

THE LAST WORD



WHY SHOULD THE PUBLIC FUND RESEARCH?

At some time or another, most health economists have been asked ‘why it is necessary that governments fund medical research?’ At the policy level in Australia, there’s a frequent tension between those who assume that if research is worthwhile, it will find a market, and those who recognise that markets rarely maximise social outcomes.

There’s a plethora of reasons why research will be underfunded in the absence of public support, though there are four which stand out.

First is the issue of information asymmetry. At heart, researchers are researchers, not fundraisers or businesspeople. It’s not only unreasonable to expect them to find their way through finance markets, but it’s a profoundly inefficient distraction from their core business.

Second, research is inherently unpredictable. This matters particularly in the case of preclinical research, where failure rates are understandably very high, and pivots away from the initial hypothesis are common. It simply doesn’t fit any traditional paradigm of a fee for service transaction. It’s also why – in the clinical phase – venture capital is so expensive, because any successful innovation must make sufficient return to cover investments in a substantial proportion of studies which aren’t profitable.

“**Alongside this, there’s a particular problem for healthcare research of long and expensive timelines. By comparison, information technology and telecommunications research faces nothing like the ethical, safety, efficacy and funding hurdles which slow new medical technologies. As an illustration, a recent estimate of the pre-approval cost of any new pharmaceutical is somewhere between 2-3.6 billion Australian dollars.**”¹

And fourth, we have the Australian problem, which is that we’re a long way from the world’s dominant markets – both for customers, and for finance. Successful research requires both ideas and capital, and these tend to cluster and grow in larger marketplaces – particularly those where innovation-hungry multinationals are based.

These problems aren’t unique to medical and other biotechnology research: in his book *Rockonomics*, the late Princeton economist, Alan Krueger outlines similar characteristics of what are termed superstar markets; where in music, small numbers of performers earn the lion’s share of the money.² That said, while it’s similar to health research as a portfolio-based investment market, musicians can rest easy that they don’t need approval from the FDA.

All these issues explain why it would be virtually impossible to fund pre-clinical research commercially, and why we need programs such as the NHMRC and the MRFF. But shouldn’t it be easier to find a market for clinical research, which already has proof of concept?

“**The answer is that compared to pre-clinical research, it is easier, but there remains a catch. If we leave it to the market, the amount of research which will be funded will still be lower than the amount which is socially desirable.**”

The reason for this is that – even with intellectual property regimes as strong as those of Australia – the originator of an invention can never capture all the value of her discovery: there is a free rider effect, as competing firms learn about the new technology; people move from one firm to another and take skill improvements with them; and there is replication in less strict IP markets. So, we still need to subsidise post-campus research in order to deliver the socially optimal share.

By socially optimal, we mean several things. A healthy research program not only employs many people, but it increases competitiveness and exports. Australia has priced itself out of some of our historical manufacturing activities (think cars), so the higher our average level of



skills and education, the better placed we are for such structural adjustment.

And following from the comment on clusters above, we want Australia to grow as a target for the intersection of ideas and capital. The impact of this is not limited to the economic benefits of successful and exportable technologies: the broader research market produces health system efficiencies and other reforms, which are peculiar to our country, and which will never emerge from overseas.

Finally, there’s an overriding ethical reason for public funding of research. The reason we fund healthcare in general is not simply economists’ preoccupations: keeping people in the workplace; and reducing the cost of chronic disease. We do it even though most of the benefits are privately consumed (people are happier). Research is the driver of better individual lived

experience: it’s an incontestable good; and it’s one of the best things we can support with tax revenue.

¹ Grabowski, Henry G & Hansen, Ronald, “Innovation in the pharmaceutical industry: New estimates of R&D costs”, *Journal of Health Economics*, February 2016, p.31 (US\$ figures converted at AUD=US\$0.7)

² Krueger, Alan, *Rockonomics: A Backstage Tour of What the Music Industry Can Teach Us about Economics and Life*, New York, Currency, 2019, p.6

Author: Alastair Furnival is a Principal with the Economic Consulting Firm Evaluate and a member of Research Australia and an active member of our Health Economics Roundtables.