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Committing to the Innovation Nation

WHY THE R&D TAX INCENTIVE
IS SO IMPORTANT FOR AUSTRALIA



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T H E M C K E L L I N S T I T U T E

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FOREWORD

The word ‘innovation’ is everywhere. It’s discussed daily by politicians, it’s in the titles of government reports and inquiries, and the Government has an agenda dedicated to it. However, what most Australians don’t realise is that there has been a concerted effort for thirty years to improve the rate of innovation within Australian businesses and the public sector. There have been more than 60 Government reports into innovation over the last 15 years alone.¹ But still, on many measures of innovation, Australia has been stalled for years.

This is why the biotechnology industry is up in arms over the most recent decision by Government to cut the R&D Tax Incentive. In September, the Senate passed the *Budget Savings (Omnibus) Bill 2016*, which carved 1.5 per cent from the R&D Tax Incentive. Shortly after, the Government finally released the *Review of the R&D Tax Incentive*, which contained six recommendations to alter the R&D Tax Incentive policy. This review and the most recent change mark the latest in a series of reviews, reports and inquiries into and modifications of this one policy, culminating in years of uncertainty for those who use it.

Government reviews and announcements have an impact on the economy. Reviewing one policy over and over can undermine trust in that policy amongst industry stakeholders, and lead those stakeholders to consider alternative markets that are more stable. This report considers how uncertainty caused by the Government’s reviews and tinkering with the R&D Tax Incentive has affected the biotechnology industry. We find that some biotech firms have already changed their investment strategy as a result of the Government’s actions. The rest are watching developments closely and are seriously considering moving their firms offshore to markets that are more supportive of innovation. In a global industry like biotech, firms can and will choose the best economies in which to base their operations. Firm managers consistently told the author that Australia is attractive because of the R&D Tax Incentive, and little else.

The disappointment and incredulity within the Australian biotech industry is palpable. The Government has a coordinated rhetoric naming innovation as the future of Australia’s prosperity, yet their actions suggest otherwise. This report calls for the Government to leave the R&D Tax Incentive alone – we have all the information on it we could possibly collect – now is the time to let it do its job which is to help foster Australia’s true innovators. Innovation is the only way we can possibly realise another 25 years of economic growth – but in order to get there we must get out of the way of the innovators.



The Hon John Watkins
CHAIR,
MCKELL INSTITUTE



Sam Crosby
EXECUTIVE DIRECTOR,
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EXECUTIVE SUMMARY

Biotechnology firm managers are no strangers to uncertainty. Uncertainty surrounding the potential payoff of an investment is common for most businesses; but biotech firms are also faced with uncertainty regarding the development of an investment.² The time a new biotechnology takes to progress through the development pipeline, the costs involved, and the regulatory approval process all present a biotech manager with considerable cause for uncertainty, and make such investments inherently risky. Tax incentives and other policy mechanisms are provided by the Australian Government to somewhat mitigate these risks, with the intention of stimulating investment in industries and technologies that have a social benefit beyond the financial success of individual firms.

However, the Government has been the cause of considerable uncertainty regarding the R&D Tax Incentive in recent years. There have been ten reviews or inquiries that have considered the R&D Tax Incentive since 2003; and four since 2014. In September 2016, the Turnbull Government passed legislation to cut the incentive by 1.5 percentage points, hoping to save the budget \$1 billion. During the same month, the Government also released the long-awaited *Review of the R&D Tax Incentive*, authored by Bill Ferris, Dr Alan Finkel and John Fraser. The Review contains six recommendations for the modification of the policy, of which recommendation three is the most pertinent to the biotech industry as it recommends a \$2 million cap for the refundable component of the Incentive. All these changes and reviews have led many in the biotechnology industry to feel uncertain about the future of the policy, and the future of the biotechnology industry in Australia.

This report assesses the impact uncertainty for this policy has had on the Australian biotechnology industry. It begins with an introduction to innovation in Australia and discusses the significance of biotechnology to this study and the Australian economy. It then provides a background to the R&D Tax Incentive

and a discussion of the academic literature on both the efficacy of R&D Tax Incentives, as well as the impact of uncertainty on investment.

It then presents research that encompasses the opinion of 42 managers and senior decision makers from Australian biotechnology firms on the R&D Tax Incentive. The research finds that the Government has caused a majority of firm managers in the biotech industry to feel uncertain about the future of the R&D Tax Incentive. Although most firms have not yet changed their R&D investment strategy, the industry as a whole is watching developments very closely. Many respondents indicated that further modifications to the policy would result in their organisation reducing R&D expenditure or taking investments offshore to more stable economies. Other respondents thought that further uncertainty would result in fewer international firms investing in Australia.

The Government should be aware of the impact of their actions when announcing reviews and modifying policies that are designed to stimulate investment. Uncertainty caused by such actions is likely to stifle investment; and continued uncertainty may be more difficult to overcome if firms don’t believe the Government when they say this modification is the last one.

RECOMMENDATIONS

RECOMMENDATION ONE

The Government should commit to the R&D Tax Incentive for at least the next 8 years, in order to give innovative Australian businesses the certainty they require to succeed.

Uncertainty caused by regular reviews and modifications of the R&D Tax Incentive is likely to have a significant negative effect on the biotechnology industry if it is to continue. Government policymakers and politicians should be aware of the impact that reviews and Government announcements have by causing uncertainty.

RECOMMENDATION TWO:

The Government should reject the \$2 million rebate cap as proposed in the *Review of the R&D Tax Incentive*.

This cap has the potential to significantly affect the biotechnology industry, likely leading to fewer R&D activities or to R&D activities moving offshore to more supportive economies. This will have a flow on effect to the numerous service providers that service both domestic and international firms.



PART ONE: AUSTRALIA'S INNOVATION AGENDA

Innovation is the key to Australia's prosperity

*Innovation is the "process of discovering new ideas and realising those ideas at large scale, changing the ways we live and work."*³

Innovation has resulted in humans living longer, healthier, and more productive lives. It has changed the way we communicate with one another, how we work, how we travel, and it has changed the very face of our planet.⁴ Technological innovation gave us planes, trains and automobiles; the internet; space travel; and brain surgery. Innovation is rocket science, but it is also medical science and management science and even just finding new ways to generate more sales or track employees' wellbeing. Innovation is what humans have done since the very first of us left Africa 1.75 million years ago.

Innovation is important because it is integral to a nation's economic growth and competitiveness.⁵ Technological innovation is the single most important driver of growth in an economy in the long term, and it contributes towards a higher quality of life for citizens: more jobs, more exports, and more tax revenues for the state, amongst other benefits.⁶

Furthermore, innovation and productivity go hand-in-hand. Analysis shows that Australia's productivity growth since 2005 has been driven mostly by innovation. The *Australia's Innovation System* report, released in December 2015, recognised that "a key determinant in lifting our productivity

performance going forward will be how effectively we unleash innovation."⁷

Innovation drives productivity because innovative firms are "more competitive, more able to capture increased market share and more likely to increase employment than their competitors."⁸ Between 2006 and 2011, firms less than 3 years old created 1.4 million jobs for Australians; conversely, mature firms shed 400,000 jobs during the same period.⁹

In short, innovation is the key to prosperity.

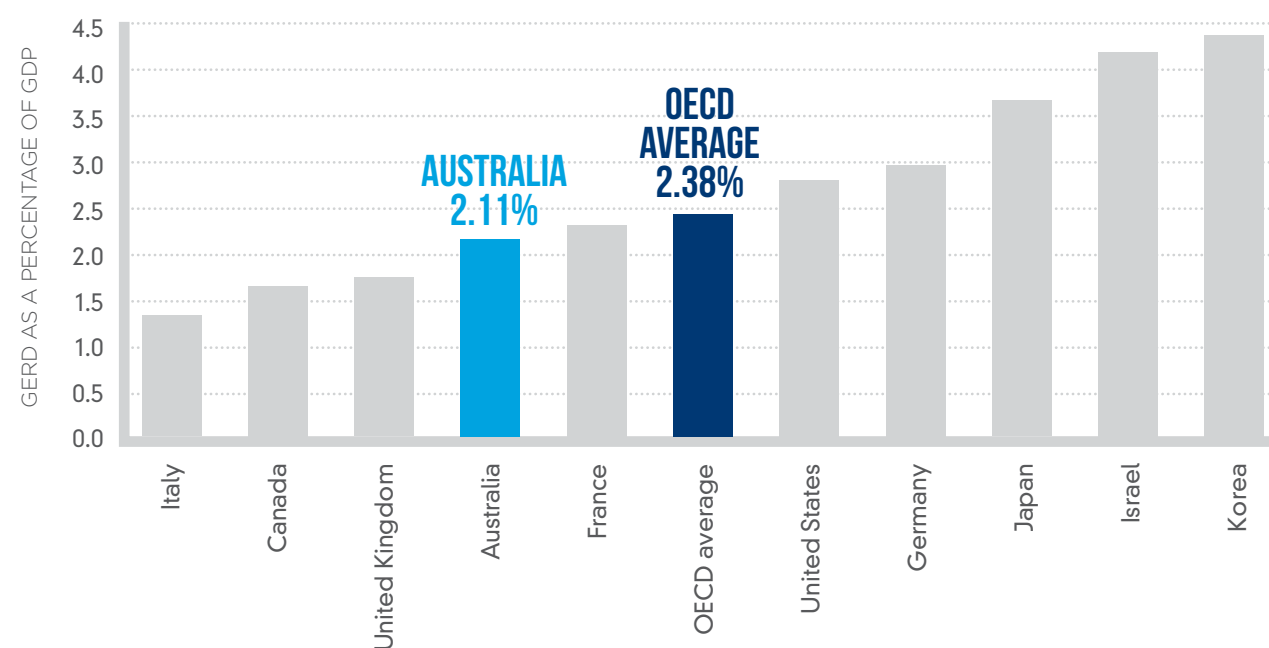
However, the *Australia's Innovation System* report also found that only 16 per cent of Australian firms have a high performance innovation culture, in contrast to 44 per cent of the Global Innovation 1000 (the 1000 largest corporate R&D spenders globally).¹⁰ Further, 36 per cent of Australian businesses have a 'siloes' innovation culture, and nearly 40 per cent had little or no innovation culture at all.¹¹ This is despite evidence that shows that innovative firms are 60 per cent more likely to report increased sales and profitability than other firms.¹²

Innovation can be quantified by the amount of research and experimental development (R&D) taking place in a nation, both by government and business entities.¹³ Australia spends less than the OECD average on these measures, as Figures 1.1 and 1.2 show below.



FIGURE 1.1

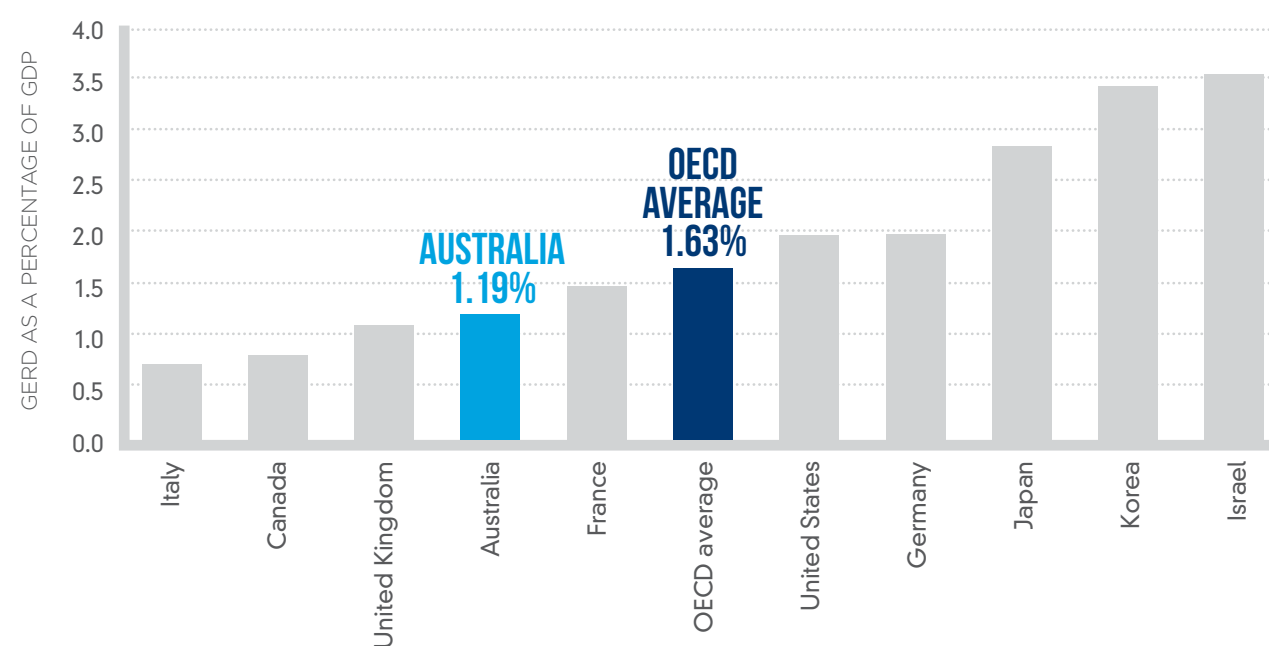
Gross expenditure on research and development as a percentage of GDP, OECD nations



Source: Compiled from OECD Statistics, Main Science and Technology Indicators. Data is for 2014 or latest available year.

FIGURE 1.2

Business expenditure on research and development as a percentage of GDP, OECD nations



Source: Compiled from OECD Statistics, Main Science and Technology Indicators. Data is for 2014 or latest available year.

While Australia's direct government support for R&D is seen as one of the most generous in the OECD, this is largely because Australia is a poor investor (in terms of both business expenditure and gross expenditure on R&D) in R&D. As measured as a percentage of GDP, Australia consistently falls below the OECD average of 2.38% for gross expenditure on R&D, even though the Government has increased investment in R&D since the first government study on innovation in 1993.¹⁴ Australia is currently ranked 14th in terms of both gross expenditure on R&D (GERD) and business expenditure on R&D (BERD) amongst the 34 OECD nations.¹⁵

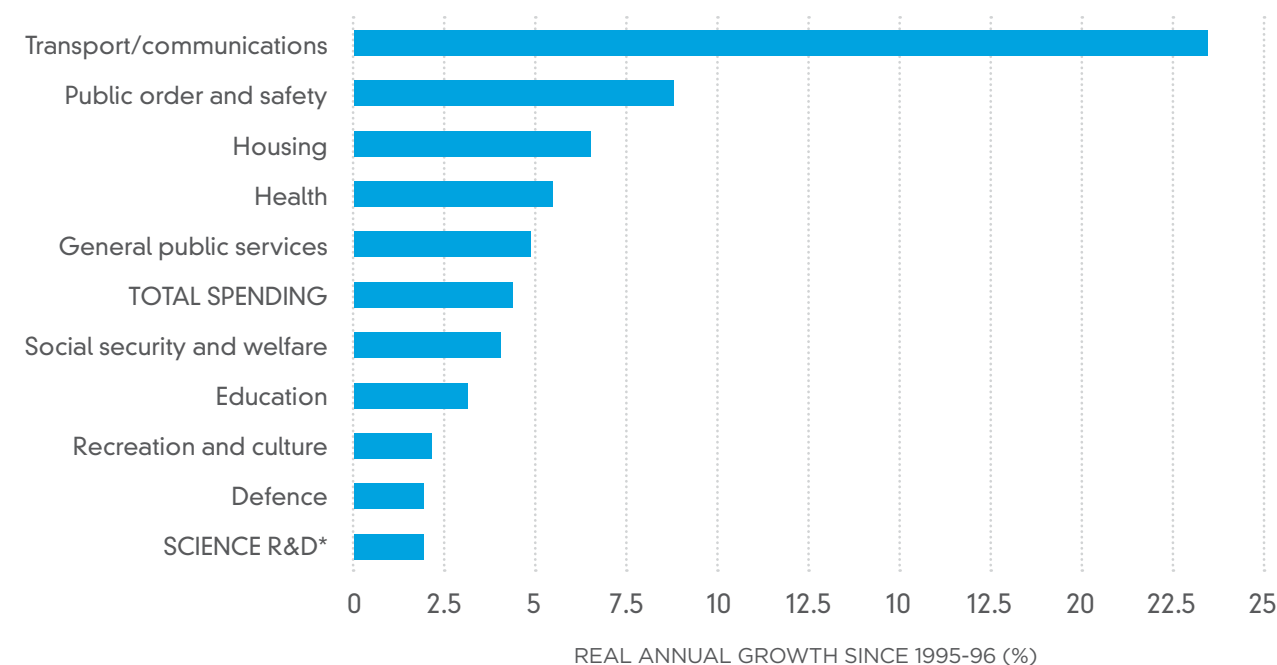
This gap between support and expenditure is almost solely attributable to expenditure on experimental development, leading many to argue that Australia's greatest weakness is its commercialisation of research.¹⁶ The R&D Tax Incentive is, in part, meant to address that weakness.

Further, R&D investment by the Government has grown at less than half the rate of total budget expenditure over the past two decades, as can be witnessed in Figure 1.3.¹⁷

FIGURE 1.3

Growth in budget expenditure 1995-2014

R&D SPENDING HAS FAILED TO KEEP PACE WITH REAL SPENDING GROWTH IN OTHER AREAS



Source: Parliamentary Library, Budget Papers and Sydney Morning Herald, 2014
*includes spending from multiple portfolios

It is for these reasons that policies like the R&D Tax Incentive, which is designed to stimulate R&D expenditure, are important for Australia's competitiveness and investment in innovation. This report assesses how uncertainty with this policy has affected one of Australia's most promising industries – biotechnology.

Biotechnology is a field of the future

Biotechnology promises to feed our growing world, to solve the problems posed by climate change, to reduce waste, and to ensure our oceans, forests, deserts, flora and fauna stay healthy and thriving. It also promises us myriad health benefits resulting in longer, healthier lives through, for example, the application of genomics and personalised medicine. As such, biotechnology is a field of the future: by its very nature it is future facing and innovative, and has the capability to drive economic and jobs growth for many decades.

.....
Biotechnology is “expected to be the next pervasive technology of great significance for future economic development.”¹⁸

Essentially, biotechnology is “the use of living organisms, or their products, to create new ways to improve human health and the environment.”¹⁹ Biotechnology can be applied across a range of different fields and industries, such as pharmaceuticals, marine biology, the manufacture of chemicals for industrial use, and for human, plant and animal health.

Although there is some disagreement as to whether biotechnology is, in fact, an industry or simply a technology, there are around 900 firms employing more than 45,000 people in Australia that are involved in some way in biotech.²⁰ Additionally, AusBiotech, the peak body for biotechnology in Australia, represents some 3000 members.²¹ The Australian Trade and Investment Commission estimates there are around 470 core biotechnology firms in Australia.²²

Given Australia’s STEM infrastructure, highly-educated population, and agenda for economic development in industries other than mining and traditional manufacturing, biotechnology is a field which the government has indicated it wishes to support and foster.²³

The industry also presents a great opportunity for Australia: PwC’s strategy division, *Strategy&*,

predicts that healthcare spending on R&D will surpass R&D spending in computing and electronics by 2018, making healthcare the largest overall industry by R&D spending globally.²⁴ (A significant proportion of the biotech industry is involved in healthcare.) Australia can and should capitalise on this trend: considering innovation is mostly responsible for productivity growth and leads to prosperity in a nation; considering Australia is searching for the next growth industry; taking into account Australia’s strengths in our educated population, our stable regulatory and political environment, and our research infrastructure, biotechnology is not only a field of the future, but should be the field of the future for Australia.

Biotechnology is all about innovation

Biotech is heavily reliant on research and development. Many firms are born out of the discovery of a new technology or product, and during the first years of the firm’s life are focused solely on progressing that product through the development pipeline and into the market. IBISWorld estimates that the total (average) capitalised cost of developing a biotechnology is US\$1.2 billion.²⁵

Some of the larger biotech firms in Australia are now profitable firms with a range of product offerings, however many still conduct a large amount of R&D. CSL, for instance, invested US\$613.8 million in R&D in 2015/16, representing more than 52 per cent of total revenues of US\$1,178.6 million for the company.²⁶

Across the industry, average spending on R&D represents the largest operational cost at about 21 per cent of total expenditures; whereas in most other industries the highest cost is usually employee wages. Wages in biotechnology represent an average of 18.7 per cent of total costs.²⁷

In addition to biotech’s reliance on R&D and innovative nature, the industry has a number of other peculiarities that make it worthy of specific attention for this report. First of all, the product pipelines for biotech, particularly in the area of human health, can be as long

as fifteen or twenty years.²⁸ This is opposed to IT products, for example, that can progress products to market in around 18 months.²⁹ This is largely due to the time it takes to conduct clinical trials and progress products through ethical, clinical and regulatory processes.³⁰ Secondly, development costs can run into the hundreds of millions, and there is no guarantee of getting the product successfully through clinical trials. There is also intense competition for scarce investor funds, and specialist management skills are also often hard to find.³¹

The peculiarities of the industry make it a perfect ‘canary in the coalmine’ indicator of R&D investment in Australia: biotechnology’s heavy reliance on scientific research and access to funds make it likely to be the industry most impacted by policy uncertainty in regards the R&D Tax Incentive.³²

Australia’s Innovation Agenda: Government rhetoric is focussed on innovation

In December 2015, the Turnbull Government launched the *National Innovation and Science Agenda*, designed to promote innovation in Australian businesses and help drive many more years of uninterrupted economic growth.³³ The Agenda is the result of the end of the mining boom in Australia, as well as global trends such as increased automation of many low-skilled jobs that will likely leave many Australians out of a job. Prime Minister Malcolm Turnbull has indicated his support for innovation in order to drive Australia’s transition into a new advanced manufacturing, knowledge-based and service economy.

Since the Agenda’s launch, innovation has become ubiquitous in the rhetoric of Australia’s politicians.

However, around the same time that the Government announced the *National Innovation and Science Agenda*, it also announced another review into the R&D Tax Incentive policy. The Review, led by Bill Ferris, Chair of Innovation Australia; Dr Alan Finkel, Australia’s Chief Scientist; and John Fraser, Secretary to the Treasury, was handed to Government in April

2016 and released on 28 September 2016. The Review made six recommendations to modify the R&D Tax Incentive, including to introduce a \$2 million cap on the refundable component of the Incentive for pre-revenue and loss-making firms.

The following section discusses the history and significance of the R&D Tax Incentive to Australia’s innovation agenda.



PART TWO: THE R&D TAX INCENTIVE

The R&D Tax Incentive supports many innovative Australian businesses

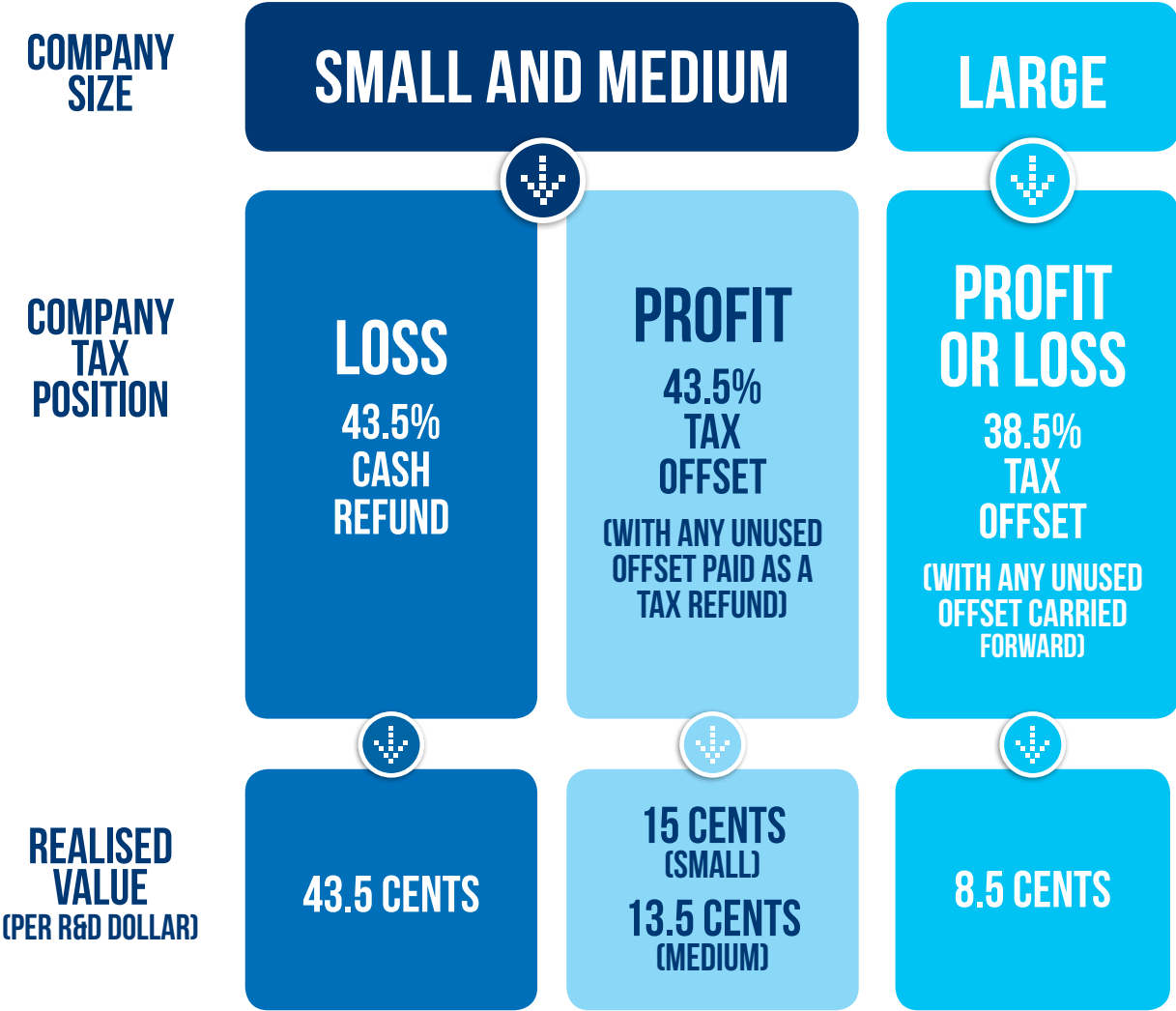
In 1985, Australia introduced a fiscal instrument designed to encourage firms to undertake a higher level of R&D. The policy, called the R&D Tax Concession, was the Government’s answer to the recognition that not all R&D could be undertaken and funded by government, and that businesses often require financial assistance to undertake R&D that might have significant social benefit, but that might not be immediately or generally profitable.³⁴

The tax concession instrument is perceived by governments and industry stakeholders alike as preferable to many other forms of government funding for R&D, as it allows the market to determine the best projects to invest in, and gives assistance to a variety of firms across a broad spectrum of industries and technologies.³⁵

Tax credits such as the R&D Tax Incentive are also relatively simple and cheap to administer through the existing taxation system. The rationale for tax credits is that if the credit reduces the cost of performing R&D, “firms will realise larger than expected returns to their investment, therefore encouraging management to undertake projects that would not otherwise receive funding.”³⁶



FIGURE 2.1
How the R&D Tax Incentive works for different firms



Source: Australian Government, Department of Industry, Innovation and Science, 2017.
Note: Small and medium firms are defined by the Government as with a turnover of less than \$20 million per year.



FIGURE 2.2
How the R&D Tax Incentive works for small firms

EXAMPLE 1

Company taxable position	LOSS of \$1 million
Eligible R&D expenditure	\$1 million
Benefit	\$435,000 (cash refund)

EXAMPLE 2

If the company is in a profit position, the benefit will be in the form of a reduction in tax liability and any unused offset amount will be paid to the company as a tax refund.	
Company taxable position	PROFIT of \$1 million
Eligible R&D expenditure	\$1 million
Benefit Small companies with revenue less than \$2 million	\$150,000 (tax refund) This amount will be paid to the company as a tax refund. It is calculated by subtracting the small company tax rate of 28.5% from the offset amount. = (\$1 million x 43.5% = \$435,000) LESS (\$1 million x 28.5% = \$285,000)
Benefit Medium companies with revenue between \$2 million and \$20 million	\$135,000 (tax refund) This amount will be paid to the company as a tax refund. It is calculated by subtracting the company tax rate of 30% from the offset amount. = (\$1 million x 43.5% = \$435,000) LESS (\$1 million x 30% = \$300,000)

Source: Mckell Institute; Australian Government, Department of Industry, Innovation and Science, 2017.

The refundable component of the R&D Tax Incentive for small and medium sized firms is the most generous in the world and is a significant reason why many firms decide to base operations in Australia. Only a few nations offer refundable tax offsets as is displayed in Figure 2.3.

FIGURE 2.3

The generosity of R&D tax credits around the world

MORE
GENEROUSLESS
GENEROUS

	Criteria for eligibility	Tax credit
Australia	<ul style="list-style-type: none"> Company with annual turnover under \$20 million 	<ul style="list-style-type: none"> 43.5% of eligible expenses – offsets remaining after applying to tax bill paid in cash Cap on R&D expenditure of \$100 million
Canada	<ul style="list-style-type: none"> Federal 35% tax credit – Canadian controlled private business (<\$800,000 annual income) Additional credit offered by provinces 	<ul style="list-style-type: none"> 35% credit on first \$3 million expense. 100% refundable for non-capital, 40% refundable for capital
UK	<ul style="list-style-type: none"> SME – <500 employees and <EUR 100 million revenue or <EUR 86 million gross assets Company in loss position 	<ul style="list-style-type: none"> 24.75% of qualified expenditure can be received as cash (only if in loss position)
Austria	<ul style="list-style-type: none"> All companies conducting eligible R&D activities 	<ul style="list-style-type: none"> 10% cash credit on all eligible expenses
Singapore	<ul style="list-style-type: none"> R&D activities undertaken in Singapore or overseas Restriction on existing software modification 	<ul style="list-style-type: none"> Up to \$100,000 of tax deduction can be converted to cash at 60% i.e. \$60,000 cash payment
Belgium	<ul style="list-style-type: none"> Broad definition of R&D activities in or outside of Belgium but some IP retained in Belgium 	<ul style="list-style-type: none"> 122.5% super-deduction – excess credits after 5 years are refundable as cash Regional cash grants of up to 80% of R&D expenditure (for R&D intensive companies)
Ireland	<ul style="list-style-type: none"> Natural sciences, Engineering & Tech, Medical & health sciences, Agricultural science 	<ul style="list-style-type: none"> 25% credit on eligible expenses – can apply for refunds of corporate and payroll tax paid in previous years

Source: National Foundation for Medical Research and Innovation, 2016.

For large firms, the R&D Tax Incentive is slightly different in that rather than refunding R&D expenditure to firms, it provides an offset that may be carried forward into future years.

The R&D Tax Incentive has undergone many transformations

Since 1985, the R&D Tax Concession has undergone many transformations: today the policy instrument is named the R&D Tax Incentive and since the passing of the Omnibus Act in both houses of Parliament in September 2016, offers small and medium sized firms a 43.5% refundable credit on R&D expenditure (thereby offering an additional 15% discount on the small company tax rate, and 13.5% for medium sized firms); and large firms a 38.5% non-refundable credit on R&D expenditure (an 8.5% discount), to a cap of \$100 million.

“Substantive changes to the rules (of the R&D Tax Incentive) have occurred every five out of the past 20 years. By contrast, the US has had essentially the same R&D tax rules since 1990.”³⁷

The passing of the *Budget Savings (Omnibus) Act 2016* in Parliament in September 2016 cut 1.5 per cent from the R&D Tax Incentive, marking the most recent in a long history of reviews, inquiries and changes to the policy since the early 1990s. There have been ten public inquiries and reviews that have assessed the R&D Tax Incentive since 2003, four of which have been conducted since 2014. The most recent was established in December 2015, submitted to the Government in April 2016, and released by Government for stakeholder feedback in September. Figure 2.4 displays the history of the reviews that have taken into account the R&D Tax Incentive.

The regular investigations into the efficacy of the R&D Tax Incentive has led Australian industry stakeholders to call for certainty and continuity in the program, arguing that the ongoing reviews have led to policy uncertainty which in turn has had a negative effect on R&D investment.³⁸





TABLE 2.1
The history of changes to the R&D Tax Concession/Incentive

Financial year(s)	Company tax rate (%)	Incentive rate (%)	After tax benefit (%)
1987-88	49	150	24.5
1988-89 to 92-93	39	150	19.5
1993-94 to 94-95	33	150	16.5
1995-96 to 96-97	36	150	18.0
1996-97 to 2000-01	36	125	9.0
2001-02 to 09-10 [^]	30	125	7.5
2010-11 to 2014-15 (small and medium firms with turnover <\$20 million)	30	150	15
2010-11 to 2014-15 (large firms with turnover >\$20 million)*	30	133	10
2015-16 (Small company tax rate cut for firms with turnover <\$2 million)	28.5	145	16.5 (in profit) / 45 (in loss)
2015-16 (medium firms with turnover \$2 million - \$20 million)	30	145	15 (in profit) / 45 (in loss)
2015-16 (large firms with turnover >\$20 million)	30	140	10

As of September 2016

Small companies (turnover <\$2 million)	28.5	143.5	15 (in profit) / 45 (in loss)
Medium companies (turnover \$2 million - \$20 million)	30	143.5	13.5 (in profit) / 43.5 (in loss)
Large companies	30	138.5	8.5

[^] Various changes were implemented during the 2001-2010 period, including; the allowance for small loss-making firms to receive an early cash payment based on eligible R&D expenditure, rather than a future entitlement to a deduction; and a 175% premium concession for labour-related R&D expenditure above the firm's three-year average. From 2007-08 Australian incorporated companies belonging to multinational enterprise groups were allowed to claim up to 175% deduction on eligible expenditure. These changes were replaced by a simplified R&D Tax Incentive in 2010-11.

* In 2010-11 the R&D Tax Concession (which was an additional tax deduction) was changed to the R&D Tax Incentive (which is a refundable/non-refundable tax offset).

The purpose of the R&D Tax Incentive is to stimulate growth and attract investment

The R&D Tax Incentive Review cites the R&D Tax Incentive legislation for the objectives of the policy, which are to provide “a tax incentive for industry to conduct, in a scientific way, experimental activities for the purpose of generating new knowledge or information in either a general or applied form.”³⁹ The R&D Tax Incentive is a direct incentive to encourage the uptake of innovation in Australian businesses, in which, as Part One discussed, direct expenditure on R&D is lower than in many other comparable OECD nations.

Tax incentives are a popular choice amongst many governments because they allow the market to decide in which projects to invest;

they are simple to understand, both for firms and governments; and they are relatively cheap to implement through the existing taxation system.⁴⁰ Additionally, when in place permanently, they provide a reliable base for firms to plan their finances and R&D decisions; and the incentives can easily be altered in size and scope without much change in the administration of the measure.⁴¹

Further, the concept of ‘imperfect appropriability’ contends that firms find it difficult to contain all the benefits of an innovation, and hence it is argued that in general, society benefits more from R&D than the innovators.⁴² The main argument in favour of governments offering tax incentives, therefore, is to encourage private firms to invest in R&D that may not be as profitable to the firm as it is to society at large.⁴³

From an industry point of view, participants in an online survey conducted for this report said that the purpose of the R&D Tax Incentive is to “help drive and accelerate growth – for both indigenous (home-grown) firms as well as to attract international companies to collaborate with Australian researchers and firms.” This sentiment recognises R&D expenditure’s role in promoting innovation; and innovation’s role in increasing productivity.

For biotechnology, the R&D Tax Incentive “provides investors with some leverage” and reduces the risk on a project. For many young biotech companies, it has meant projects could proceed even with limited funding, and for some firms it has led to faster development times.

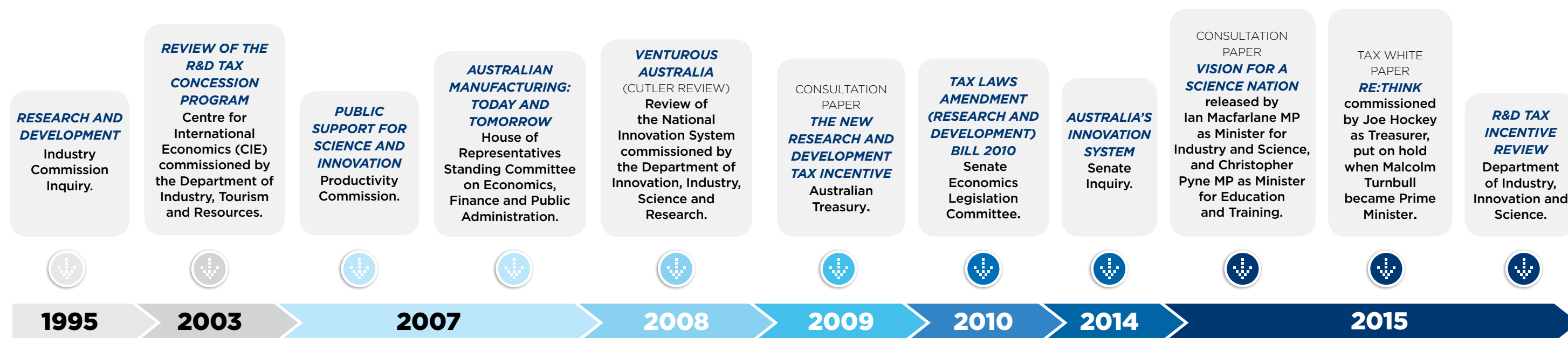
Other firm managers said that the purpose of the Incentive is to “convert Australian ideas

into the global marketplace – this will support the Australian economy over the medium/long term through employment, improved products, productivity and ultimately our standard of living.”

The R&D Tax Incentive is a popular and well-known policy, with wide support in the business community, as can be witnessed in the number of submissions made to the *Review of the R&D Tax Incentive* when it was released in September. For the biotechnology industry, every firm manager interviewed for this study was aware of the Incentive and had used it, and hoped to continue to use it in the future. However, as Part Four will discuss, the recent modification and review of the policy have led many in the industry to feel uncertain about the future of the policy, undermining its efficacy in producing more R&D investment.

FIGURE 2.4

Summary of government reviews, consultations and legislative considerations of the R&D Tax Concession/Incentive



Source: Mckell Institute; Parliament of Australia.

R&D Tax Incentives work

BOX 2.1

The definition of R&D

The world standard definition of R&D comes from the OECD's Frascati Manual, which describes R&D as "activities that comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications."

Source: OECD 2002.⁴⁴

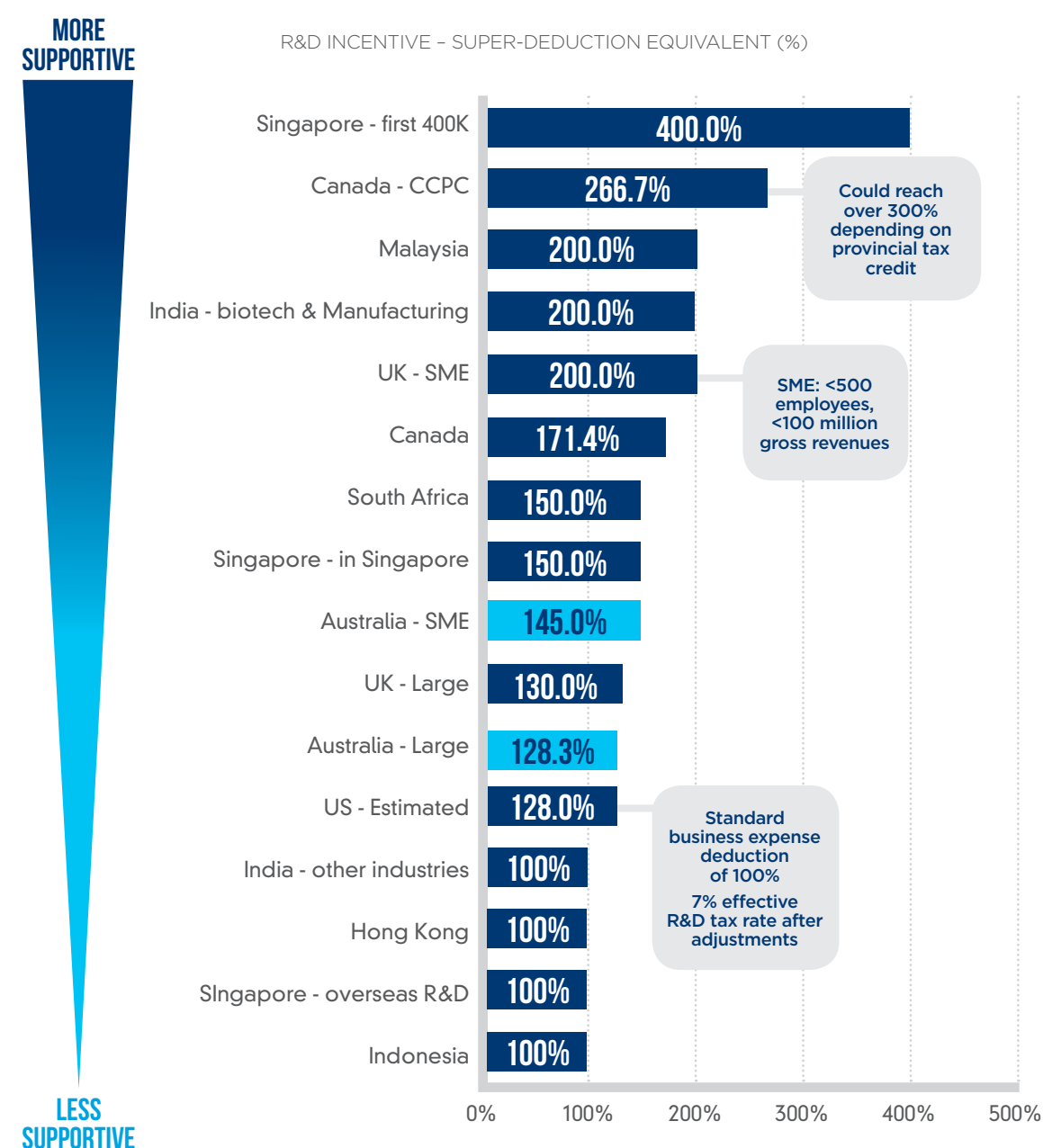


Fiscal support mechanisms for R&D have grown in popularity amongst OECD nations in recent years. In 1995, 12 nations provided fiscal incentives for R&D; in 2004, 18 nations did; and as of 2015, 28 of 34 nations in the OECD gave some form of fiscal incentive to firms conducting R&D within their nation's borders.⁴⁵ The average incentive given across the OECD for R&D activities is 19% for profitable SMEs; 13% for loss-making SMEs and profitable large firms; and 10% for large loss-making firms.⁴⁶

Additionally, many member nations of the OECD have extended tax-based subsidies for R&D since the Global Financial Crisis, even though many of these member states have also embarked on 'tax-rate-cut-cum-base-broadening' corporate tax reforms.⁴⁷ "This fact suggests that there has been a sort of tax competition among OECD countries regarding R&D promotion."⁴⁸

FIGURE 2.5

R&D Tax Incentives around the world



Source: National Foundation for Medical Research and Innovation, 2015.

The likely reason for this is because there is a vast amount of academic evidence that has found that R&D tax incentives are extremely effective.⁴⁹

One study conducted by the Department of Industry, Tourism and Resources in 2007 found that the R&D Tax Concession (as it was called at the time) resulted in an extra \$150-300 million of extra activity for the Australian economy in 2004-05.⁵⁰ The study confirmed the Department's findings from the previous year's survey that discovered that R&D projects proceed faster with government assistance – a critical aspect for research-intensive firms in that first-to-market projects often have a large market advantage.

Other studies have quantified how a drop in the cost of R&D (administered through a tax credit or refund) results in additional R&D expenditure. Studies have found that on average, for every dollar spent on a R&D tax incentive, the incentive stimulated another dollar in R&D expenditure.⁵¹

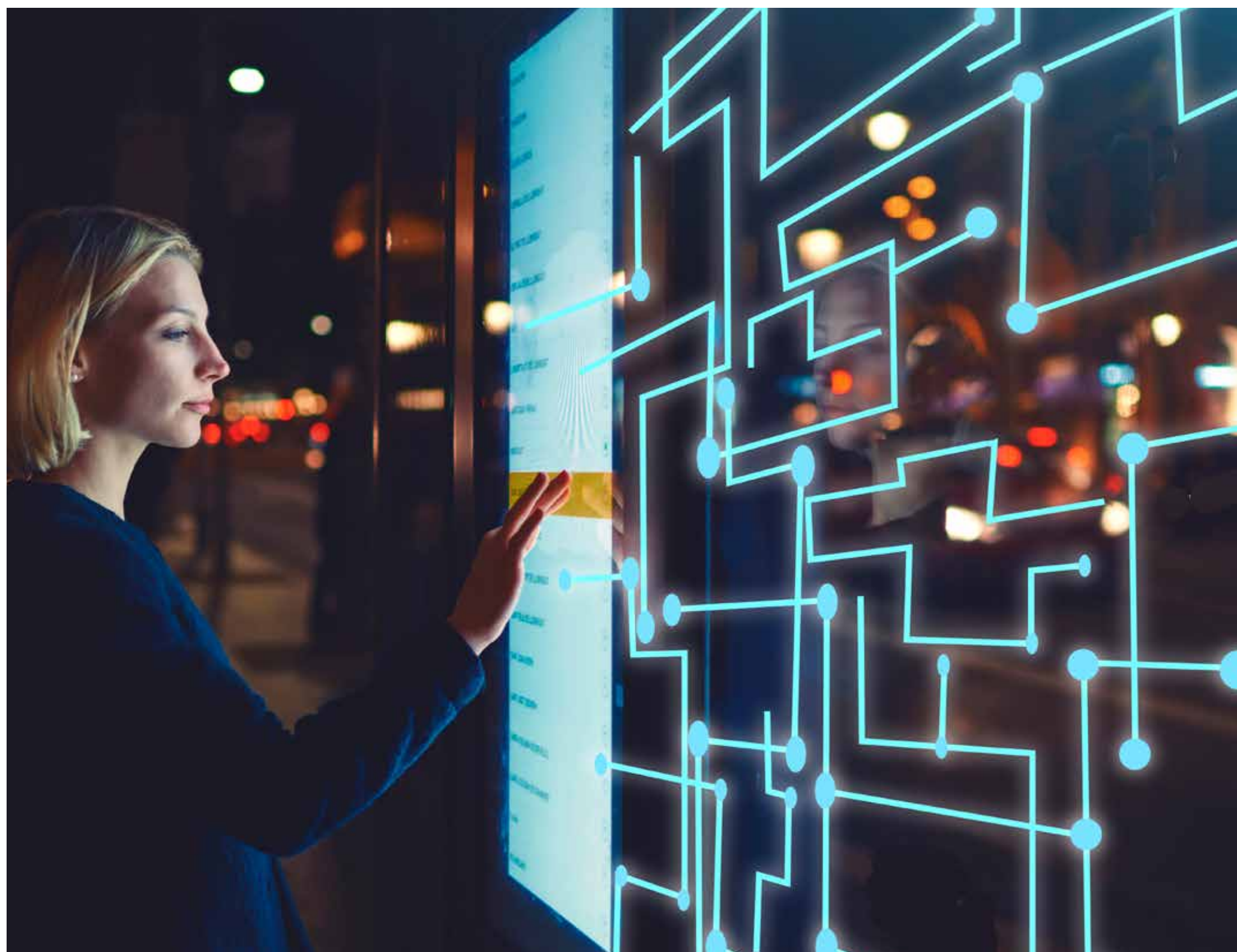
One UK study found that R&D tax incentives are worth far less to larger firms, and small and medium sized firms are the greatest beneficiaries of refundable tax credits, "particularly where all they are doing is R&D – they just have no access to cash."⁵² This sentiment is corroborated by the responses of biotech firm managers in the research that forms the basis of this report.

This same UK study also argued that while tax is not the only factor in decisions regarding where and if a firm should conduct R&D, it does make a difference, particularly to large multinational firms who can choose where they base their R&D facilities.⁵³ This claim is reiterated by Cochlear, the Australian biotechnology company that makes hearing devices, who claim that the R&D Tax Incentive "does not determine what we do but is a powerful influence on where we do it."⁵⁴

In a study that considered the impact R&D tax incentives have on the biotechnology industry in 14 EU nations, researchers found that generic fiscal incentives (such as the R&D Tax Incentive) had the best effect on R&D stimulation of all government policies. However, the same academics argued that biotech also requires more specific policies to support the industry that account for the peculiarities of the industry.⁵⁵

In short, R&D Tax Incentives work. They are generally successful in producing more R&D expenditure than would otherwise occur, which results in benefit spillovers to the economy and society. Just as importantly, most other OECD nations now provide tax incentives for R&D: for Australia to remain competitive, it is imperative we continue our Tax Incentive program.

As has been mentioned previously in this report, however, the Government has caused some uncertainty in the continuation of the R&D Tax Incentive in recent times. The next section discusses the effect uncertainty has on investment, and more specifically, if the uncertainty has had an impact on the biotechnology industry in Australia.



PART THREE: THE EFFECT OF UNCERTAINTY ON INVESTMENT

Investment is stifled under uncertainty

Following the Global Financial Crisis, academics have become increasingly interested in the effect uncertainty has on firm investment, due to the common presumption that uncertainty was responsible for delaying the economic recovery in the United States and elsewhere.

In general, uncertainty can be defined as a situation in which there is a lack of clarity about future events.⁵⁶ Usually uncertainty is resolved by time, meaning that in due course the outcome about which there was uncertainty will become known.⁵⁷ For firms, this usually equates to decision makers taking a 'wait-and-see' approach to investment, whereby investment decisions are withheld until the uncertainty is resolved.⁵⁸

More specifically, policy uncertainty – relating to uncertainty with a specific policy – can be defined as a situation in which there is an information vacuum regarding that policy. Frequent reviews and announcements by Government regarding a specific policy, as has been witnessed in Australia regarding the R&D Tax Incentive in recent years, can lead to such a situation.⁵⁹ This is because for firms, uncertainty about a tax rate creates uncertainty about the profitability of the investment, thereby increasing the risk involved in investing under such circumstances.⁶⁰ In such instances, firms are likely to adopt a 'wait-and-see' approach to investment, until the uncertainty eventually becomes resolved.⁶¹

Even moderate amounts of policy uncertainty can act as a "hefty tax on investment, and that otherwise sensible reforms may prove damaging if they induce doubts as to their permanence."⁶²

In short, Ben Bernanke, the former US Federal Reserve Chair wrote in 1980, "uncertainty is seen to retard investment, independently of considerations of risk or expected return. Introduction of uncertainty can be associated with slack investment; resolution of uncertainty with an investment boom."⁶³

Continual uncertainty may not be easy to resolve

Some academics caution policymakers by reminding them that interpretation of policies and press releases issued by government is the pertinent factor as to whether firms will believe what the government states.⁶⁴

Stalling on major policy issues may also have substantial hidden costs, and even lead to a cyclical downturn as policies generally affect all firms.⁶⁵ In a study of uncertainty after the Global Financial Crisis, the researchers caution policymakers that delays in action or policies that increase the level of uncertainty can be very damaging to the economy, as was witnessed when the US Congress failed to pass the bailout bill the first time in October 2008.⁶⁶

After decades of tinkering with the R&D Tax Incentive, and four reviews culminating in a reduction of the R&D Tax Incentive since the Coalition won government in 2013, firms may not believe the government if it were to guarantee the policy will be left alone from now on.

This study aims to understand how uncertainty has affected R&D investment within a specific industry that is heavily reliant on R&D. The remainder of this Part discusses the research and findings of this study.

Biotechnology firm managers were asked about their firm's use of the R&D Tax Incentive

In order to understand if the biotechnology industry has been affected by the Government's reviews and modifications to the R&D Tax Incentive, a survey of 42 biotech firm managers and senior decision makers was conducted. Biotechnology firms included in the study ranged in size from small, pre-revenue firms that are not publicly traded to large firms with market capitalisations in the hundreds of millions of dollars. Firms spanned a variety of sectors, from human therapeutics and medical devices to animal health and agricultural biotechnology.

The survey was available in three formats: a long online format, and a shorter phone/email questionnaire. Nine participants responded to the online survey, and 33 completed the phone or email questionnaire. Three longer interviews

were also conducted on the phone in order to gain a deeper understanding of how the R&D Tax Incentive is used within firms.

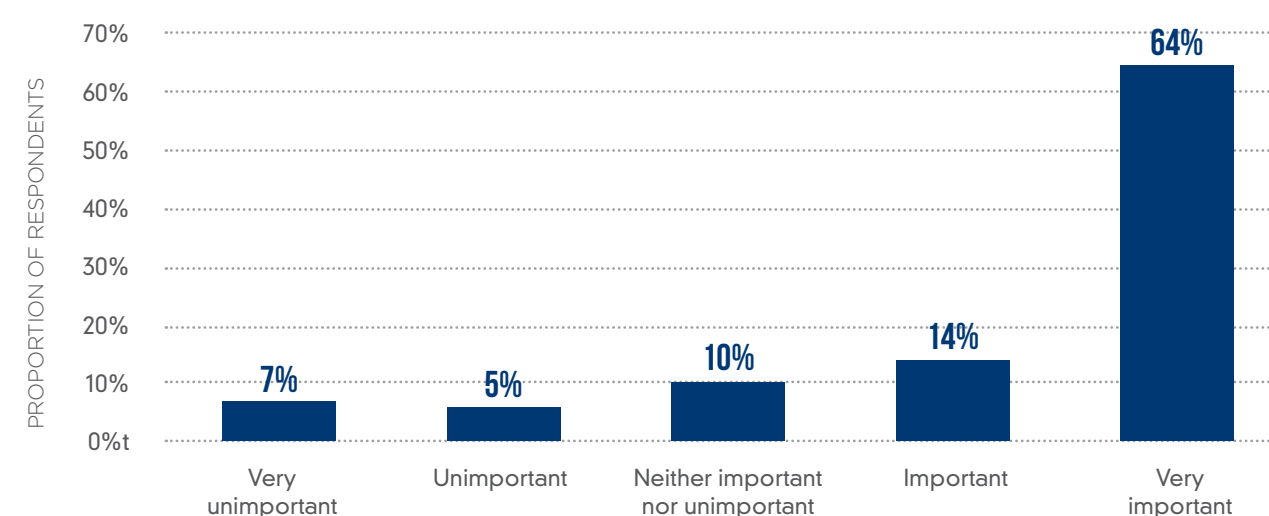
The following is a discussion of the major findings and themes from the study.

The R&D Tax Incentive is very important to the biotechnology industry in Australia

The first question aimed to determine the importance of the R&D Tax Incentive to the Australian biotechnology industry. The survey discovered that 78.57 per cent (33 out of 42) of respondents indicated that the policy was either important or very important to the decision for their firm to undertake research and development in Australia. Further, twenty-seven of those respondents indicated that the R&D Tax Incentive was very important (64.29 per cent).

FIGURE 3.1

The importance of the R&D Tax Incentive to a biotech firm's decision to invest in R&D in Australia



In their comments, respondents indicated that the policy was integral to budgeting and forward planning for projects and that the rebate component of the Incentive returned funds that were critical to their firm (7 respondents). Another six responses indicated that the R&D Tax Incentive keeps their firm's activities in Australia, or that they relocated to Australia because of the R&D Tax Incentive. Two respondents stated that their firms actively promote the R&D Tax Incentive to foreign investors and firms in order to attract investment to Australia.

FIGURE 3.2

How the R&D Tax Incentive is important to biotech firms



Other responses included that the R&D Tax Incentive allows firms to conduct the research they want to do (2 responses); the policy helps young companies (2 responses); and deals are done because of the policy (1 response). Two respondents indicated that the R&D Tax Incentive only forms one factor in their firm's consideration of undertaking R&D; and another two indicated that the R&D Tax Incentive had no impact on their firm's decision making. When asked to number the importance of the R&D Tax Incentive to their firm's decision to undertake R&D in Australia, just 5 respondents (12 per cent) indicated a 1 or a 2: either very unimportant or unimportant.

While there were some firms that indicated the R&D Tax Incentive had a limited impact on their firm's decision making processes regarding R&D, the majority of firms indicated that the R&D Tax Incentive plays a large and important

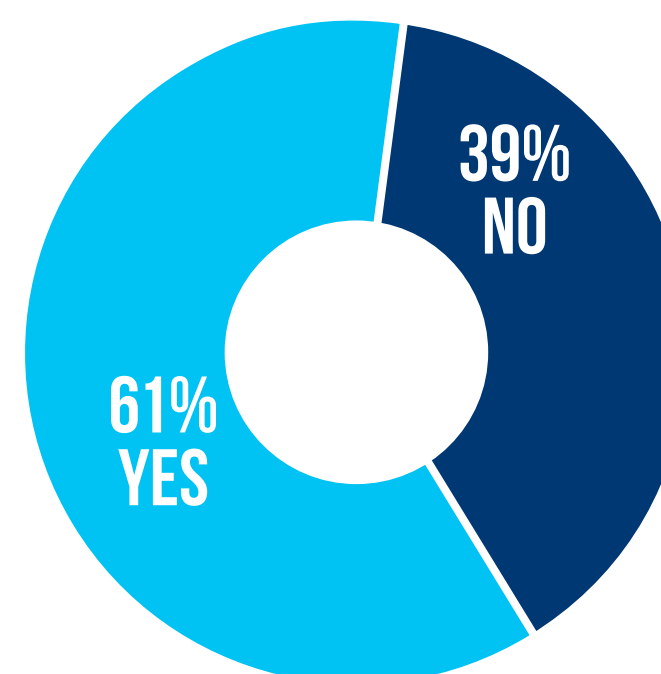
role within their firm's decision and capacity to conduct R&D in Australia. As such, it appears that this policy is extremely important to the biotechnology industry.

Biotechnology firm managers feel uncertain about the future of the R&D Tax Incentive

The shorter phone and email questionnaire asked a specific question regarding whether recent events – including the 1.5 per cent cut to the Incentive and the release of the R&D Tax Incentive Review by the Government – had led them or their firm to feel uncertain about the future of the policy. Of the 33 respondents to the shorter questionnaire, 20 (60.61 per cent) indicated 'yes'.

FIGURE 3.3

Have recent events made you feel uncertain about the future of the R&D Tax Incentive?



Seven respondents stated their concern for the future of the policy given the recent changes. Comments included:

- “I guess this reduction has been flagged for quite some time. I'm most concerned that this is not the end.”
- “Anything that changes a good policy is detrimental to the industry as a whole. Includes overseas companies and investors – when they see policy changes on the run, they think there's too much risk on the run. How long will this policy be in place?”
- “Review and proposed change in important policies always creates uncertainty about what other changes might be proposed.”

Other participants indicated they felt uncertain because the recent or proposed changes will affect how much their company can claim from the R&D Tax Incentive (4 respondents); and a

few participants further commented that the proposed changes (in the Review) will have the effect of forcing their firm to relocate R&D activities (2 responses); slow down product development (1); raise more capital (1); or conduct fewer R&D activities (1).

However, a significant number of respondents (13) indicated that the recent events did not cause them to feel uncertain about the future of the R&D Tax Incentive. Respondents indicated that the R&D Tax Incentive had minimal (2) or no impact (1) on their decisions to undertake R&D in Australia. Another indicated that the release of the review caused them to feel more certain about the policy and three respondents indicated that they acknowledge that the Government must review and will likely reduce the policy, and were accepting of that.

In sum, a majority of respondents indicated the recent changes caused them to feel

uncertain about the future of the policy, and were concerned with the overall impact more changes might have on their respective firms. This finding is consistent with the caution given to policymakers by some academics that after a period of change, investors and firms may be unlikely to believe the Government when it promises a period of stability.⁶⁷

Some firms have already modified their R&D investment strategy as a result of uncertainty

Two questions were dedicated to understanding the impact recent events may have already had or will have on research and development investment in Australian biotechnology firms. In the phone survey, question 3 asked participants if their firm had already changed their R&D investment strategy as a result of the recent activity surrounding the R&D Tax Incentive. Question 4 asked if participants thought their firm would change their R&D investment strategy if the Government were to further modify the R&D Tax Incentive.

In response to question 3, seven participants (16.67 per cent) said that their firm had changed its R&D investment strategy as a result of either the 1.5 per cent cut to the Incentive, or as a result of the recent Review's recommendations. A significant number of respondents (5) who answered yes to this question stated that the recent events have led to their firm undertaking fewer R&D activities. Other stated effects were that the changes will lead to their firm slowing down product development (2), reducing employees (2), relocating activities (1), and raising more capital (1). Some comments indicated that the "lack of policy stability is problematic" to their firm (2 respondents); and in an international marketplace, the policy changes made it difficult to "communicate the relative competitive advantages of conducting research in Australia versus other equivalent jurisdictions" (2 respondents). One respondent stated that the change and Review's recommendations are "not in line with current political message(s). Consistent and meaningful R&D is a long term

strategy. Stable, clear and bipartisan policy is critical... (the change/Review recommendations) sends a very bad signal to companies and the whole marketplace."

However, the majority indicated that their firm had not changed investment strategies (78.57 per cent), with some participants stating they were unsure. Many participants (10) stated "not yet" in response to this question. One respondent was not aware of the recent events discussed; three respondents indicated that they could not change their R&D investment due to a commitment to their long term plan; and one respondent stated that the R&D Tax Incentive was just one of many factors that played into the decision making process. As one participant explained, "you develop long term plans. Most biotechs have long term plans and have to stick with it."

One participant from a service provider stated "while we are unable to take advantage of the R&D Tax Incentive due to our ownership structure, our clients, if eligible, can claim their expenditure with us as eligible research. We are not aware of any changes in location of investment or strategy as a result of the change or the uncertainty."

Another respondent stated that while their firm had not yet made any changes to strategy or operations, they "are reviewing it. We may well take more R&D offshore."

As a whole, it was clear that the majority of firms in this study had not made any changes to their investment strategies. However, there was keen interest in the Review and awareness of the recent change, and it appears that many firms were taking a 'wait-and-see' approach to their R&D investments.⁶⁸

Further uncertainty will result in reduced investment and a reduction in Australia's competitiveness

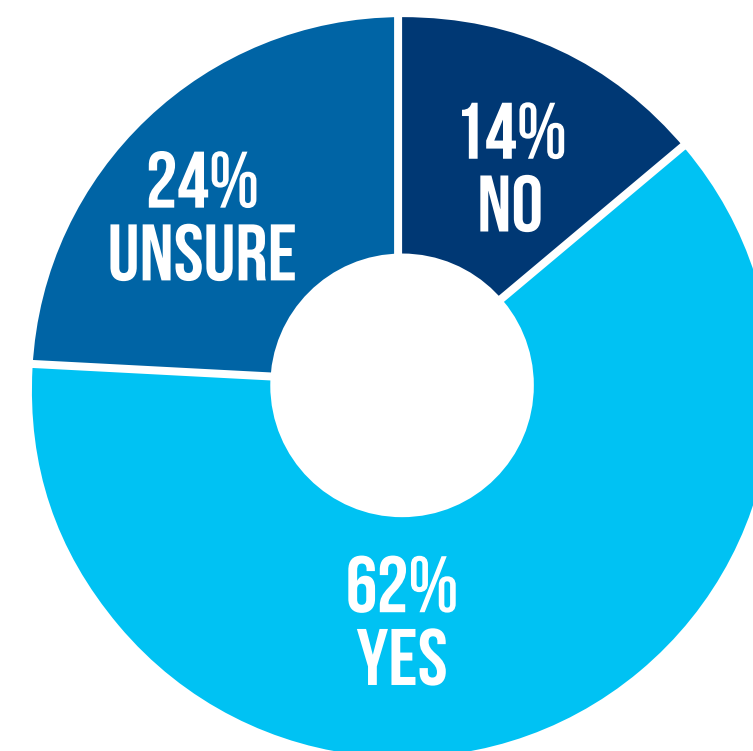
Question 4 asked a more open-ended question regarding whether further modifications to the R&D Tax Incentive would affect firms' R&D

investment strategies. The type or extent of modification was not specified in the question. As such, 12 respondents stated that their firm's response would "depend" on the extent of the change. Of the 42 respondents, 26 (61.90 per

cent) thought that their firm would likely change investment strategies if another modification of the policy took place. A further 10 respondents (23.81 per cent) said they were unsure.

FIGURE 3.4

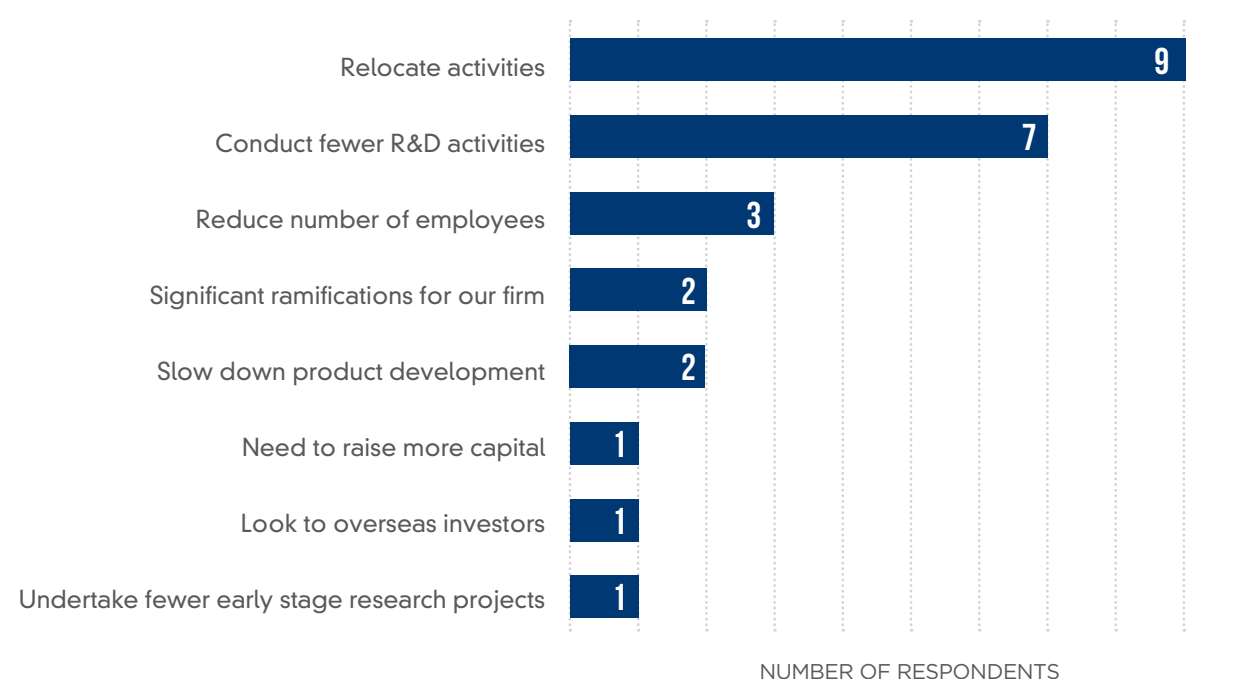
If the Government were to further modify the R&D Tax Incentive, would your firm change its R&D investment strategy?



In their comments, participants said that the most likely effects of further modification of the policy would be to relocate R&D activities (9 respondents), to reduce the extent of R&D activities (7 respondents), or to reduce the number of employees in Australia (3 respondents). One respondent said a further change "would make all projects less viable. We want to do all the R&D in Australia, a reduction (in the Incentive or rebate) would send a large part of it offshore. A discontinuation of it would force us to move the majority and most likely all of it overseas, this is not something we want at all."

FIGURE 3.5

The likely effects of further policy modification of the R&D Tax Incentive for biotech firms



Another participant said “we currently proactively look to see if there are viable alternatives available in Australia (in terms of service providers). We would probably stop doing that.”

A couple of respondents indicated that further changes would lead to an increase in risk in investing in Australia, and that it would be a signal to the industry that “Australian policy is unreliable.”

Some respondents (5) indicated a monetary figure for the impact further changes will have on their firm’s Australian R&D investment. Answers ranged between \$300,000 to \$10 million dollars per year. One respondent said: “the tinkering or further modification would substantially increase risk of innovation and would certainly force us, at the very least, to consider other locations for at least part of our R&D. We are currently

investigating approximately \$6 million in further agbiotech (agricultural biotechnology) above our current \$10 million project.”

Another participant explained, “we average about \$300,000 per annum return from the R&D Tax Incentive scheme so any reduction will result in a commensurate decline in our R&D investment strategy.”

However, four respondents said that the R&D Tax Incentive had no impact on their investment decisions: “It would make our lives much harder, but we would not change our business because of the system.” “We would have to review it, but in reality, no, we will still do what we do.” “The tax incentive is purely that. If we are going to take on a project, we want to make money back. It’s as simple as that.”

One respondent said that the issue is not necessarily in a reduction in the R&D Tax



Incentive, but in the problem of obtaining investment funding in Australia. Access to capital was a common problem highlighted by survey participants. A recent report by The McKell Institute entitled *BioSavvy: How Australia can build a stronger biotechnology industry*, also found the problem of capital access an inhibitor to the growth of Australian biotech. The rebate component of the R&D Tax Incentive for pre-revenue firms is an important mechanism by which small firms can access guaranteed funds to continue R&D activities.⁶⁹

Overwhelmingly, participants indicated that there would be an impact on their firm and the biotechnology industry in Australia if the Government were to further modify the R&D Tax Incentive – especially if that modification resulted in firms being able to claim less back from the scheme. While some respondents indicated the policy had little or no impact on firm decisions, most indicated the opposite, with some participants simply stating, “we need it.”

The most interesting finding from this part of the research is that although many biotechnology firms will survive if the R&D Tax Incentive were to be modified or abolished, the impact will be felt most by service providers - such as contract research organisations (CROs) - if biotech firms move offshore to more supportive economies. Australian CROs and other service providers also provide services to foreign firms. One industry executive told the author that a CRO he is involved with actively advertises the existence of the R&D Tax Incentive to foreign firms in order to attract investment to Australia. Without the Incentive, that CRO would likely not obtain as much foreign investment.



Further, a few firm managers made the comment that the R&D Tax Incentive was the only factor keeping their firm in Australia: other factors such as the cost of labour and the tyranny of Australia's geographical distance make Australia a relatively disadvantageous place to base biotech operations.

In sum, this component of the research found that further modifications to the R&D Tax Incentive will likely have a significant negative effect on the biotechnology industry and associated service providers in Australia. Policy uncertainty has been caused by "tinkering" with the R&D Tax Incentive, and although the majority of firms are adopting a 'wait and see' approach to their investment, they are watching the developments closely and making plans accordingly.

The following and final section discusses the main themes discerned from the open comment question asked on both forms of the survey.

The R&D Tax Incentive is a great policy and the biotech industry needs it

The final question in all forms of the survey asked an open-ended question of participants: "Do you have any other comments to make about the R&D Tax Incentive?" Half of the respondents (21) to the survey prefaced their comments about the policy with the sentiment that the R&D Tax Incentive is a positive policy of which they are appreciative. The following is a summary of the main themes discerned from the respondents' answers.

Australian biotechs rely on the R&D Tax Incentive to do essential research and development

Many biotechnology firms are born out of promising research that can be developed into products to benefit the environment, animal health, human health, or industrial processes. As such, most young biotech firms are pre-revenue for the first years of their life, and spend a significant amount of money during these years to progress the innovation through the development pipeline.

Access to capital to assist the pipeline progression is a serious problem in biotech. This is because Australia's venture capital system is still quite young and risk adverse, as well because biotech innovations are inherently risky, particularly in the sector of human health.⁷⁰

"The Incentive has had an immeasurable impact on the biotechnology sector, it provides some certainty around a company's cash position."

As such, the rebate component of the R&D Tax Incentive provides critical support for many young firms through the twin 'valleys of death' of funding. As one firm manager stated, "the R&D incentive scheme is the best government support (in recent times) for our start-up company. Without it we would be dead in the water."

The R&D Tax Incentive plays an important role in firms' planning

The rebate component of the R&D Tax Incentive provides biotech firms with a reliable stream of capital and as such, plays an important role within firms' planning. Seven respondents explicitly stated this. As one respondent revealed, "We need every cent we can get to help us to continue with our R&D."

"For us it has been a lifeline for an Australian start up in the agbiotech space that is surrounded by large multinationals, and it has given us a real opportunity to commercialise local innovations to benefit our bioeconomy, rural development and the environment, so we are enthusiastic supporters of the Incentive."

Compared to other forms of Government funding, the R&D Tax Incentive is "a heck of a lot easier than trying to dance through hoops to get other grants." This sentiment is corroborated by the discussion in Part Two of this report about the efficacy and preference for simple tax incentives.

Another respondent claimed the access to capital through the rebate allowed their firm to progress an innovation faster through the development pipeline:

"We are very grateful for the financial assistance this program and others have provided, which has enabled us to complete the initial R&D and get products to market (globally) in a very short time frame for this type of industry (biotechnology), which usually takes about 10 years. Because of this program, for us it was 6 years."

Proposed changes will affect Australia's competitiveness

Some respondents told the author that the R&D Tax Incentive is a primary consideration for their firm to be based in Australia. One firm manager said that it was the reason he decided to relocate his firm in Australia.

While Australia has a high quality of living and an educated workforce, our geographical distance from the world's largest markets present as a significant obstacle to many biotech firms, particularly in the space of human health. Additionally, Australia's high quality of living comes with high wages and a high cost of doing business in Australia. As such, the R&D Tax Incentive is one of the policies that helps to mitigate some of the disadvantages of being based in Australia.

One respondent summed up the problem succinctly:

"While cost isn't a primary consideration, it is a factor in our decision making. The high cost of conducting research in Australia, as well as the geographic disadvantages in terms of easy engagement with international colleagues, means that it's important to have as many positive differentiators as possible - which includes access to mechanisms to de-risk the investment outlay."

The R&D Tax Incentive attracts investment to Australia

The R&D Tax Incentive can be claimed for research conducted in Australia, even for firms that are foreign owned (subject to eligibility criteria). As such, the R&D Tax Incentive attracts foreign investment to Australia. One interview respondent, representing a contract research organisation, stated that they "actively promote the R&D Tax Incentive to overseas companies and investors."

Biotechnology is now an industry that is increasingly global: many firms can decide where to base research, manufacturing and administrative operations (sometimes in three different jurisdictions, as one respondent revealed to the author). The R&D Tax Incentive, with its generous cash rebate, makes Australia one of the most competitive nations in the world to conduct research.

"A lot of our R&D activities could be undertaken offshore, but we do try to source Australian providers wherever possible, because of the R&D Tax Incentive."

A few respondents reiterated sentiments from earlier questions, in stating that further modifications would lead to their firm conducting fewer R&D activities or to their firm moving operations offshore: “for our business it has literally meant we have kept these jobs in Australia as opposed to moving offshore.” As another participant explained, “we want to create employment in Australia, but we are intrinsically working within a global market.”

.....
“The Incentive was critical to our decision to relocate to Australia. We have factored it into our clinical trials programme. If it was significantly changed for the worse it would negatively impact investor confidence right at the time we would need to raise additional capital to cover any shortfall. Also because of the Incentive we have been actively promoting the Australian clinical trial industry to several offshore biotech companies. Adverse changes in policy would send a clear signal that Australian policy cannot be trusted in the medium term.”

The proposed changes to the refundable component will negatively affect the biotech industry

Many participants were also concerned that the proposed changes in the Review would lead to a significantly negative impact on Australian biotech. Five respondents thought that the recommendations, particularly recommendation 3, which recommends a cap to the rebate allowable for pre-revenue firms to \$2 million per year, would reduce Australia’s competitiveness. Four said the proposed changes will negatively affect Australian biotech: “they’re naïve if they don’t think it won’t make a big impact on decisions. It will affect jobs and suppliers. I don’t think the country will be a winner from these changes.”

The problem, a few respondents pointed out, is that it is very difficult to get access to capital in Australia. Biotechnology’s risk profile is too high for traditional finance, and our venture capital sector is small and underdeveloped. The recent McKell Institute report *BioSavvy: How Australia can build a stronger biotechnology industry* discusses the shortfalls of Australian venture capital:

“Australian VC more closely resembles the banking system than the venture capital system in the US. The decision making processes and risk appetite also correspond more closely with banks than with that of entrepreneurs. Australian venture capitalists

are as a result more conservative, investing mainly in the later stages of development, once a company has displayed a track record of growth; and investing vastly smaller tranches than in the US, with a focus on financials rather than on the technology and the teams behind the technology.”⁷¹

For small biotech firms in Australia, the rebate component of the R&D Tax Incentive assists through the ‘valley of death’ in funding that characterises the pre-clinical phase of research (for instance, in relation to the human therapeutics sector). This phase is R&D intensive, expensive and inherently risky. As one firm manager said, the R&D Tax Incentive rebate is “fundamental because it’s the key plank that underpins commercialisation activities such as mine. There’s not enough private capital in Australia, so without it, we’d be stuffed.”

The rebate gives small firms up to 43.5 per cent of R&D expenditure back as a cash refund at the end of the financial year, representing a significant reduction in the cost of conducting R&D and providing small firms with some certainty around cashflows. However, the recommendation to cap the rebate to \$2 million per year will affect biotechnology firms, particularly as the cost of product development often runs into the hundreds of millions over a 5-10 year period. As one respondent said, “If you want to increase clinical trials in Australia, and the Government has

indicated it does, then you wouldn’t place a \$2 million cap on claims per year.”

Another explained many biotech firms’ predicament: “Our company is solely focused on the development of new products and relies heavily on the Tax Incentive to fund this. It is difficult to engage new financial partners until a technology is close to reaching pre-production stage.”

In general, there was a sentiment of exasperation from many biotech firm managers after the Review’s release:

.....
“I think that the politicians need to take a course in economics and how a lot of this activity over time can drive growth over the longer term. Their necessity to get re-elected means they have no real long term plans and no backbone to stand up for long term growth. It’s very hard for young and struggling firms out there. It’s very difficult to get funding in this country, and we’re very reliant on things like this. If they start tinkering around it will kill the industry.”

The R&D Tax Incentive could be better

Some respondents qualified their comments regarding the rebate cap with the acknowledgement of the wider political landscape and understanding of the budgetary constraints the government is currently working within. One manager from a larger firm said that he understood “the other side of that argument, that it’s important to fund early startups with cash refunds, but there should be a limit on that.”

However, three respondents said the current R&D Tax Incentive policy needs improvement, with another two stating that the eligibility criteria for claiming the incentive or rebate should be tightened. “There’s a way the government can save millions of dollars but make sure it’s better targeted. Don’t target the real innovators for these cuts. It’s a really good program.”

Some suggested that the R&D Tax Incentive was being exploited by other industries. The “eligibility criteria needs to be tightened to target the R&D that the government wants to support – there’s lots of projects in other industries that will go ahead anyway and so the program is not funding additional R&D in these instances.”

Government rhetoric and action do not match

Seven respondents argued that the Government’s actions regarding the R&D Tax Incentive were incompatible with the rhetoric of encouraging innovation through research and development. “It’s become a political football. The industry is at a growth stage, (yet the proposed changes) go against the grain of what the government has been saying regarding innovation.”

One respondent was quite blunt: “The hypocrisy – there’s all talk and no action from the Government. It’s only the little guys from whom we’re penny pinching” (regarding recommendation 3 to cap the rebate).

“I can’t believe why you would play with such an important scheme. This completely lacks vision! I interact with the biotech industry in Australia, and I know there’s enormous anger in the sector. I’m just gobsmacked. There’s all this rhetoric around advancing Australia’s innovation and technology and then this.”

One manager made the comparison between the UK and Australia, arguing that the UK appears to have a concerted strategy to increase innovation. “The UK is the most competitive nation now, because it doesn’t matter where the IP is held, and they also have the patent box policy. They also give approval up front (for projects) for 2 years, so you get the sense that innovation is a really important government agenda item, whereas in Australia that isn’t so much the case.”

“I’d counsel the government to think very carefully of flow on effects. Same when you operate a commercial enterprise – there’s cost versus cost effectiveness. Long term growth is being played against short term penny pinching. From my perspective, the R&D Tax Incentive has been very beneficial for our company – it’s made our dollar go further. If they start chopping and changing, we don’t have the maturity in the ecosystem in Australia to support the industry without it. On one hand the rhetoric is we want to grow the biotech industry, on the other hand there is the Review and its recommendations that will be a serious impediment to the industry.”

Biotechnology is likely misunderstood by politicians

A recurring theme emerged throughout the course of this research in that there’s a perception amongst the industry that politicians do not understand the realities of biotechnology research and development. One respondent lamented “biotechnology is only a narrow and very misunderstood sector of the medical industry. I suspect the policymakers have little or no idea what the biotechnology industry is.”

Certainty is needed for biotech

Two respondents stated that the biotech industry requires certainty with this policy, specifically asking for a commitment from the government to leave the policy as is for at least the course of a project, or 5-8 years. As one respondent said, “I’d like the tax rules to last the life of a project – and development can take 5-8 years. If the rules of the game change, this is a huge consideration for our company...there’s no way I can plan a financial future. It’s like superannuation – I can’t make financial decisions because I don’t know what the rules will be in 10 or 20 years’ time.” Further, one respondent succinctly answered, “Leave them alone!”

Finally, some respondents offered their advice to Government moving forward and asked for “long term bipartisan commitment to the program”; to “maintain the level of incentive, equitable access for all firms (flat rate of incentive), and simplified processing”; and “the policy needs to be clear and stable. The policy needs to be long term. Any changes downwards should not be an immediate cut rather than a timed cut so that project cycles which can be in excess of four or five years can be planned.”

“It is an extraordinarily positive, productive investment in Australian R&D and future biotechnology capabilities. The potential payback from this will go on for decades. I caution anybody to be very careful about making any changes; having worked in pharma, there was never a certainty about the policy (not even 5 years certainty) and that level of uncertainty undermined decisions – what I’d ask is yes – you can’t have government incentives ad infinitum – but at least commit to a 5 year plan. If you’re going to change, make it and then leave it. Uncertainty undermines investment.”



The Government must commit to policy stability for the R&D Tax Incentive to have the greatest impact

In 1995, the Industry Commission (now named the Productivity Commission) concurred with stakeholders that “the effectiveness of the tax concession in inducing R&D may have been weakened by the uncertainty surrounding its continuity and level.”⁷²

In addition, the issues paper for the Government’s *Review of the R&D Tax Incentive* was accompanied by a summary of previous stakeholder feedback regarding uncertainty surrounding the R&D Tax Incentive. Twelve submissions to the 2014 Senate Inquiry into Australia’s Innovation System and ten submissions to the Tax White Paper *Re:Think* argued that changes to the R&D Tax Incentive cause uncertainty and undermine business and investor confidence. Those submissions and others in the 2015 consultation paper *Vision for a Science Nation – Responding to Science, Technology, Engineering and Mathematics: Australia’s Future*, also called for continuation of and stability in the programme.⁷³

Businesses need certainty from government. The biotechnology industry, with peculiarities like the high cost of product development, the risky nature of clinical trials, and long development pipelines, need certainty from government even more. If the Government wishes to prioritise innovation and to build a strong biotechnology industry, then it must commit to the R&D Tax Incentive policy and guarantee some stability for the program. This research has revealed that further modifications will negatively impact investor and business confidence, and likely lead to firms moving offshore, conducting fewer R&D activities, and being less competitive.



CONCLUSION

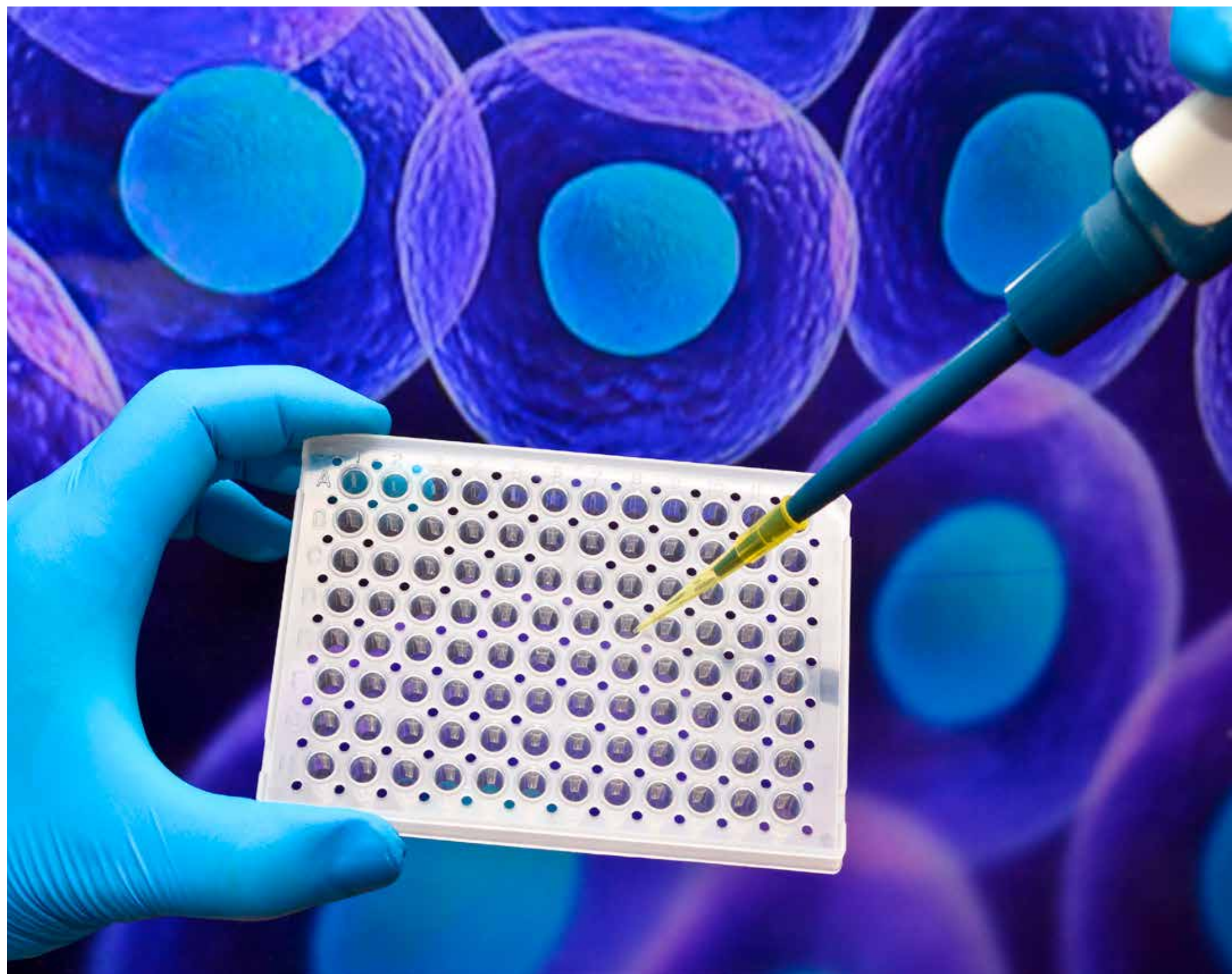
The Australian biotechnology industry uses the R&D Tax Incentive widely and firm managers told the author that their firm is based in Australia because of the existence of this policy. It was clear from the course of this research that while only a small number of firms have modified their R&D strategies as a result of recent activities regarding the R&D Tax Incentive, most firms are adopting a 'wait and see' approach to the uncertainty and will modify their strategies when the Government decides on which recommendations to adopt from the *R&D Tax Incentive Review*, due to be announced in early 2017.

An adverse response to the outcome of the R&D Tax Incentive Review could result in many Australian biotechnology firms moving offshore to more supportive markets; to Australia being less competitive and attracting less foreign investment; to Australian biotech firms struggling to gain sufficient funding for R&D activities, and hence moving more slowly through the product development pipeline; or to firms conducting fewer R&D activities overall.

Most importantly, this research finds that the biotechnology industry desperately requires certainty from the Government for the continuation of the R&D Tax Incentive if it is to do its job properly, and Australia is to truly adopt an innovative culture in order to drive many more years of uninterrupted economic growth.

The R&D Tax Incentive is an integral component of Australia's innovation policy and is the key policy that makes Australia an attractive investment for foreign entities. If the Government is serious about fostering innovation in the private sector, then it will take heed of the biotechnology industry's concerns about the Review's recommendations, and following the announcement of which of the Review's recommendations it will adopt, it will leave this policy alone for an extended period.

For if we are to truly become an innovation nation, we must recognise how important the R&D Tax Incentive is to Australia.



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