always the chance that a scientific discovery may become, like radium, a benefit for mankind.”

In the 1990s the CSIRO invented Wi-Fi. That innovation has now netted the government science organisation more than \$430 million and transformed the café industry and office architecture. While the technology itself was genuinely innovative, it is the way it's been applied that has driven the real, albeit impossible to predict, increases in productivity.

Over the past two decades the Australian debate about innovation and productivity has become increasingly unoriginal and unproductive.

There is a big, but often overlooked, difference between productivity growth and cost reduction. The former relates entirely to the amount of output a company can generate per unit of input.

The latter refers entirely to the price a company pays for those inputs.

You would fail a first-year economics student who confused reducing wage costs with increasing productivity, but our captains of industry make such claims on a regular basis.

While it is obvious why businesses would prefer to pay less for workers' buildings or materials, such savings have nothing to do with productivity and everything to do with profit. Increasing productivity requires firms to innovate so that they can produce more output from the same level of inputs. But while driving genuine productivity requires energy and imagination from senior management, calling on government to abolish penalty rates or cut taxes requires little more than funding a lobbying or PR campaign.

LACK OF ADVOCACY

Given their stated interest in productivity growth it is surprising that the big business lobby groups, such as the Business Council of Australia, are not more concerned about the level of investment in fundamental science research and education in Australia. Of course, business groups are often vocal advocates for the tax concessions that accompany their R&D spending. But when it comes to training the next generation of scientists, or better equipping the current crop, business groups are virtually silent.

Boosting productivity growth is a long-term problem which requires long-term investments. Schoolchildren need to develop a strong base of core mathematical, scientific and communication skills.

Universities and TAFEs need to be able to take such foundations for granted and have the resources to refine them further.

And, at the tip of the iceberg, the public and private sector institutions that employ our best scientific minds need long-run financial stability. This will allow them to both embark on bold long-run projects and, in a world market that is hungry for scientific talent, offer secure and attractive working conditions.

Despite the neglect, science is already a major employer and exporter in Australia, with pharmaceutical exports topping \$3.8 billion compared to the car industry's \$3.0 billion. In addition to pharmaceuticals, the Australian Bureau of Statistics records a further \$3 billion worth of medical instruments, measuring devices and other precision equipment.

But of course, science is about ideas, not just equipment and exports. And despite its low profile in our policy and political debates, Australian science continues to produce cutting edge innovations.

Like educating a young child, investing in science will deliver inevitable and often unforeseeable benefits.

If our business community was really interested in productivity growth it would be clamouring for more investment in scientific research and education.

And if our political leaders were really interested in the future they would already be investing. But while investing in science takes decades to pay off, cutting penalty rates will boost profits, but not productivity, straight away. The most long-term feature of the business lobby's reform agenda seems to be its persistence in calling for short-term fixes.

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