

FINANCIAL SYSTEM INQUIRY

Second Round Submission-Promoting
Innovation

August 2014

**RESEARCH
AUSTRALIA**

AN ALLIANCE FOR DISCOVERIES IN HEALTH



ABOUT RESEARCH AUSTRALIA

Research Australia is an alliance of 160 members and supporters advocating for health and medical research in Australia. Research Australia's activities are funded by its members, donors and supporters from leading research organisations, academic institutions, philanthropy, community special interest groups, peak industry bodies, biotechnology and pharmaceutical companies, small businesses and corporate Australia. It reflects the views of its diverse membership and represents the interests of the broader community.

Research Australia's mission is to make health and medical research a higher priority for the nation. We have four goals that support this mission:

- A society that is well informed and values the benefits of health and medical research.
- Greater investment in health and medical research from all sources.
- Ensure Australia captures the benefits of health and medical research.
- Promote Australia's global position in health and medical research.

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FINANCIAL SYSTEM INQUIRY

SECOND ROUND SUBMISSION- PROMOTING INNOVATION

INTRODUCTION

The focus of Research Australia's submission is the role of Australia's financial system in supporting innovation. Innovation in the private sector, leading to the development of new products and services; and innovation in the public sector, leading to changes in practice which improve healthcare, increase productivity and improve efficiency.

Government regulation of, and intervention in, the financial system needs to be considered in the context of the Government's broader economic goals and strategies. Australian governments, as is the case globally, are key providers of funding for health and medical research. This public funding is provided because of the promise of health and medical research to provide improved health outcomes for Australia's (and the world's) populations. This promise is only kept if the research discoveries lead to new and improved products and practices. The application of this new knowledge requires innovation, and much of this is delivered through the private sector.

Australia's financial system has a key role to play in supporting this innovation, and yet the evidence is that it is not doing this as effectively as it could. This submission addresses this issue and proposes some measures which would better link the financial system to innovative businesses and improve support for innovation. It also identifies an opportunity for the financial system to play a greater role in supporting private investment in innovation in the public health sector through social impact bonds.

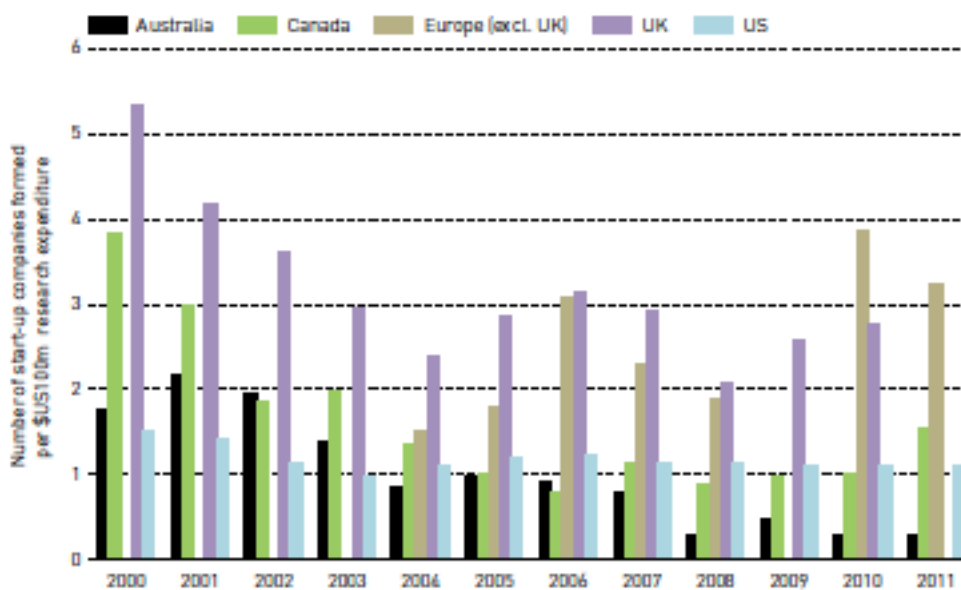
Philanthropy is a key provider of funding for Australian health and medical research. Research Australia is privy to the Round 2 submission made by Philanthropy Australia and endorses that submission and its recommendations.

Research Australia is also acutely aware of the role of venture capital in developing innovative companies, and that these sectors are relatively underdeveloped in the Australian financial system. While professing no expertise in this area, Research Australia urges the Inquiry to give close consideration to measures to support the further development of venture capital within the Australian financial system.

THE INNOVATION ENVIRONMENT IN AUSTRALIA

Australia has a strong and vibrant health and medical research sector and a tradition of world class scientific research; however our history of innovation in commercialising the discoveries of our research is less satisfactory by world standards. *The National Survey of Research Commercialisation 2010 and 2011* reported that there were only 0.3 Australian start up companies formed for every USD100 million spent on research in Australia, compared to 1.1 in the USA, 1.6 in Canada, 2.8 in the UK, and 3.2 in Europe¹. And this has been the trend for several years as the following graph illustrates.²

Figure 21: International comparison of start-up companies formed per \$US100m research expenditure, 2000-11



At the outset of the Inquiry, then Assistant Treasurer Senator Sinodinos said that the Inquiry could look to identify ‘gaps in the capital market for innovation’. He identified three Australian success stories: CSL, Cochlear Limited and Resmed, all in the health sector, and indicated that he wanted more of them³.

The path to success of these three companies is instructive. CSL was initially an Australian Government owned enterprise, created in 1916, before it was incorporated in 1991 and listed on the ASX in 1994⁴. Cochlear Limited took nearly 25 years from the commencement of research to its listing on the Australian stock exchange. Its initial research was supported by philanthropy and the Australian Government was a significant investor in the company in the 1980’s.⁵

Resmed is based on research initiated at the University of Sydney in the early 1980’s. It initially received funds from the US health care company Baxter which later withdrew as an investor, and was formed as a company in 1989, approximately six years before listing on NASDAQ and a decade before it listed on the ASX.

¹ Australian Government, *The National Survey of Research Commercialisation 2010 and 2011*, p.36

² *Ibid*, p.39

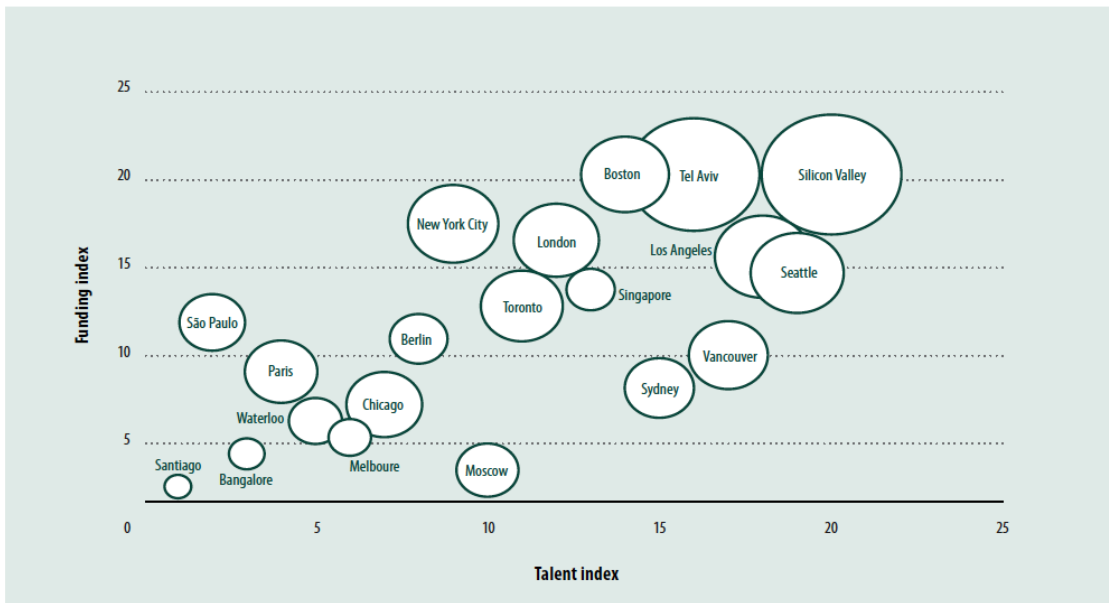
³ Sinodinos says government keen to unlock funds for innovation, *The Australian*, 27 November 2013

⁴ <http://www.csl.com.au/about/history.htm>

⁵ <http://www.cochlear.com/wps/wcm/connect/au/about/company-information/history/history>

The above cases illustrate that the most successful Australian innovators have not always relied on the Australian financial system to fund their success. In the 2013 Global Innovation Index, Australia's innovation 'ecosystem' was ranked 19th out of the world's 45 high income economies⁶. And while access to capital is only one factor which determines a nation's innovative capacity it is an important one, and there are indications that a lack of ready access to capital and finance is one of the factors restricting Australian innovation. The below table highlights the relatively low availability of risk capital to support innovative Australian start up companies.⁷

Figure 5: Top world start-up ecosystems, 2012



Source: Author's elaboration, based on Telefónica Digital and Startup Genome, 2012.

Note: The bubble size indicates the positioning of each territory in the total ranking, where Silicon Valley ranks at the top (i.e., 20) and Santiago at the bottom (i.e., 1). In each index, Silicon Valley is assumed to be the reference and it ranks at the top (i.e., it scores 20). The funding index measures the availability of risk capital in each start-up ecosystem, while the talent index ranks the skills of the start-up founders in each territory, taking into account different variables including age, education, work experience, and industry domain expertise, among other factors.

More recently, the Australian Bureau of Statistics has reported that a lack of funds was a barrier for innovation for 20% of Australian businesses.⁸

Improving the capacity of the financial system to support innovation is critical to Australia's future success as a productive, knowledge intensive economy with a sophisticated high-value manufacturing sector.

⁶ Cornell University, INSEAD, and WIPO (2013): The Global Innovation Index 2013: The Local Dynamics of Innovation, Geneva, Ithaca, and Fontainebleau, p.76

⁷ Ibid, p.76

⁸ ABS, Cat. No. 8158.0, *Innovation in Australian Business 2012-13*

INNOVATION AND THE FINANCIAL SYSTEM

Facilitating growth in the broader economy is an important function of the financial system, as is reflected in the first of the Inquiry's Terms of Reference. Innovation is globally recognised as the key to economic growth.

Innovation is thus essential if countries and firms are to recover from the economic downturn and thrive in today's highly competitive and connected global economy. It is a powerful engine for development and for addressing social and global challenges. And it holds the key, both in advanced and emerging economies, to employment generation and enhanced productivity growth through knowledge creation and its subsequent application and diffusion.⁹

Recognising the critical role of the financial system in supporting innovation should have two outcomes.

The first is that any proposed intervention by Government in the financial system should be assessed for its likely effect on the capacity of the financial system to support innovation. Interventions should be at minimum 'innovation neutral' and, where possible, 'innovation friendly'. And there are certainly instances in which innovation can benefit from policy measures proposed for different reasons. For example, reducing the emphasis on short-term returns and liquidity in the superannuation sector in favour of a longer term view has the scope to make investment in innovative companies more attractive to superannuation funds (see later discussion).

The second is that the role of the financial system needs to be considered in the context of the Government's broader support for innovation. The aim should be as much as possible to provide an integrated pathway of support for innovation from basic research through scientific proof of principle, commercial proof of concept and beyond, with a tapering of government support as private sector investment becomes more viable and necessary.

Research Australia has proposed a national 'whole of governments' innovation strategy which seeks to integrate a number of different factors in support of innovation including the financial system, financial regulation and taxation. The role of the financial system in such an innovation strategy is highlighted in italics in the paragraphs below.

An innovation strategy:

- Clearly articulate the benefits of increasing innovation in Australia. These include higher living standards, higher employment, more satisfying jobs and environmental sustainability.
- Describe the mechanisms by which innovation achieves these benefits, such as improving productivity, increasing efficiency, and creating new products and industries.
- *Identify the existing government policies and programs that influence innovation, and the departments and agencies that administer them. These include taxation policy, trade policy, financial regulation, corporate regulation, industrial relations, education policy, research funding, and industry support programs.* This identification exercise needs to be undertaken at all levels of government.
- Identify the nexus between:
 - publicly funded research, and
 - innovation and development programs to bridge the gap between research discovery and subsequent innovation.

⁹ OECD, Ministerial report on the OECD Innovation Strategy *Innovation to strengthen growth and address global and social challenges* Key Findings May 2010. P.3

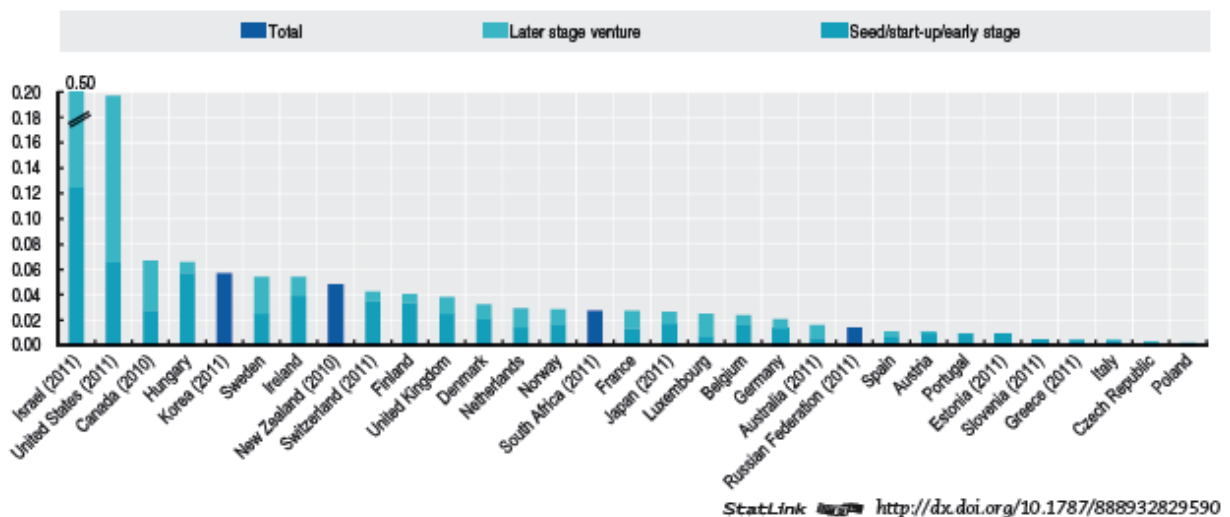
- Identify the measures against which:
 - Australian innovation generally, and
 - specific programs and policies, will be evaluated.
 These measures need to be weighted appropriately. For example, is an Australian publicly funded research organisation licensing a new discovery to a multinational for manufacture overseas as valuable as the IP being used by an existing Australian company that manufactures overseas, or a new start-up that establishes a manufacturing facility in Australia?
- Bring greater discipline and consistency to the evaluation of the effectiveness of existing programs and initiatives to support and promote innovation.
- Determine an appropriate ratio of public funding for research to funding for innovation support.
- *Ensure that the potential impact on innovation is considered when legislation and regulation is developed by Commonwealth, State and Territory governments.*

Research Australia submits that facilitating innovation should be recognised as a key function of the financial system and a guiding principle of Government regulation of, and intervention in, the financial system.

Venture Capital

Venture Capital is an important investor in innovative companies in Australia, but is underrepresented in the Australian Financial System when compared to financial systems globally, as is illustrated in the table below.¹⁰

Figure 6.9. **Venture capital investments as a percentage of GDP (US dollars)**
Percentage, 2012



While it is a relatively small component of Australia's financial system, venture capital has a disproportionate capacity to drive economic growth. Research Australia submits that measures to encourage and support the growth of venture capital in Australia should be given special consideration as part of the policy settings for the financial system. This includes the implications of the relative tax treatment of different investments.

¹⁰ OECD, *Entrepreneurship at a glance*, OECD Publishing, 2013

Case Study: Medical Research Commercialisation Fund

The Medical Research Commercialisation Fund (MRCF) illustrates how direct government intervention through the financial system and in partnership with venture capital can support the commercialisation of innovative medical research and encourage private sector investment.¹¹

The MRCF was established in 2007 as an innovative investment collaboration that invests in early stage development and commercialisation opportunities emanating from Australian medical research institutes and allied research hospitals. The MRCF's investors include Australian Super, Statewide Super, the Australian Government (under its IIF program), and the State Governments of Victoria, New South Wales, Western Australia and Queensland. The MRCF is managed by Brandon Capital Partners.

The MRCF is evidence both that investment in medical innovation is a mid to long term proposition and that it can be profitable. Established in 2007, it has only recently seen the first commercial success from its investment program with the purchase of Fibrotech by Shire PLC. MRCF invested around \$7.5 million for a return of around \$75 million plus further payments contingent on performance. With a stable of investments and a disciplined investment approach, the MRCF demonstrates that the investment in medical innovation in Australia can be a commercially viable proposition.

The Strategic Review of Health and Medical research, commissioned by the Australian Government in 2011, recommended the creation of a \$250 million 'Translational Biotech Fund' for early-stage biomedical commercialisation, to be funded by the Australian Government and the private sector on a one-to-one matching basis.¹² This would further expand the existing opportunities for private sector investment provided by the MRCF.

Research Australia recommends the Australian Government partner with venture capital investors to establish funds that support innovation in key economic sectors as a means of further developing our national venture capital capacity.

Superannuation savings

It is notable that the other investors in the MRCF with government are superannuation funds. This type of investment is, however, the exception rather than the rule. Research Australia notes the comments made in the interim report about the focus of the Australian superannuation system on short-term returns and the high levels of liquidity. While Research Australia does not have any comments in response to specific policy options, we are of the view that a longer term investment horizon would be good for the superannuation system and would support the diversification of asset portfolios, including into early stage commercialisation ventures.

Changes to these general policy settings can also be supported by more targeted interventions to facilitate investment in key areas. Developing a portfolio of investments is a key strategy for reducing investment risk, but potential investors are reluctant to commit a large amount of their capital to such a venture and are more willing to invest in an established fund which already has a portfolio of investments in different assets and at different stages of development. Direct investment by Government as 'foundation investor' in a

¹¹ www.mrcf.com.au

¹² Australian Government, *Final Report of the Strategic Review of Health and Medical Research*, February 2013, Recommendation 16.

venture capital fund can assist the fund to attract investment, as occurred with the Medical Research Commercialisation Fund.

PHILANTHROPY AND THE FINANCIAL SYSTEM

Philanthropy is an important source of funding for Australian health and medical research, providing an estimated \$400 million annually for health and medical research, and plays an even larger role in the not for profit sector and the economy more broadly. The philanthropic sector plays a unique role in Australian society and the economy, and special provision is made in the financial and taxation systems for the investment, management and disbursement of philanthropic funds.

Research Australia is privy to the Round 2 submission made by Philanthropy Australia and endorses that submission and its recommendations.

NON COMMERCIAL INNOVATION- A ROLE FOR PRIVATE SECTOR INVESTMENT AND THE CASE FOR SOCIAL IMPACT BONDS

The Financial System Inquiry's interim report makes specific reference to social impact bonds. Research Australia is of the view that there is a clear role for private sector investment through social impact bonds. The following comments, while referring specifically to the translation of health and medical research, have a broader application.

In the case of new drugs and devices there is often the potential for commercialisation of the research to create a product that can be sold. However, there are many interventions identified through research that are not suited to commercialisation because they do not have the potential to result in a product that can be manufactured and sold. Examples are improvements in treatment and diagnosis protocols, new applications for existing generic drugs, and public health initiatives designed to prevent or reduce disease. These are public goods, and the normal incentives for commercial investment do not exist.

While research may have demonstrated the benefits of the intervention in a controlled environment, achieving these benefits in a complex real world environment requires further work. This includes developing and implementing strategies to overcome resistance to change; integration of the intervention into existing systems, workflows and organisational structures; and providing appropriate training and education.

This work goes beyond the scope of most research, and typically requires a clinical trial or pilot program to be undertaken in a clinical setting with the joint involvement of clinical staff and researchers. There is currently a gap in funding for such trials/pilots, and Social Impact Bonds have the potential to fund this gap in some cases.

Compatibility of new health interventions with the Social Impact Bond model

To be suitable for funding via a social impact bond an intervention needs to provide a potential financial benefit. Many new interventions arising from research have the potential to improve patient management, reduce adverse events and readmissions, and speed recovery. In improving the safety and quality of healthcare many new interventions lead to direct cost savings and efficiencies.

For example, a new treatment protocol that improves recovery from a specific medical condition will often result in either shorter bed stays or reduced readmissions. Programs that prevent diseases and/or promote earlier diagnosis similarly eliminate or reduce the need for future medical treatment. These interventions have an identifiable cost and a potential identifiable saving in the reduction of other costs; this is a financial benefit that is measurable.

When an intervention has been successfully trialled in one site, it will have the proven capacity to be implemented on a broader scale across similar health care settings (hospital, primary care, rehabilitation, aged care, target population for a public health initiative.) The further savings accrue to the provider of the health services, which in most cases is the Commonwealth, or a State or Territory government.

Social Impact Bonds share some key characteristics with the clinical trials and pilot projects proposed by Research Australia:

- Social Impact Bonds require a fixed period. The conduct of a clinical trial or pilot project has a fixed period.
- Social Impact Bonds require a specified investment. The budget for a clinical trial or pilot project can be determined in advance.
- There is scope for co-investment by the Government through the provision of resources at the trial site.
- Social Impact Bonds also require an element of the capital and/or return to be at risk. New potential interventions provide this element of risk. While the outcome has been demonstrated experimentally, this is not the same as successfully implementing the intervention in a clinical setting or across a particular population as 'business as usual'.
- Clinical trials and pilot projects can address issues in healthcare that governments are interested in addressing.
- The intervention will have a basis in research, and the methodology for the trial can be documented and designed to be replicable.
- The intervention will be specific to improving health care and will have measurable outcomes- eg. bed days, increased participation in screening programs. It will be specifically designed to collect data and evaluate the outcomes.
- The intervention will have been identified through formal experimental research undertaken by a reputable research organisation and which has been identified as having the potential to provide benefits.
- In addition to professional investors there is a range of organisations with an existing financial interest in healthcare or a mission to improve healthcare that could be willing to invest.

Specific example- improving bowel cancer screening

Bowel cancer or colorectal cancer occurs in the colon or rectum. It is the second most common cancer affecting men and women in Australia after non-melanoma skin cancer, with more than 14,000 people diagnosed each year. If detected early, the chance of successful treatment and long-term survival improves significantly.¹³

Bowel cancer screening has been shown to be effective in assisting the early diagnosis of bowel cancer. Early treatment of bowel cancer is more effective than later treatment, improving survival rates for individual patients and reducing the cost of treatment compared to patients whose cancer is detected at a later stage.

¹³ <http://www.cancer.org.au/about-cancer/early-detection/early-detection-factsheets/bowel-cancer.html>

The success of early screening programs for bowel cancer depends in large part on the right people undergoing screening at the right time. Research has been undertaken in South Australia which identifies the effectiveness of screening tests. It has also identified groups within the target population with low participation rates and the reasons why participation rates in these groups are low.¹⁴

This information can be used to develop targeted promotional programs designed specifically to raise participation among these underrepresented target groups. A pilot study to test these programs is the obvious next step, but it has not been possible to secure funding for such a measure.

A social impact bond could be a very effective means of funding this research:

- The research already undertaken has identified theoretically useful interventions to increase screening, but they need to be tested through a larger scale trial.
- The effectiveness of the program to raise screening in target populations can be measured against past performance and/or screening levels in other populations, using data collected in relation to individuals undertaking screening. (A pilot could be in a specific geographic location.)
- Increased effectiveness of screening amongst target populations results in earlier interventions which improve the chance of successful treatment and long-term survival. Earlier treatment is generally simpler and less intensive than later treatment, resulting in reduced treatment costs, and a saving to health care providers, which are primarily governments.

Promoting Social Impact Bonds

Research Australia believes that measures to streamline and simplify the disclosure requirements for social impact bonds would be worthwhile. The philanthropic and ethical investment sectors are already strong supporters of healthcare delivery and health and medical research, and in many cases they have an expert knowledge of the sector which will assist them in evaluating proposals for investments in social impact bonds. They provide a ready-made market for investments that align with their values and missions.

There is also a role for Commonwealth, State and Territory governments in promoting social impact bonds, including in making the investment opportunities available. To date there has been only limited activity; NSW has initiated two trial projects (initial results are promising¹⁵) and the South Australian Government has issued a discussion paper seeking feedback on options for the use of Social Impact Bonds to deliver services.

In the case of health and medical research, the government has already made an investment in the research and is a potential beneficiary of the translation of the research into practice. Social impact bonds provide a means of capitalising on this investment without committing scarce government funds. Bonds can bridge the existing gap between the creation of knowledge and its translation into practice by financing the clinical trials and pilot projects needed to establish the financial and practical viability of new health based interventions identified by research. Once the benefits have been established, the government can proceed with the full roll out with a clear understanding of the expected outcomes and savings.

Research Australia supports the further development of Social Impact Bonds in Australia as a means of utilising private finance to fund public goods.

¹⁴ Javanparast S, Ward PR, Carter SM, Wilson CJ, Barriers to and facilitators of colorectal cancer screening in different population subgroups in Adelaide, South Australia, Medical Journal of Australia, 2012; 196: 521–523

¹⁵ 'Australia's first social benefit bond delivers for investors and families in first year' Social Ventures Australia Press Release 19 August 2014, socialventures.com.au

CONCLUSION

The focus of Research Australia's submission is the role of the financial system in supporting innovation, and specifically innovation of health and medical research in both the private and public sectors. There is significant potential for Australia to better partner our financial resources our research strengths and to create a stronger and more innovative economy.

We recognise that many of our comments and proposals have gone beyond regulation of the financial system to areas such as innovation and taxation policy, and this is because the financial system should not be viewed in isolation from its broader role in the economy. Financial regulation, industry support measures and taxation polices need to be considered together if we are to achieve an effective financial system that supports the efficient use of capital in support of economic growth. The public support provided for health and medical research is a good example of this- the benefits of the research to the economy and the Australian community are only realised if this new knowledge is applied, and the financial system has a key role to play in facilitating its application.

Improving the capacity of the financial system to support innovation is critical to Australia's future success as a productive, knowledge intensive economy with a sophisticated high- value manufacturing sector, and needs to be a key consideration of the Inquiry. The disproportionate importance of the philanthropic sector and venture capital to this venture and Australia's economic and social well being are a justification for their special consideration as part of the Financial System Inquiry.

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